



PROGRAM OUTCOME

PROGRAM SPECIFIC OUTCOME

COURSE OUTCOME

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PROGRAM OUTCOME OF BACHELOR'S DEGREE

PROGRAM OUTCOME OF BACHELOR'S DEGREE

Expectations from a graduation program-(UGC guidelines)

The students who complete three years of full-time study of an undergraduate program of study will be awarded a Bachelor's Degree

Some of the expected learning outcomes that a student should be able to demonstrate on completion of a degree-level program may include the following:

Demonstrate

1. Fundamental/systematic or coherent understanding of an academic field of study, its different learning areas and applications, and its linkages with related disciplinary areas/subjects;
2. Procedural knowledge that creates different types of professionals related to the disciplinary/subject area of study, including research and development, teaching and government and public service;
3. Skills in areas related to one's specialization and current developments in the academic field of study.
4. Use knowledge, understanding and skills required for identifying problems and issues, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, and their application, analysis and evaluation using methodologies as appropriate to the subject(s) for formulating evidence-based solutions and arguments;
5. Communicate the results of studies undertaken in an academic field accurately in a range of different contexts using the main concepts, constructs and techniques of the subject(s);
6. Meet one's own learning needs, drawing on a range of current research and development work and professional materials;
7. Apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts, rather than replicate curriculum content knowledge, to identify and analyze problems and issues and solve complex problems with well-defined solutions.
8. Demonstrate subject-related and transferable skills that are relevant to some of the job trades and employment opportunities.

PROGRAM OUTCOME (PO)

PROGRAM OUTCOME (PO) OF B.A

- 01.The students get knowledge in the field of social sciences, literature and humanities which sensitize them toward society needs and challenges
- 02.The B.A. graduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking.
- 03.This program also empowers the graduates to appear for various competitive examinations or choose the post graduate program of their choice.
- 04.It enables them to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.
- 05.This program provides the base to become socially and politically informed citizen.

PROGRAM OUTCOME (PO) OF B.SC

- 01.The B. Sc. Program develops scientific temperament and attitude among the science graduates.
- 02.The qualities of a science – observation, precision, analytical mind, logical thinking, clarity of thought and expression, systematic approach, qualitative and quantitative decision making are enlarged.
- 03.The program also empowers the graduates to appear for various competitive examinations or choose the post graduate program of their choice.
- 04.This program trains the learners to extract information, formulate and solve problems in a systematic and logical manner.
- 05.This program enables the learners to perform the jobs in diverse fields such as science, engineering, industry, survey, education, banking, development-planning, business, public service, self business etc. efficiently.

PROGRAM OUTCOME (PO) OF B.COM

- 01.They would be able to acquire basic and fundamental knowledge and skills for doing business and commercial activities of their choice.
- 02.This program also empowers the graduates to appear for various competitive exams or choose a profession of their choice such as CA, CS, ICWA, MBA, M.Com etc.
- 03.This program enables the students to acquire the accounting knowledge, management principles, retail trading, banking and insurance transactions, business economics and financial management.
- 04.The students also acquire knowledge in the field of management accounting, corporate accounting, statistical and mathematical techniques and knowledge relating to corporate law and business laws.
- 05.The students become capable of doing a business of their choice or can become employees having basic knowledge and skill required for such activities.

PROGRAM SPECIFIC OUTCOME (PSO)

PROGRAM SPECIFIC OUTCOME (PSO) (PSO)- B.A. POLITICAL SCIENCE

01. To get basic understanding of discipline of political science.
02. To describe the foundational theories of political science.
03. To get the knowledge of Indian political system and functioning of Indian govt.
04. To introduce the concept of comparative politics
05. To get the knowledge of major political thinkers across the world.
06. To describe the theories and nature of international politics
07. To get the knowledge of public administration as a discipline.

(PSO)- B.A. SOCIOLOGY

01. To get basic understanding of discipline of sociology
02. To describe the features and changing pattern of Indian society.
03. To introduce the concept of tribal society and its structure.
04. To describe the social problems and its impact on Indian society.
05. To introduce the research methods to students.
06. To understand the cycle of social change and reform process
07. To gain the knowledge of sociological theories and their development.

(PSO)- B.A. ECONOMICS

01. To get basic understanding of discipline of economics.
02. To describe the features and changing pattern of Indian economy.
03. To describe the theories of development of markets.
04. To get the knowledge of world economy and its relation with Indian economy.
05. To be able to understand the need of economic reforms
06. To understand the economic development models.
07. To get the knowledge of challenges before Indian economy and its features.
08. Students will understand the role finance institution, finance management, Banking E – Banking, money and Capital markets. Students will understand the concepts GNP, NNP, GDP, NDP, PCI, Disposable Income
09. The students will understand various concepts of Agricultural Economics and they can be well familiar with rural Economy. Students can work efficiently in the field of banking, finance, industry, farming, consumer rights, production, research and trade.

(PSO)- B.A. हिन्दी साहित्य

01. विद्यार्थियों को भाषा विकास के इतिहास एवं वर्तमान स्वरूप से परिचित कराना
02. हिन्दी साहित्य की विभिन्न विधाओं एकांकी, नाटक, कहानी, कविता आदि से परिचित कराना एवं उनमें संवेदनात्मक मूल्यों को विकसित करना

03. देवनागरी लिपि के विकास से परिचित कराना
04. हिन्दी की विभिन्न बोलियों में विद्यमान विविधता का ज्ञान प्रदान करना
05. छत्तीसगढ़ी भाषा के विकास एवं इतिहास से परिचित कराना
06. कार्यालयीन हिंदी भाषा की औपचारिक ज्ञान प्रदान करना

(PSO) – B.SC. BOTANY

01. Students shall be able to deal with the topics related to cell biology, genetics and Biochemistry.
02. They will be able to discuss on lower plants, Cryptogams and faanerogams.
03. They will be able to explain morphological characters, Anatomical character of a plant.
04. Students shall be able to explain the functioning, utilization and important of a plant in their surroundings.
05. They shall be able to clarify the systemic of plant according to morphological characteristics.
06. They shall be able to explain the experimental demonstration of plants to the others.
07. They shall be able to understand the developmental biology.
08. They will be able to discuss on lower plants, Cryptogams and faanerogams.
09. They will be able to explain morphological characters, Anatomical character of a plant.
10. They shall be able to clarity difference between divisions of plant kingdom.
11. Students shall be able to explain the concept of biotechnology, genetic, engineering, gene mapping and Tissue culture.
12. They shall be able to understand concepts of Biomolecules, Biochemistry and physiology of plants.

(PSO)–B.SC. ZOOLOGY

01. Depict, carry out & learn of major concept in zoology.

02. Develop an awareness of the impact of zoology on the atmosphere.
03. To ingrain scientific temperament in the student.
04. Understand the phylum history and evolution of chordates & non-Chordates by graph/picture/model etc.
05. To study and understand the micro-organism and their pathogenicity, symptoms & prevention.
06. Gain the knowledge about structural organization of Animal and their component.
07. Understand the embryological stage and their role.
08. To study and understand the vertebrate & invertebrate and their Physiology and anatomy.
09. Understand the cell transformation, immunity & cancer.

(PSO)–B.SC. CHEMISTRY

01. To understand the major concepts in all disciplines of chemistry.
02. Solve the question & also think concept and independently draw a logical conclusion.
03. Employ critical thought and scientific knowledge to design record and analyze the results of chemicals reaction.
04. Developed an awareness of the impact of chemistry on the environment, society and development the scientific community.
05. Find out the Green path for chemical reaction for sustainable development.
06. Obtain the knowledge of chemistry in theoretical and practically manner.
07. To describe nomenclature, stereo chemical, structure, reactivity & mechanism of the chemical reaction.
08. Understand chemical formula and solve numerical questions.
09. Use latest chemical tools, modes, charts & equipment's to gain knowledge of the subject
10. Understand better laboratory practices and safely measures.
11. Develop research related skills and Innovative technique.

COURSE OUTCOME

COURSE OUTCOME

COURSE OUTCOME -POLITICAL SCIENCE

This course enables its students to understand the foundations, theories and structure of Political system in country and outside world.

B.A. I Paper I - Political Theory

01. It introduces the concept of state sovereignty and the origin and role of state and the Study methods of Political Science
02. It helps to understand the basic concepts and kinds of Govt. as unitary and federal, welfare state, parliamentary and presidential system.
03. It develops the knowledge of the Organs of Government: Executive Legislature and Judiciary.
04. It gives knowledge of theories of human rights and liberty, equality and justice and gives them broad view towards understanding of political system in world politics.

B.A. I Paper II – Indian Government and Politics

- 01.This paper provides the knowledge of the Indian constitution and its features.
- 02.This paper gives the information of Fundamental Rights and duties to become ideal citizens.
- 03.To understand the functioning of the Indian govt. and its parliamentary structure.
- 04.To assess and evaluate the Indian party system, Elections and reforms.
- 05.It gives them basic understanding of the major issues of Indian politics Caste, Religion,Language and Region.
- 06.It provides them information of local govt. and its functioning.

B.A. II Paper I Western Political Thought

- 01.This paper gives knowledge of western and Indian political thought process and contribution to political understanding of human and state relations.
- 02.This paper gives information of major political thinkers such as Plato, Aristotle, Marx, Machiavelli, Rousseau, Bentham etc.
- 03.To understand the Indian political thought history and its development.
- 04.To understand the Political thought of Gandhi, Ambedkar, kautilya etc.

B.A. II Paper II Comparative Government and Politics

- 01.This paper provides information of the concept of comparative politics and its necessity.
- 02.This paper gives detailed knowledge of political system of UK, USA, CHINA and SWITZERLAND.
- 03.To understand the concept of presidential form of govt. and direct democracy and one party rule.
- 04.It helps them to gain the knowledge of political socialization, culture and system and its changing pattern

B.A. III Paper I International Politics and Foreign Policy of India

- 01.Basic concepts of International relations and politics and its development across the world.
02. It provides the knowledge of Indian foreign policy and its relation with the world politics. India's relations with its major powers and other countries.
- 03.To understand the world political history and changing pattern.

04. This paper gives knowledge of major international challenges such as environmentalism, Arms disarmament, Terrorism, Human rights and need of UNO reforms.
05. To understand the theories of world politics and concept of national interest.

B.A. III Paper II Public Administration

01. This paper gives information of public administration as a discipline and its modern concepts and reforms.
02. The kinds and functioning of Indian executive.
03. The functioning of public administration in a welfare state and the concept of globalization, privatization and liberalization.

COURSE OUTCOME - SOCIOLOGY

B. A. Part – I

Paper no-I, Introduction to sociology

Paper no-II, Contemporary Indian society

01. Introduction to the basic concept of sociology, subject matter & importance of sociology and origin and development of sociology.
02. Understanding in brief the knowledge of human society and sociology Scientific method
03. Implementing the Scientific approach in the student.
04. Introduction to the various scientific methods in the Students.
05. Developing the research attitude among student.

BA. PART 2

Paper no-I, Society of India

Paper no-II, Crime and Society

01. Getting acquainted with structure and composition of India society.
02. Discussing a brief outline of the making of the Indian society.
03. Awareness of contemporary social problems in India.
04. Introduction to major theories of Punishment and social structure and anomie.

B. A. Part-III

Paper-I, Sociology of Tribal Society

Paper-II, Social Research Methods

01. Acquaintance with different types of research and issues in research.
02. Importing basic Research Skills.
03. Analyzing the concept of Tribe.
04. Understanding sociocultural profile.
05. Introduction to various Steps in conducting Research.
06. Understanding problems of Tribal people.

COURSE OUTCOME – ECONOMICS

Ba.1

Paper 1 micro economics

Paper 2 Indian economy

01. To understand various aspects and features of Indian economy.
02. To understand the theories of production and cost, market structure, theories of distribution
03. To understand the basics of welfare economics
04. Student will know about Consumer's behavior, Demand analysis, cardinal and ordinal utility. It also provides the information to the student for elasticity of demand, price, income and cross elasticity of demand
05. Students will learn about the concepts of statistical methods.
06. Students will know the concepts of supply of money and demand for money, types of money, classical and modern theory of interest, Trade cycle Theory.
07. Students will know demographic features, size, sex ratio, growth rate, migration, Industrial development, Industrial policy, FERA, FEMA, Act and the Concept of LPG

08. To understand the role of external factors in Indian economy

Ba.2

paper 1 macro economics

Paper 2 money banking and public finance

01. To understand the concept of national income and measurement
02. To understand the basics and theories of macro economics
03. To provide the detailed knowledge of consumption function and investment function
04. To introduce the theories and models of trade cycle
05. To provide the knowledge of international trade and theories, Tariffs & import quotas, Concept of optimum tariff. Balance of trade & balance of payment
06. To provide the knowledge of concept & components of BOP, Equilibrium & disequilibrium in BOP, Relative merits & demerits of devaluation, Foreign trade multiplier
07. To provide the knowledge of concept of money, Value of Money, Inflation, deflation, types, causes and effects on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation
08. To get the knowledge of commercial banking, Quantitative and qualitative methods of credit control; Bank rate policy; Open market operations
09. To get the knowledge of public finance; public goods v/s private goods, The Principle of maximum social advantage; Role of the government in economic activities, Public expenditure
10. To provide the knowledge of Public revenue; taxation - Meaning, Canons and classification of taxes, Division of tax burden, The benefit and ability to pay approaches; Impact and incidence of taxes; Taxable capacity; Effects of taxation; Characteristics of a good tax system; Equity and Justice in Taxation, Major trends in tax revenue of the Central and State Government in India
11. To get the basics of public debt and financial administration: Sources of public borrowing, Effects of public debt, method of debt redemption. The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India

Ba.3

paper 1 development and environmental economics

Paper 2 statistical methods

01. To provide the knowledge of relation of economics and development
02. To provide the knowledge of population problems and growth pattern of population, theories of demographic pattern
03. To get the knowledge of environmental issues and sustainable development
04. To get the knowledge of intellectual capital, sustainable agriculture, globalization and agriculture growth
05. To get the knowledge of Importance of Statistics in Economics, Statistical investigation, Census and sampling methods of statistical investigation, Statistical data, Collections of Data, Primary & Secondary Data.
06. To get the knowledge of dispersion, co relation, and other measuring methods

COURSE OUTCOME -COMMERCE

B.Com. First Year:

Group: 1

Subject: Financial Accounting:

Students are benefitted by the knowledge of basics of financial accounts in which golden rule of accounting, accounting concepts & principles, equation, journals, ledger, trial balance and final accounts as income statements like trading, P&L a/c, Financial Position (Balance Sheet). Bank reconciliation statement is directly related to rectify the transactions of bank passbook and bank statement. Students can apply this knowledge in various field of accounting. Tally is software package for accounting.

Group: 1

Subject: Business Communication:

01. To understand the basic elements and classification of communication.
02. To develop knowledge about evaluation of communication thoughts.
03. To enhance their writing skill and report writings.
04. Better communication skill and interview techniques.

05. Effective listening and proper feedback.

Group: 2

Subject: 1. Business Mathematics:

01. To understand the basic calculations and simplest techniques of calculation.
02. To provide practical knowledge regarding simple interest and compound interest.
03. Ratio and proportion is taught which is practically used in the real life.
04. Average and percentage is used everywhere.
05. Logarithm is used to calculate large numbers.

Group: 2

Subject: 2. Business Regulatory Framework

01. To help the students to understanding about the Law of contract in which proposal, acceptance, consideration, legal object, capacity of the party entering into the contract.
02. To introduce the concept of sales, its rules and regulations and remedies for the unpaid seller.
03. Negotiable instruments are dealt with the students in which cheques, bills of exchange, promissory notes etc.
04. Consumer Protection Act is very essential to the present scenario which is taught to the students.

Group: 3

Subject: 1. Business Environment:

01. Knowledge of Basics in business environment is provided to the students.
02. Environmental protection awareness is spread among the students.
03. Theory of monetary and fiscal policy, globalization, and devaluation of money is discussed.
04. Balance of trade and balance of payments is included in the syllabus.
05. Students are provided the knowledge regarding WTO, UNCTAD, World Bank, IMF and its implication on trade.

Group: 3

Subject: 2. Business Economics:

01. Students are provided the knowledge about micro economics, macroeconomics.
02. Concepts of demand and supply, factors of production.
03. National income is taught which is very important to the students.
04. Pricing policy in perfect competitive market, monopoly, monopolistic competition.

B.Com. Second Year:

Group: 1

SUBJECT: 1. CORPORATE ACCOUNTING:

01. Students learnt about share and debenture.
02. Valuation of shares and redemption of debenture is taught to the students.
03. Company final account is essential to know at this competitive era.
04. Merger and acquisition is the trending features of the era, thus it is important for all students.

SUBJECT: 2. COMPANY LAW:

01. Students are made aware of the company law 2013 in which new salient features are included.
02. Types of company and its formation is essential to know every students.
03. How company is incorporated and started its business in the market, all rules and regulations are explained.

Group: 2

SUBJECT: 1. COST ACCOUNTING:

01. Costing is essential to every manufacturing concern.
02. Unit costing and cost sheet is taught to the students.
03. Job Costing and Batch Costing is important.
04. Contract costing is very useful to the real life.

SUBJECT: 2. Principles of Business Management

01. To introduce the meaning and scope of Business Management.
02. Induce students by motivational theories.
03. Understand the concept of planning decision making.
04. Introduction on Managerial control.

Group: 3

SUBJECT: 1. Business Statistics

01. To understand the basic knowledge about statistics.
02. To provide practical Exposure on calculation of measures of central tendency.
03. To provide practical approach on correlation and regression.
04. To understand the concept of Index number.
05. Concept of probability and its applications.

SUBJECT: 2. Fundamentals of Entrepreneurship

01. To develop the concept of entrepreneurship and its applicability.
02. To create awareness on various entrepreneurial program.
03. Entrepreneurial behavior and environment is essential.
04. Role of entrepreneurship and its scope.

B.Com. Final Year:

SUBJECT: 1. Income Tax

01. To introduce the basic concepts of income from all major headings.
02. Residential status of the income tax payer is introduced.
03. Income from Salary, House Property, Business/Professions, Capital Gains and income from other sources are explained to the students.
04. Students are taught about deductions allowed u/s 80C to 80 U.
05. Income tax calculation and tax planning is beneficial to the students.

SUBJECT: 2. Auditing

01. To know the nature and scope of auditing.
02. To promote the internal check system.
03. Audit of Company, partnership firms, PPP Firms etc. are important for the students.
04. Auditing is essential in the competitive era.

Subject: 3. Indirect Tax

01. To develop an idea about Central Excise.
02. To enlighten the concept of state excise, CENVAT.

03. Enabling the students to have the fair idea on role of customs in international trade.
04. To determine the concept of central sales tax and state commercial tax.

Subject: 4. Management Accounting

01. To enlighten the knowledge of management accounting.
02. Helps to give proper idea on financial statement analysis in practical points of view.
03. Cash Flow and Fund flow statements are essential in the real world.
04. Accounting ratios are very useful to the business.
05. Marginal costing and differential costing is important to the students.

Group: 1

Subject: 1. Principles of Marketing

01. Nature and scope of marketing and applicability of marketing.
02. To enhance the knowledge of students on consumer behavior.
03. Product life cycle and its stages are very important for the manufacturing concern.
04. Pricing policies and sales forecasting are essential for the concern.

Subject: 2. International Marketing

01. To help the students regarding international marketing.
02. Identifying and selecting foreign market.
03. Trade association and international distribution are taught.
04. Importance of foreign trade and EXIM policy.

COURSE OUTCOME - BOTANY

B. Sc. I (A)

Bacteria, Viruses, Fungi, Lichens and Algal

01. They shall understand the general features, structures, reproduction and economic importance of microbes.
02. Students shall be able to understand habit, habitat, cellular

composition, nutrition, reproduction of fungi and Algae and their association.

03. Students shall be able to identify the useful and harmful fungi and their use in life.
04. They shall be able to explain the value of lichens.

B. Sc. I (B)

Bryophytes, Pteridophytes, Gymnosperm and Palaeobotany

01. To identify the characteristics, affinities, range of thallus organization, classification and ecological importance of Bryophytes, Pteridophytes and gymnosperm.
02. Students shall be able to explain the different type of gymnospermic plant with their morphological characteristics.
03. Students shall be able to understand the use of fossil to study the plant as well as importance of geological era.

B. Sc. II (A)

Diversity of Seed Plants and their Systematics

01. Students shall be able to understand the classification of different taxonomists.
02. They shall be able to understand the relation of taxonomy to cytology, phytochemistry and taxometrics.
03. Students shall be able to understand Principle and rules, taxonomic rank, Principles of priority of Botanical nomenclature.

B. Sc. II (B)

Structure, Development and reproduction in flowering plants

01. Students shall be able to understand the morphological, Anatomical and developmental structures of plants.
02. They shall understand the histological organization and vascularisation of plants.
03. Students shall be able to understand the horticultural concepts, vegetative propagation grafting and economic aspects.

B. Sc. III (A)

Plant Physiology, Biochemistry and Biotechnology

01. Students shall be able to understand physiological process of plants and relationship of plant to water, soil, and organic

substances.

- 02.They shall be able to deal with enzymology, growth and developmentalprocess of plants.
- 03.They shall be able to understand the basic concepts of genetic engineeringand Biotechnology.

B. Sc. III (B)

Ecological and Utilization of Plants

- 01.Students shall be able to understand the biological and physical factors of environment and their existence and importance to environment.
- 02.Students shall be able to explain the functioning of ecosystem.
- 03.They shall be able to Explain about economically important plants.
- 04.They shall be able to explain the ecological related topics.

COURSE OUTCOME- ZOOLOGY

B.SC 1ST YEAR

PAPER 1: CELL BIOLOGY AND NON CHORDATA

PAPER 2: CHORDATA & EMBRYOLOGY

1. Students will understand about the cell & cell division, elementary idea of immunity etc.
2. They will get knowledge about general characters & classification of phylum : protozoa, porifera & platyhelminthes& phylum mollusca etc.
3. They will understand about phylum hemichordate (balanoglossus), protochordata (amphioxus)etc.
4. They will understand about the different class of vertebrates: pisces, amphibian, reptiles, aves, mammals.
5. They will understand about fertilization & embryonic introduction.

B.SC 2ND YEAR

PAPER 1: ANATOMY & PHYSIOLOGY

PAPER 2: VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY BEHAVIOUR, EVOLUTION & APPLIED ZOOLOGY

1. Students will understand about integument & their derivatives alimentary canal, respiratory organs endoskeleton circulatory system urinogenital system, nervous system structure & function of eye & ear etc.
2. They will understand about gonads & genital ducts digestion and absorption physiology of heart blood coagulation respiration excretion physiology of muscle contraction physiology of nerve impulse etc.
3. They will also understand about endocrine glands: structure & function, hormone receptor biosynthesis and secretion of hormones, reproductive cycle menuration etc evidences & theories of evolution , evolution of horse , study about ethology , patterns of behaviour, reproductive behavioural patterns, hormones & behaviour.
4. They will understand the different types of cultures like: prawn culture sericulture pisciculture apiculture poultry keeping elements of pest control etc.

B.SC FINAL YEAR

PAPER 1: ECOLOGY, ENVIRONMENTAL BIOLOGY: TOXICOLOGY, MICROBIOLOGY & MEDICAL ZOOLOGY

PAPER 2: GENETICS CELL PHYSIOLOGY, BIOCHEMISTRY & BIOTECHNIQUES

1. The students will understand about aims & scopes of ecology, major ecosystem of the world population, communities & ecosystem, bio-geo chemical cycles air & water pollution laws of limiting factor food chain in fresh water ecosystem energy flow in ecosystem conservation of natural resources environmental impact assessment.
2. Study about toxicology: definition & classification, basic concept, principal of systematic toxicology, heavy metal toxicity , animal poisons : snake venom , food poisoning etc.

3. To understand microbiology: applied & general, domestic water & sewage, milk & milk products, industrial microbiology etc medical zoology brief introduction of pathogenic microorganisms brief account of life history & pathogenicity protozoa: Entamoeba, helminthes: schistosoma, vector insects.
4. They will understand about linkage & linkage maps, gene interaction, complementary gene, mutation, human genetics, general idea about Ph & buffer, transport across membrane, active transport in mitochondria, enzymes, amino acids & peptides, carbohydrates & its metabolism, glycolysis, lipid metabolism, protein catabolism, application of biotechnology, recombinant DNA & gene cloning, etc. Principles & techniques about: Ph meter, colorimeter, microscopy, centrifuge, separation of biomolecules etc.

COURSE OUTCOME- CHEMISTRY

B.Sc. 1st year

Inorganic chemistry

01. To understand the including effect & other field effect.
02. To discuss the crown ether & inclusion compound.
03. Knowledge about the intermediate like carbocation, carbanion, carbene, nitrene etc.
04. knowledge the hybridization in molecules.

Organic chemistry

01. Define organic acids & base.
02. Distinguish between geometrical & optical isomers.
03. Know kinetic, mechanism and stereochemistry SN1 & SN2 reaction.

04. Compare between E1 and E2 reaction.

Physical chemistry

01. To discuss about Gaseous theory.
02. To know the solid state theory and Braggs equation.
03. Discuss the colidal state and Tindal effect in surface chemistry.
04. Knowledge the rate of reaction & order of reaction – first, second & third order reaction.

B.Sc. 2nd year

Inorganic chemistry

01. Understand the electronic configuration & varies properties of d & f block elements.
02. Know the VBT theory for complexes.
03. To understand the extraction methods for lanthanides & acteniods.
04. Know the electronic spectra of elements.

Organic chemistry

01. To understand the monohydric, dihydric and trihydric alcohol.
02. Know the benzoin condensation and various name reaction.
03. Knowledge the heterocyclic compound and their synthesis.
04. Understanding the amine acids, lipids and other biomolucularcompound .

Physical chemistry

01. Knowledge the thermodynamic 1st, 2nd and third law of thermodynamic.
02. To understand the cell reaction and cell rotation.
03. Know the nernst equation and Gibb's free energy.
04. Discuss about the corrosion.

B.Sc. 3rd year

Inorganic chemistry

01. Know the metal ligand bonding nature & its properties.
02. Study the magnetic properties and its behavior.

03. Get knowledge about Bioinorganic chemistry.
04. Study about Essential & toxic element.

Organic chemistry

01. To study UV, IR, & NMR, ESR spectroscopy
02. Discuss about electronic transition molecule.
03. Knowledge about synthetic dyes & Rubbers.
04. Understand the organometallic chemistry & its daily use.

Physical chemistry

01. Understand the completion effect & black body radiation.
02. Know about Hook's law.
03. Discuss about Jablonski diagram.
04. Knowledge the result's law.

COURSE OUTCOME - HINDI LITERATURE

(प्राचीन हिन्दी काव्य)

01. छात्रों को हिंदी के गद्य और पद्य के कवियों एवं लेखकों से परिचित कराना।
02. साहित्य के विभिन्न विधाओं के माध्यम से छात्रों का भावात्मक एवं सृजनात्मक ज्ञान विकसित करना
03. छात्रों में साहित्य एवं साहित्यकारों के सृजनात्मक लेखन के प्रति अभिरूचि विकसित करना

B. A. I (हिंदी कथा साहित्य)

01. छात्रों में कथा साहित्य के प्रति अभिरूचित विकसित करना

02. छात्रों में भाषा के रचनात्मक पहलुओं की समझ विकसित करना
03. छात्रों में हिंदी तथा मानक लिपियों की समझ विकसित करना
04. छात्रों में कहानियों एवं उपन्यासों के माध्यम से लेखकों की सृजनात्मक शैली की समझ विकसित करना।

B. A. II(अर्वाचीन हिंदी काव्य)

01. छात्रों को हिंदी के कवियों एवं उनकी रचनाओं से अवगत कराना
02. छात्रों में देवनागरी लिपि के अंतर्गत उसकी उत्पत्ति, वैज्ञानिकता एवं विशेषता से अवगत कराना
03. छात्रों को हिंदी व्याकरण का ज्ञान कराना
04. छात्रों को हिंदी के कार्यालयीन एवं व्यवहारिक पत्रों के स्वरूप से परिचित कराना

B. A. II(हिंदी निबंध तथा अन्य विधाएं)

01. छात्रों को नाटककार, एकांकीकार एवं निबंधकारों एवं उनकी रचनाओं से परिचित कराना
02. छात्रों में नाटक एवं एकांकियों के माध्यम से सामाजिक समस्याओं से परिचित कराना
03. छात्रों में लेखन शैली के प्रति आलोचनात्मक दृष्टि विकसित करना

B. A. III(छत्तीसगढ़ी भाषा एवं साहित्य)

01. छात्रों को छत्तीसगढ़ी भाषा के प्रति अभिरूचि विकसित करना
02. छात्रों को छत्तीसगढ़ी साहित्य से परिचित करना
03. छात्रों को कंप्यूटर में हिंदी के अनुप्रयोग से परिचित करना

B. A. III(हिंदी भाषा एवं साहित्य का इतिहास तथा काव्यांग विवेचन)

01. छात्रों को हिंदी भाषा के विभिन्न रूपों का ज्ञान कराना
02. छात्रों की हिंदी भाषा के इतिहास एवं आधुनिक साहित्यिक विशेषताओं से परिचित कराना
03. प्रतिनिधि रचनाकारों की कृतियों एवं उनकी साहित्यिक विशेषताओं से परिचित कराना
04. छात्रों को काव्य स्वरूप एवं प्रयोजन से परिचित कराना

COURSE OUTCOME - HIND LANGUAGE (COMPULSORY)

01. छात्रों को हिंदी भाषा की उत्पत्ति विकास एवं उपभाषाओं एवं बोलियों का ज्ञान प्रदान करना
02. छात्रों की हिंदी भाषा के कवियों एवं लेखकों की सृजनात्मक लेखन का ज्ञान प्रदान करना
03. छात्रों को हिंदी व्याकरण एवं भाषा शुद्धियों का ज्ञान कराना
04. छात्रों में छत्तीसगढ़ी साहित्य के प्रति अभिरूचित विकसित करना
05. भाषा के माध्यम से सांस्कृतिक एकता का विकास करना
06. राजभाषा के रूप में हिंदी का विकास करना

COURSE OUTCOME - ENGLISH LANGUAGE (COMPULSORY)

01. Enhance language through a task-based & learner – centric syllabus
Familiarize with various aspects of our new state of Chhattisgarh.
02. Carry out all the LSRW skills
03. Channelize energy through soft skills and Value orientation ? Learn good English to prosper in professional and personal lives
04. Become proficient in English for global competency
05. To develop their critical thinking capabilities focused through the course as an important need.
06. To meet a variety of real life communication needs.
07. The students learn/are equipped with the practical, emotional, intellectual and creative aspects of language by integrating knowledge and skills.
08. The text focuses on readability and testability.
09. The exercises and the pre & post reading activities in the text draw the student into the book and make them to read it with understanding and insight and also encourage them to think beyond the text.
10. The students gain ample practice in writing skills. They can write essays and reports and differentiate between objective and subjective writing.

11.They become aware of the varieties of English through inputs in British and American Vocabulary. They are also exposed to different literary genres of prose and poetry

COURSE OUTCOME - ENVIRONMENTAL STUDIES (COMPULSORY)

- 01.It provides knowledge of environmental issues to students and sensitize them towards importance of environment conservation.
- 02.It enables them about climate change and impact on human society.
- 03.It enables them to learn about relation between environment conservation and sustainable development.
- 04.It gives them knowledge about kinds of pollution and its impact on economy and health issues of humans.
- 05.It gives them information of the efforts being made by govt. and international community.
- 06.It introduce them importance of renewable energy
- 07.It gives them knowledge of ecosystem and its functioning.

प्रथम प्रश्न पत्र : राजनीतिक सिद्धान्त Paper I : Political Theory

- इकाई 1 : राजनीति विज्ञान का अर्थ, परिभाषा (आधुनिक अवधारणा सहित) । राजनीति एक विशिष्ट मानवीय व्यवहार के रूप में । शक्ति, सत्ता, प्रभाव : अर्थ, विशेषताएं, प्रकार । राजनीति विज्ञान की अध्ययन पद्धतियां : परम्परागत एवं व्यवहारवाद एवं उत्तर व्यवहारवाद ।
- Unit 1 : Meaning and Definition of Political Science (with modern concept). Politics as a specific human behaviour. Power, Authority and Influence : meaning, features and kinds. Method of Study to Political Science : Traditional , Behaviouralism and Post Behaviouralism.
- इकाई 2 : राज्य एवं उसके आवश्यक तत्व । राज्योत्पत्ति के विभिन्न सिद्धान्त, मार्क्सवादी सिद्धान्त । सावयविक सिद्धान्त ।
- Unit 2 : State and its essential elements. Various theories of the origin of the State, Marxist theory . Organismic Theory.
- इकाई 3 : सम्प्रभुता एवं उसकी बहुलवादी आलोचना । अधिकार: अर्थ, प्रकार , सिद्धान्त । कर्तव्य । स्वतन्त्रता : अर्थ , प्रकार, संरक्षण । समानता : अर्थ , प्रकार एवं स्वतन्त्रता से सम्बंध । प्रजातन्त्र : परिभाषा, व्यापक अर्थ, चुनौतियां, सफलता के लिए आवश्यक शर्तें , गुण-दोष । प्रत्यक्ष प्रजातन्त्र ।
- Unit 3: Sovereignty and its pluralistic criticism. Rights : meaning, kinds and theories. Duties. Liberty : meaning, kinds , safeguards. Equality : meaning, kinds and relations with Liberty. Democracy : meaning, comprehensive meaning, challenges, conditions for its success, merits and demerits. Direct Democracy.
- इकाई 4 : शासन के प्रकार : एकात्मक व संघात्मक , संसदीय व अध्यक्षीय, निरंकुशतन्त्र । शासन के अंग : कार्यपालिका, व्यवस्थापिका, न्यायपालिका । शक्ति पृथक्करण का सिद्धान्त व नियंत्रण –संतुलन का सिद्धान्त । संविधान : अर्थ , प्रकार । प्रतिनिधित्व के सिद्धान्त एवं निर्वाचन प्रणालियां ।
- Unit 4 : Kinds of Government : Unitary and Federal, Parliamentary and Presidential. Dictatorship. Organs of Government : Executive, Legislature and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitution : meaning and kinds. Theories of representation and Electoral Process.
- इकाई 5 : लोककल्याणकारी राज्य । दल पद्धति : अर्थ , प्रकार, पद्धति । दबाव समूह : अर्थ, प्रकार, तकनीक । सामाजिक परिवर्तन : अर्थ, विशेषताएं , सिद्धान्त । नारीवाद, राष्ट्रवाद ।
- Unit 5 : Public Welfare State. Party System : meaning , kinds , process. Pressure Groups : meaning, kinds and technique. Social Change : meaning, characteristics, theories. Feminis. Nationalism.

राजनीतिक सिद्धांत

बी.ए. प्रथम
प्रथम प्रश्न पत्र

1. ओ.पी. गाबा, समकालीन राजनीतिक सिद्धांत, मयूर पेपर बैक्स नोएडा।
2. ओ.पी. गाबा, राजनीति सिद्धांत की रूपरेखा, मयूर पेपर बैक्स नोएडा।
3. जे.सी. जौहरी व सीमा जौहरी, आधुनिक राजनीति विज्ञान के सिद्धांत, स्टर्लिंग पब्लिकेशन।
4. पंत गुप्ता जैन, राजनीति शास्त्र के आधार, सेन्ट्रल पब्लिकेशिंग हाऊस इलाहाबाद।
5. प्रो. आनंद प्रकाश अवस्थी, भारतीय शासन एवं राजनीति, लक्ष्मीनारायण अग्रवाल, आगरा।
6. Andrew Haywood Political Theory, An Introduction.
- 7- O.P. Gaba An Introduction to Political Theory, Macmillan India Ltd.

द्वितीय प्रश्न पत्र : भारतीय शासन एवं राजनीति Paper II : Indian Government and Politics

- इकाई 1 : भारतीय राष्ट्रीय आन्दोलन : 1858 का प्रथम स्वतन्त्रता संग्राम, असहयोग आन्दोलन, सविनय अवज्ञा आन्दोलन, भारत छोड़ो आन्दोलन । भारत का संविधानिक विकास : 1858, 1909, 1919 और 1935 का भारत शासन अधिनियम ।
- Unit 1 : Indian National Movement : First Independence Movement 1858, Non cooperation Movement, Civil Disobedience Movement and Quit India Movement. Constitutional Development of India : Govt. of India Act of 1858, 1909, 1919 and 1935.
- इकाई 2 : भारतीय संविधान : विशेषताएं , प्रस्तावना, स्रोत, । संघीय व्यवस्था , मौलिक अधिकार, मूल कर्तव्य, नीति निर्देशक तत्व । संविधान संशोधन प्रक्रिया ।
- Unit 2 : Constitution of India : Characteristics, Preamble, Sources. Federal System. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.
- इकाई 3 : संघीय कार्यपालिका : राष्ट्रपति, उपराष्ट्रपति, मन्त्रिपरिषद् और प्रधानमंत्री । संघीय व्यवस्थापिका : संसद : लोकसभा और राज्यसभा । संसदीय प्रक्रिया ।
- Unit 3 : Union Executive : President , Vice President, Council of Ministers and Prime Minister. Union Legislature : Parliament: Lok Sabha and Rajya Sabha. Parliamentary Procedure.
- इकाई 4 : संघीय न्यायपालिका : सर्वोच्च न्यायालय : गठन, क्षेत्राधिकार, न्यायिक पुनरावलोकन, न्यायिक सक्रियतावाद । राज्य कार्यपालिका : राज्यपाल , मन्त्रिपरिषद् और मुख्यमंत्री ।
- Unit 4 : Union Judiciary : Supreme Court : Organisation, Jurisdiction, Judicial Review, Judicial Activism. State Executive : Governor, Council of Ministers and Chief Minister.
- इकाई 5 : राज्य व्यवस्थापिका : विधानसभा एवं विधानपरिषद् । निर्वाचन आयोग व चुनाव सुधार । राष्ट्रीय व क्षेत्रीय दल । भारतीय राजनीति के प्रमुख मुद्दे : जाति, धर्म, भाषा और क्षेत्र । पंचायती राज व्यवस्था ।
- Unit 5 : State Legislature : Legislative Assembly and Legislative Council. Election Commission and Election Reforms. National and Regional Parties. Major issues of Indian Politics : Caste, Religion, Language and Region. Panchayati Raj System.

संदर्भ पुस्तकें (Reference Books)

8. डॉ. सुभाष कश्यप, भारत का संवैधानिक विकास और संविधान, हिन्दी माध्यम कार्यान्वयन निदेशालय दिल्ली विश्वविद्यालय ।
9. डॉ. सुभाष कश्यप, हमारी संसद, भारत की संसद एक परिचय, राष्ट्रीय पुस्तक न्यास ।
10. डॉ. रूपा मंगलानी, भारतीय शासन एवं राजनीति, राजस्थान हिन्दी ग्रंथ अकादमी जयपुर ।
- 11- M.V. Pylee , Constitutional History of India , S.Chand.
- 12- D.D. Basu Indian Constitution

प्रथम प्रश्नपत्र : राजनीतिक चिन्तन Paper I : Political Thought

- इकाई 1 : प्लेटो : आदर्श राज्य – न्याय, शिक्षा, साम्यवाद, दार्शनिक शासक ।
अरस्तू : राज्य, दासप्रथा, नागरिकता , क्रान्ति ।
- Unit 1 : Plato : Ideal State : Justice, Education, Communism , Philosopher King.
Aristotle : State, Slavery, Citizenship , Revolution.
- इकाई 2 : मैकियावेली : युग का शिशु, धर्म व नैतिकता, राजा के कर्तव्य और आचरण ।
हॉब्स : सामाजिक समझौता सिद्धान्त – लेवियाथन । लॉक : सामाजिक समझौता सिद्धान्त ।
रुसो : सामाजिक समझौता सिद्धान्त , सामान्य इच्छा ।
- Unit 2 : Machiavelli : Child of his times, Religion and Morality, Duties and Conduct of King. Hobbes : Social Contract Theory: Leviathan. Locke : Social Contract Theory. Rousseau : Social Contract Theory and General Will.
- इकाई 3 : बेंथम : उपयोगितावाद । मिल : उपयोगितावाद में संशोधन, स्वतंत्रता और प्रतिनिधि शासन ।
ग्रीन : राजनीतिक विचार । मार्क्स : राजनीतिक विचार ।
- Unit 4 : Bentham : Utilitarianism. Mill : Amendment in Utilitarianism. Liberty and Representative Government. Green : Political Thoughts. Marx : Political Thoughts.
- इकाई 4 : आदर्शवाद, व्यक्तिवाद, उदारवाद, समाजवाद, फासीवाद : विशेषताएं और आलोचना ।
- Unit 4 : Idealism, Individualism, Liberalism, Socialism, Fascism : Features and Criticism.
- इकाई 5 : मनु और कौटिल्य : सप्तांग सिद्धान्त, राजा और राजपद, प्रशासकीय व्यवस्था, राज्यमण्डल ।
गांधी : सत्य, अहिंसा, सत्याग्रह एवं राजनीतिक विचार । अम्बेडकर : राजनीतिक एवं सामाजिक विचार
दीनदयाल उपाध्याय : एकात्ममानववाद ।
- Unit 5 : Manu and Kautilya : Saptang Theory, King and Kingship, Administrative System, Rajyamandal.
Gandhi : Truth , Non violence , Satyagrah and Political thoughts.
Ambedkar : Political and Social thoughts.
Deen Dayal Upadhyay : Akatmamanavvad.

बी.ए.द्वितीय वर्ष
प्रथम प्रश्न पत्र राजनीतिक चिन्तन

क्र	पुस्तक का नाम	लेखक का नाम
1.	राजनीतिक चिन्तन की रूपरेखा	ओ.पी. गावा
2.	राजनीतिक चिन्तन का इतिहास	जीवन मेहता
3.	राजनीतिक चिन्तन का इतिहास	बी.एल. फाडिया
4.	पाश्चात्य एवं आधुनिक राजनीतिक चिन्तन का इतिहास	प्रभु दत्त शर्मा
5.	पाश्चात्य राजनीतिक चिन्तन	जे.पी. सूद
6.	भारतीय राजनीतिक चिन्तन	वी.पी. वर्मा
7.	भारतीय राजनातिक चिन्तन	अवस्था एव अवस्था
8.	भारतीय राजनातिक चिन्तन	आ.पी. गावा
9.	पालाटकल थॉट	सा.एल. बपर
10.	हिस्ट्री ऑफ पालीटिकल थियरी	जार्ज एच सेबाइन
11.	रिसेन्ट पालीटिकल थॉट	फ्रान्सीस डब्लू कोकर
12.	मास्टर ऑफ पालीटिकल थॉट	माईकल बी. फास्टर
13.	ग्रेट पालीटिकल थॉट	विटियम इवेस्टीन

Reference:-

- W.A. Dunning: **A History of Political Theories**, (Vols. I, II & III), New York: Mcmillan, 1930
- G.H. Sabine: **A History of Political Theory** (English & Hindi), New Delhi: Oxford & IBH Publishing Co., 1963
- C.L. Wayper: **Political Thought** (English & Hindi), Bombay: B.I. Publications Pvt. Ltd., 1974
- E. Barker: **Greek Political Theory: Plato and His Predecessors**, London: Methuen & Co. Ltd., 1918
- **Political Thought in England**, London: Thornton Butterworth Ltd., 1928
- Gettell: **History of Political Thought** (English & Hindi)
- K.P. Jaiswal: **Hindu Polity** (English & Hindi), Bangalore: Bangalore Printing & Publishing Co., 1955
- V.P. Verma: **Modern Social and Political Thought of India**, Agra: L.N. Agrawal Educational Publishers, 1961
- N.C. Bandopadhyaya: **Development of Hindu Polity and Political Theory**, New Delhi: Munshiram & Manoharlal, 1980
- Arvind Sharma, **Modern Hindu Thought: The Essential Texts**, New Delhi: OUP, 2002
- John Dunn, **Western Political Theory in the Face of the Future**, New York: Cambridge University Press, 1993
- Jonathan Wolff, **An Introduction to Political Philosophy**, Revised Edition, Oxford: OUP, 2006
- J.E. Parsons Jr., **Essays in Political Philosophy**, Washington D.C., University Press of America, 1982

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द्वितीय प्रश्नपत्र : तुलनात्मक शासन एवं राजनीति Paper II : Comparative Government and Politics

- इकाई 1 : ब्रिटिश संविधान : विकास, विशेषताएं, कार्यपालिका , व्यवस्थापिका, न्यायपालिका ।
- Unit 1 : British Constitution : Evolution , Salient Features, Executive, Legislature and Judiciary.
- इकाई 2 : संयुक्त राज्य अमेरिका का संविधान : विशेषताएं, कार्यपालिका , व्यवस्थापिका, न्यायपालिका , शक्ति पृथक्करण व नियंत्रण संतुलन का सिद्धान्त ।
- Unit 2 : Constitution of United States of America : Salient Features, Executive, Legislature and Judiciary. Theory of Separation of Powers and checks and balances.
- इकाई 3 : स्विटजरलैण्ड का संविधान : विशेषताएं, कार्यपालिका , व्यवस्थापिका, न्यायपालिका , प्रत्यक्ष प्रजातन्त्र । Unit 3 : Constitution of Switzerland : Salient Features, Executive, Legislature and Judiciary. Direct Democracy.
- इकाई 4 : चीन का संविधान : विशेषताएं, कार्यपालिका , व्यवस्थापिका, न्यायपालिका, साम्यवादी दल ।
- Unit 4 : Constitution of China : Salient Features, Executive, Legislature and Judiciary. Communist Party.
- इकाई 5 : तुलनात्मक राजनीति : अर्थ, परिभाषा, । ईस्टन का व्यवस्था सिद्धान्त, आमण्ड का संरचनात्मक-प्रकार्यात्मक उपागम । राजनीतिक विकास, राजनीतिक समाजीकरण, राजनीतिक संस्कृति की अवधारणा ।
- Unit 5 : Comparative Politics : meaning , Definition. System Theory of David Easton, Structural -functional Approach of Almond. Concept of Political Development, Political Socialisation, Political Culture

बी.ए. द्वितीय वर्ष
प्रश्न पत्र
तुलनात्मक शासन एवं राजनीति

सन्दर्भ

ग्रन्थ

सूची:-

क्र	पुस्तक का नाम	लेखक का नाम
1.	तुलनात्मक राजनीति एवं राजनीतिक संस्थाएं	सी बी गेना
2.	तुलनात्मक राजनीति	जे.सी. जौहरी
3.	तुलनात्मक राजनीति	पी.डी शर्मा
4.	तुलनात्मक राजनीति	एस.आर. महेष्वरी
5.	तुलनात्मक राजनीति संस्थाएं और प्रक्रियाएं	तपन बिस्वाल
6.	कम्परेटीव गर्वनेमेंट	एस.ई. फाईनर

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- Shashi Kant Jha & Bhaswati Sarkar (eds.) **Amidst Turbulence & Hope, Transition Russia and Eastern Europe**, New Delhi, 2002
- Thomas F. Remington, **The Russian Parliament: Institutional Evolution in a Transitional Regime**, 1989-1999, Yale University Press, 2002
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- Vidya Bhushan and Vishnu Bhagwan, **World Constitutions**, New Delhi

Paper I : International Politics and Foreign Policy of India

- इकाई 1 : अन्तर्राष्ट्रीय राजनीति : अर्थ, प्रकृति, क्षेत्र ।
अन्तर्राष्ट्रीय राजनीति : अध्ययन उपागम – यथार्थवाद, आदर्शवाद, नवयथार्थवाद, विश्व व्यवस्था सिद्धान्त । राष्ट्रीय हित एवं राष्ट्रीय शक्ति : अर्थ, परिभाषा एवं तत्व ।
- Unit 1 :** International Politics : meaning, Nature, Scope. International Politics : Approaches to the study : Realism, Idealism, New realism, World System theory. National interest and National power: Meaning Definition and Elements.
- इकाई 2 : अन्तर्राष्ट्रीय राजनीति के विभिन्न सिद्धान्त : व्यवस्था, खेल, निर्णय निर्माण,सौदेबाजी का सिद्धान्त । शक्ति संतुलन । सामूहिक सुरक्षा । निशस्त्रीकरण । शीतयुद्ध । राजनय ।
- Unit 2 :** Various theories of International Politics : System, Game, Decision making, Bargaining theory. Balance of Power, Collective Security, Disarmament, Cold war, Diplomacy.
- इकाई 3 : भारत की विदेश नीति : निर्धारक तत्व, विशेषताएं । गुटनिरपेक्षता : अर्थ, विशेषताएं, प्रासंगिकता ।
- Unit 3 :** Foreign Policy of India : Determinating elements, characteristics. Non-alignment : meaning, features , relevance.
- इकाई 4 : भारत का पड़ोसियों से सम्बंध –चीन,पाकिस्तान,नेपाल,श्रीलंका । भारत का महाशक्तियों से सम्बंध – संयुक्त राज्य अमेरिका, रुस, ब्रिटेन एवं फ्रांस
- Unit 4 :** Indias' relations with neighboring countries : China , Pakistan, Nepal, Sri lanka, Relations with Super Powers - USA, Russia, Britain and France.
- इकाई 5 : अन्तर्राष्ट्रीय राजनीति के कुछ प्रमुख मुद्दे : पर्यावरणवाद । अन्तर्राष्ट्रीय आतंकवाद । वैश्वीकरण । मानव अधिकार । परमाणविक निशस्त्रीकरण ।
- Unit 5 :** Some major issues of International Politics : Environmentalism, International Terrorism, Globalisation, Human Rights , Nuclear Disarmament.

बी.ए.अंतिम वर्ष
प्रथम प्रश्न पत्र
अंतर्राष्ट्रीय राजनीति एवं भारत की विदेश नीति

सन्दर्भ ग्रन्थ सूची:-

क्र	पुस्तक का नाम	लेखक का नाम
1.	अन्तर्राष्ट्रीय राजनीति के सैद्धान्तिक पक्ष	महेन्द्र कुमार
2.	अन्तर्राष्ट्रीय राजनीति के सिद्धान्त एवं व्यवहार	यू.आर.घई
3.	अन्तर्राष्ट्रीय राजनीति सिद्धान्त समकालिन एवं मुद्दे	बी.एल. फाडिया
4.	अन्तर्राष्ट्रीय संबंध	पुष्पे पन्थ
5.	अन्तर्राष्ट्रीय संबंध	दीनानाथ बर्मा
6.	थीयरी ऑफ इन्टरनेशनल पालिटिक्स	के.वाल्डज
7.	इन्टरनेशनल रिलेणन्स	जे.गोल्ड स्टीन
8.	द इन्टरनेशनल पालिटिक्स	पी.कलवरट
9.	इन्टरनेशनल रिलेणन्स	सी.ब्राउन
10.	समकालीन विष्व एवं भारत	अरुणोदय बाजपेयी

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- John Gray, **False Dawn: The Delusions of Global Capitalism**, Grant Book, U.K., 1998
- Hans J. Morgenthau, **Politics Among Nations: The Struggle for Power and Peace**, Calcutta, Scientific Book Agency, Calcutta, 1972
- Mahendra Kumar, **Theoretical Aspects of International Politics**
- K.J. Holsti, **International Politics: A Framework for Analysis**, Prentice Hall of India, New Delhi, 1995.
- Paul Kennedy, **Preparing for the Twenty-First Century**, New York, 1993
- Hutchings, Kimbley, **International Political Theory**, Sage, New Delhi, 2002
- Karen Mingst, **Essentials of International Relations**, New York: W.W. Norton & Company, 2007
- Kate Kelly S. Pease, **International Organizations**, New Jersey: Prentice Hall, 2000
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- John Baylis & Steve Smith, '**Globalization of World Politics**' OUP, U.S.A. & Delhi, 2008.

द्वितीय प्रश्नपत्र : लोक प्रशासन Paper : II : Public Administration

- इकाई 1 : लोक प्रशासन : अर्थ, परिभाषा, प्रकृति, क्षेत्र । लोक प्रशासन और निजी प्रशासन । अध्ययन पद्धतियां । नवीन लोक प्रशासन । तुलनात्मक लोक प्रशासन ।
- Unit 1 : Public Administration : meaning and definition, nature, scope. Public Administration and Private Administration. Method of Studies. New Public Administration. Comparative Public Administration.
- इकाई 2 : संगठन के सिद्धान्त : पदसोपान, नियंत्रण का क्षेत्र , आदेश की एकता, प्रत्यायोजन । मुख्य कार्यपालिका । सूत्र एवं स्टाफ अभिकरण । विभागीय संगठन , लोक निगम । कार्मिक प्रशासन : भर्ती, पदोन्नति , प्रशिक्षण ।
- Unit 2 : Principles of Organisation : Hierarchy, Span of Control, Unity of Command, Delegation. Chief Executive. Line and Staff Agencies. Departmental Organisation. Public Corporation. Personnel Administration : Recruitment, Promotion, Training.
- इकाई 3 : विकास प्रशासन : प्रकृति, मुद्दे और विशेषताएं । रिग्स मॉडल । प्रशासन में नागरिक सहभागिता । सुशासन और ई शासन । संघ लोक सेवा आयोग ।
- Unit 3 : Development Administration : Nature, Issues, Characteristics. Riggs Model. Public participation in Administration. Good Governance and e- Governance. Union Public Service Commission.
- इकाई 4 : वित्तीय प्रशासन : बजट के सिद्धान्त । भारत में बजट प्रक्रिया । भारत में प्रशासनिक सुधार । प्रशासन पर कार्यपालिका, विधायी, न्यायिक और जन नियन्त्रण ।
- Unit 4 : Financial Administration: Principles of Budget. Budget procedure in India. Administrative reforms in India. Executive, Legislative, Judicial and Public Control on Administration.
- इकाई 5 : प्रशासन में भ्रष्टाचार : आम्बुड्समैन, लोकपाल और लोक आयुक्त । वैश्वीकरण के युग में लोक प्रशासन । उदारीकरण । नौकरशाही । लोक सम्पर्क । Corruption in Administration: Ombudsman, Lokpal and Lok Ayukta. Public Administration in the age of Globalisation. Liberalisation. Bureaucracy. Public Relation.

बी.ए.अंतिम वर्ष
द्वितीय प्रश्न पत्र
लोक प्रशासन

सन्दर्भ ग्रन्थ सूची:-

क्र	पुस्तक का नाम	लेखक का नाम
1.	लोक प्रशासन	अवस्थी और माहेष्चरी
2.	लोक प्रशासन सिद्धान्त एवं व्यवहार	सुषमा यादव और बलराम गौतम-(सम्पा)
3.	तुलनात्मक लोक प्रशासन	रमेश अरोड़ा
4.	लोक प्रशासन सिद्धान्त एवं व्यवहार	पी.डी. शर्मा और हरीषचन्द्र शर्मा
5.	वित्त प्रशासन	गौतम पद्मनाम
6.	लोक प्रशासन के सिद्धान्त	सी.पी. भामरी
7.	लोक प्रशासन	बी.एल. फाडिया
8.	प्रशासनिक सिद्धान्त	अवस्थी और अवस्थी

Reference :-

- Avasthi & S.R. Maheshwari: **Public Administration**, (Agra: L. N. Agrawal, latest Hindi and English editions)
- R. R. Jha: **Lokayukta : The Indian Ombudsman**, Rishi Publications, Varanasi, 1991
- F.A. Nigro and G.I. Nigro, **Modern Public Administration**, New York, Harper Row, 1980
- M. P. Sharma, B. L. Sadana, '**Lok Prashasan : Siddhanth Evam Vyavahar**',(Allahabad: Kitab Mahal, Latest Hindi and English editions) .
- R. K. Arora & R. Goyal: **Indian Public Administration**, (New Delhi: Vishwa Prakashan, 2008).
- S. Kataria, '**Personnel Administration**', (RBSA Publishers, Jaipur, 2003).

केन्द्रीय अध्ययन मंडल
समाजशास्त्र

प्रपत्र -1

कक्षा : बी.ए. प्रथम वर्ष,

संकाय : सामाजिक विज्ञान

विषय : समाजशास्त्र

प्रश्न-पत्र : First (Paper code 0115 : Introduction to Sociology)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Introduction to Sociology	Introduction to Sociology	केन्द्रीय अध्ययन मण्डल के अध्यक्ष एवं सदस्यों द्वारा आंशिक संशोधन किया गया है, जो निम्नानुसार है:- 1. विषय में प्रथम प्रश्न-पत्र के शीर्षक को ध्यान में रखते हुए आंशिक संशोधन किया गया। 2. बी.ए. प्रथम वर्ष के विद्यार्थियों के बौद्धिक क्षमता को ध्यान रखते हुए आंशिक संशोधन का निर्णय लिया गया। 3. इस पाठ्यक्रम के माध्यम से विद्यार्थियों को विषय के आधारभूत जानकारी से जानकारी से अवगत कराने हेतु आंशिक संशोधन किया गया है।

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P. Saini
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Shabhash
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Head,
S.O.S. in Sociology & Social Work,
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प्रपत्र -2




कक्षा : बी.ए. प्रथम वर्ष,

संकाय : सामाजिक विज्ञान

विषय : समाजशास्त्र

प्रश्न-पत्र : Second (Paper code 0116)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Foundation of Sociological Thought (Paper Code 0116)	Society in India	1. बी.ए. प्रथम वर्ष के छात्रों के बौद्धिकता की दृष्टि से प्रश्न पत्र के कान्टेंट जटिल था जिसे संशोधन किया गया है। 2. चूंकि प्रश्न-पत्र का शीर्षक संसमयायिक किया गया है तथा इसी के आधार पर कौनटकेन्ट में आंशिक परिवर्तन किया गया है।



सुपना
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Shabhadh
11/06/2018
Anil
11.6.18
B. Anil
11/6/18

11/6/2018
Head,
S.O.S. in Sociology & Social Work,
Pt. Ravishankar Shukla University,
Raipur. (C.G.)

Class : B.A. Part-II

Faculty : Social Science

Subjects : Sociology

Paper : First (Paper code-0185)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Society in India (Paper code-0185)	Sociology of Tribal Society	1. यह प्रश्न पत्र पहले बी.ए. भाग तीन का प्रथम पेपर Sociology of Tribal Society था जिसे अब बी.ए. भाग दो का प्रथम पेपर रखा गया जिससे पाठ्यक्रम में क्रमानुसार निरंतरता बनी रहे। 2. छत्तीसगढ़ जनजातीय बाहुल्य राज्य है लगभग 32% जनसंख्या जनजातियों की है अतः इनके बारे में अध्ययन अध्यापन अति आवश्यक है।

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सपना
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Head,
Department of Social Science,
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प्रपत्र -4



Class : B.A. Part-II


Faculty : Social Science

Subjects : Sociology

Paper : Second (Paper code-0186)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Crime and Society (Paper code-0186)	Crime and Society	1. प्रश्नपत्र के विषयवस्तु को व्यवस्थित कर समयानुसार आंशिक संशोधन आवश्यक था।



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Head,
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Raipur. (C.G.)

प्रपत्र -5

Class : B.A. Part-III

Faculty : Social Science

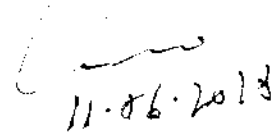
Subjects : Sociology

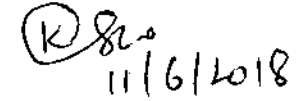
Paper : First, (Paper code-0246)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Sociology of Tribal Society. (Paper code-0246)	Foundations of Sociological Thought.	1. यह प्रश्नपत्र बी.ए. भाग एक का द्वितीय प्रश्नपत्र है यह बदलाव विद्यार्थियों की बौद्धिक क्षमता को ध्यान में रखते हुए किया गया है। 2. समयानुसार Thorstein Veblen, R.K. Morten की Theory को शामिल कर प्रश्नपत्र को संशोधित किया गया है।



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प्रपत्र -6

Class : B.A. Part-III

Faculty : Social Science

Subjects : Sociology

Paper : Second, (Paper code-0247)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Social Research Methods (Paper code-0247)	Methods of Social Research	1. समय की मांग को देखते हुए पाठ्यक्रम को व्यवस्थित किया गया एवं प्रश्नपत्र में कम्प्युटर के उपयोग को शामिल कर आंशिक संशोधन किया गया। 2- प्रश्नपत्र का नाम Methods of Social Research किया गया।

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PRESENT SYLLABUS

SOCIOLOGY

B.A. PART-I


Paper – I

INTRODUCTION TO SOCIOLOGY(Paper Code - 0115)

- UNIT-I The Meaning of Sociology – The Sociological perspective – Sociology and social sciences - The Scientific and humanistic Orientations to Sociological Study. Basic concept – Society, Community, institution, Association, group social structure, Status and role.
- UNIT-II Institution, Family and kinship, religion, education, politics. The individual and society. Society- Culture and socialisation-Relation between individual and society- social control, norms, values.
- UNIT-III Social Stratification and mobility meaning forms and theories.
- UNIT-IV Social change meaning and type evolution and progress factors of social change.
- UNIT-V Introduction to applied sociology and Social policy and action- Sociology and Development, Sociology and Professions.

ESSENTIAL READINGS :-

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, n., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, m., Sociology of systematic Introduction New Delhi Allied Publishers 1995.


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Revised syllabus
SOCIOLOGY 2018-2019

B.A. PART-I

Paper – I

INTRODUCTION TO SOCIOLOGY (Paper Code - 0115)

- UNIT-I **Sociology** : Meaning, Nature, scope, Subject matter and significance.
Basic concepts : Society, Community, institution, Association, group, Status and role.
- UNIT-II **Social Institutions**: Marriage, Family and kinship.
Culture and society: Culture, socialization, The individual and society, social control, norms and values.
- UNIT-III **Social Stratification**: Meaning, forms and theories.
Social Mobility: Meaning, forms and theories.
- UNIT-IV **Social change**: Meaning and patterns, types, factors, evolution and progress.
- UNIT-V **Social System and process**: Social System- meaning, characteristics and elements.
Social process- Meaning, elements, characteristics and types.

ESSENTIAL READINGS :-

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, N., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, M., Sociology of systematic Introduction New Delhi Allied Publishers 1995.

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Head,
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प्रपत्र -1

कक्षा : बी.ए. प्रथम वर्ष,

संकाय : सामाजिक विज्ञान

विषय : समाजशास्त्र

प्रश्न-पत्र : First (Paper code 0115 : Introduction to Sociology)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Introduction to Sociology	Introduction to Sociology	केन्द्रीय अध्ययन मण्डल के अध्यक्ष एवं सदस्यों द्वारा आंशिक संशोधन किया गया है, जो निम्नानुसार है:- 1. विषय में प्रथम प्रश्न-पत्र के शीर्षक को ध्यान में रखते हुए आंशिक संशोधन किया गया। 2. बी.ए. प्रथम वर्ष के विद्यार्थियों के बौद्धिक क्षमता को ध्यान रखते हुए आंशिक संशोधन का निर्णय लिया गया। 3. इस पाठ्यक्रम के माध्यम से विद्यार्थियों को विषय के आधारभूत जानकारी से जानकारी से अवगत कराने हेतु आंशिक संशोधन किया गया है।

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SOCIOLOGY

B.A. PART-I

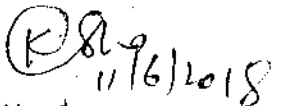
PAPER – II

FOUNDATIONS OF SOCIOLOGICAL THOUGHT(Paper Code-0116)

- UNIT-I The Pioneers : emergence of Sociology. Comte : Positivism, Spencer : Social Darwinism, super organic evolutions.
- UNIT-II The Classical tradition : Durkheim- Social Solidarity and Suicide. Max Weber – Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III Marx : Materialist Conception of history and class Struggle.
- UNIT-IV Pareto : Circulation of Elites and Logical and Nonlogical action.
- UNIT-V Development of Sociological thought in India : -
Mahatma Ghandhi: Ahimsa, Satya Graha,
Radha kamal Mukarjee : The Concept of Value.

ESSENTIAL READINGS –

- 1 Barres,H.E. : Introduction to the sociology, Chicago the university of Chicago press 1959.
- 2 Coser,Levis a.,: Master of sociological thought, New York Harcourt Brace Jovanovich 1979.
- 3 Singh, Yogendra- Indian sociology:social conditioning and emerging frends. New Delhi vistaar 1986.
- 4 Zeitlin.Irving-(Indian edition) Rethinking sociology: A critigue of contemporary theory , Jorpur Rawl 1999.


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Revised syllabus
SOCIOLOGY 2018-2019

B.A. PART-I

Paper –II

CONTEMPORARY INDIAN SOCIETY (Paper Code-0116)

- UNIT-I **Classical View about Indian Society:** Verna, Asharam, Karma, Dharma and Purusharth.
- UNIT-II **The Structure and composition of Indian society.**
Structure ; Village ,Towns, Cities and Rural – Urban Linkage,
Compositions: Tribes, Dalits, Women and Minorities.
- UNIT-III **Basic Institutions of Indian Society:**
Caste system, Joint Family, Marriage and Changing dimensions.
- UNIT-IV **Familial Problems:**
Dowry, Domestic violence, Divorce, Intra-intergenerational conflict, problem of elderly.
- UNIT-V **Social Problems:**
Surrogate Motherhood, Live in Relationship, Regionalism, Communalism, Corruption, Youth unrest.

ESSENTIAL READINGS :-

- 1 Dube, S. C. 1995. Society in India, New Delhi: National Book Trust.
- 2 Mandelbaum, D.G. 1970. Society in India, Bombay: Poular Prakashan.
- 3 Shrinivas, M.N. 1973. Social Change in Modern India, California: University of California Press.
- 4 Shrinivas, M.N. 1990. Social Change Structure, New Delhi: Hindustan Publishing Corporation.
- 5 Uberoi Patricia, 1993. Family and Marriage In India, New Delhi: Oxford University Press.

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प्रपत्र -2



कक्षा : बी.ए. प्रथम वर्ष,

संकाय : सामाजिक विज्ञान

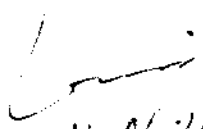
विषय : समाजशास्त्र


प्रश्न-पत्र : Second (Paper code 0116)



वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Foundation of Sociological Thought (Paper Code 0116)	Society in India	1. बी.ए. प्रथम वर्ष के छात्रों के बौद्धिकता की दृष्टि से प्रश्न पत्र के कान्टेंट जटिल था जिसे संशोधन किया गया है। 2. चूंकि प्रश्न-पत्र का शीर्षक संसमयायिक किया गया है तथा इसी के आधार पर कान्टकेन्ट में आंशिक परिवर्तन किया गया है।




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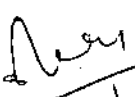
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Head,
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PRESENT SYLLABUS

SOCIOLOGY

B.A. PART-II

PAPER-I

SOCIETY IN INDIA (Paper Code-0185)

UNIT-I View about Indian Society;

The Classical view: Varna, asharam, karma and Dharma

Field View: M.N.Shrinivas and S.C.Dubey

Significance and interface of classical and field views.

UNIT-II The Structure and composition of Indian society.

Structure: Village, Towns, Cities and Rural – Urban Linkage Compositions: Tribes,

Dalits, Women and Minorities

UNIT-III Basic Institutions of Indian Society

Caste system, Kinship, Family, Family marriage, class Changing dimensions.

UNIT-IV Familial Problems

Dowry, Domestic violence, Divorce, Intra-intergenerational conflict problem of elderly.

UNIT-V Social Problems

Casteism, Regionism, Communalism, Corruption, Youth unrest.


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Revised syllabus
SOCIOLOGY 2018-2019

B.A. PART-II
PAPER – I
SOCIOLOGY OF TRIBAL SOCIETY
(Paper Code-0185)

- UNIT-I **Tribes:** Concepts, Characteristics, Tribes and Schedule Tribes, Distinction between Tribe and Caste.
- UNIT-II **Classification of Tribal people:** Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled Agriculturists and Artisans.
- UNIT-III **Socio-cultural Profile:** Kinship, Marriage, Family, Religion and belief cultural traditions.
- UNIT-IV **Tribal sensitization:** Tribal Mobility, Schemes of Tribal Development , Various Tribal Movements.
- UNIT-V **Problems of Tribal People:** Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal communities in Chhattisgarh with special reform to Particularly Venerable Tribal Groups (PVTG).

ESSENTIAL READINGS :-

- 1 Vidyarthi, L.P. 1965. Cultural Counters of Tribal Bihar, Punthi Pustak, Culcutta.
- 2 Bose, N.K. 1971. Tribal Life in India, National Book Trust, New Delhi.
- 3 Das, R.K. 1988. The Tribal Social Structure, Inter India Publications, New Delhi.
- 4 Dubey, S.C.. 1977. Tribal Heritage of India, Ethnicity, Identity and Interaction, Vol.1, Vikash Publishing House, Delhi.
- 5 Elwin, Marrier. 1989. The Tribal World of Verrier Elwin: An Autobiography, Oxford, New Delhi.
- 6 Russell, R.V. and Hira Lal. 1916. The Tribes and Castes of Central Province of India, 4 Vols. Cosmo Publications, New Delhi.

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प्रपत्र -3

Class : B.A. Part-II

Faculty : Social Science

Subjects : Sociology

Paper : First (Paper code-0185)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Society in India (Paper code-0185)	Sociology of Tribal Society	1. यह प्रश्न पत्र पहले बी.ए. भाग तीन का प्रथम पेपर Sociology of Tribal Society था जिसे अब बी.ए. भाग दो का प्रथम पेपर रखा गया जिससे पाठ्यक्रम में क्रमानुसार निरंतरता बनी रहे। 2. छत्तीसगढ़ जनजातीय बाहुल्य राज्य है लगभग 32% जनसंख्या जनजातियों की है अतः इनके बारे में अध्ययन अध्यापन अति आवश्यक है।

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Head, Department of Sociology & Social Work,
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SOCIOLOGY
B.A. PART-II
PAPER-II
CRIME AND SOCIETY
(Paper Code-0186)

- UNIT-I Concept and types of Crime
Early Explanation- Classical, Positives, Psychological.
- UNIT-II Social Structure and Anomie
Criminality-Suicide
Organized crime , White collar crime
Causes, Consequences and remedies of Terrorism
- UNIT-III Indian Social Problems
Nature of Social change and crime in India, Social Diso-Denization. Alcoholize.
Drug Addiction, Beggary.
- UNIT-IV Punishment- Objectives and Forms
Major theories pf Punishment
Modern correctional concepts Probation, Parole and Open prison
- UNIT-V Correctional Process-
Role of Police and Judiciary in India, Development of Jail reforms in India sociology
of Prison


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Revised syllabus
SOCIOLOGY 2018-2019

B.A. PART-II

PAPER-II

CRIME AND SOCIETY

(Paper Code-0186)

- UNIT-I **Concept of Crime:** Meaning, Characteristics and Types.
School of Crime: Classical, Sociological and Psychological.
- UNIT-II **Structure of Crime:** Anomie, Criminality and Suicide , Organized Crime ,
White Collar Crime and Cyber Crime
- UNIT-III **Social Evils and Crime:** Alcoholism, Drug Addiction, Dowry and Beggary.
- UNIT-IV **Punishment:** Meaning, Characteristics, Objectives and Types,
Major Theories of Punishment.
- UNIT-V **Correctional Process:** Role of Police and Judiciary in India, Development of Jail
reforms in India and Modern correctional concepts- Probation , Parole and after
care Programme.

ESSENTIAL READINGS :-

1. Mike, & Maguire. (2007). *The Oxford Hand Book of Criminology*. London: Oxford University Press.
2. Haster, S., & Eglin, P. (1992). *A Sociology of Crime*. London: Routledge Publishers.
3. Mead, G. H. (1934). *Mind Self and Society*. Chicago: Chicago University Press
4. Gottfredson, Michael, R., Hirschi, & Travis. (1990). *A General Theory of Crime*. London: Stanford University Press.
5. Sutherland, & Edwin, H. (1924). *Principles of Criminology*. Chicago: Chicago University Press.
6. Sutherland, Edward, H., & White, C. (1949). *Crime*. New York, Holt, Rinehart: Winston Press, New York.

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Head,
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प्रपत्र -4



Class : B.A. Part-II

Faculty : Social Science

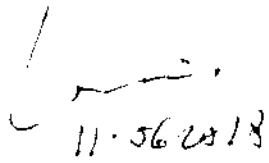
Subjects : Sociology

Paper : Second (Paper code-0186)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Crime and Society (Paper code-0186)	Crime and Society	1. प्रश्नपत्र के विषयवस्तु को व्यवस्थित कर समयानुसार आंशिक संशोधन आवश्यक था।

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PRESENT SYLLABUS
SOCIOLOGY
B.A. PART-III
PAPER – I
SOCIOLOGY OF TRIBAL SOCIETY
(Paper Code-0246)

- UNIT-I The Concept of Tribe.
Characteristics of Tribal Society, Distinction between Tribe and Caste.
- UNIT-II Classification of Tribal people:-
Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled
Agriculturists, artisans.
- UNIT-III Socio-cultural Profile- Kinship, Marriage and Family, religion belief cultural traditions.
- UNIT-IV Social Mobility and change sensitization.
Schemes of Tribal Development , Various Tribal Movements.
- UNIT-V Problems of tribel People-
Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal
communities in Chhattisgarh with special reform to Oraon, Kanwar and Gond.


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SOCIOLOGY 2018-2019

B.A. PART-III

PAPER – I

FOUNDATIONS OF SOCIOLOGICAL THOUGHT

(Paper Code-0246)

- UNIT-I **August Comte** : The Law of Three Stages , Positivism, Hierarchy of Science.
Durkheim: Social Solidarity and Suicide.
- UNIT-II **Karl Marx** : Dialectic Materialism , Class Struggle and Surplus value.
Max Weber : Bureaucracy, Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III **Pareto** : Circulation of Elites and Logical and Nonlogical action.
Spencer : Social Darwinism, super organic evolutions.
- UNIT-IV **Thorstein Veblen**: The Theory of Leisure Class, Theory of Social Change.
R. K. Morton: Functionalism and Reference Group.
- UNIT-V **Development of Sociological thought in India** : -
Mahatma Gandhi: Ahimsa, Satya Graha and Trusteeship.
Radha kamal Mukherjee : The Concept of Value.

ESSENTIAL READINGS –

- 1 Barres,H.E. : Introduction to the sociology, Chicago the university of Chicago press 1959.
- 2 Coser,Levis a.,: Master of sociological thought, New York Harcourt Brace Jovanovich 1979.
- 3 Singh, Yogendra- Indian sociology:social conditioning and emerging trends. New Delhi vistaar 1986.
- 4 Zeitlin,Irving-(Indian edition) Rethinking sociology: A critique of contemporary theory , Jorpur Rawl 1999.

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Class : B.A. Part-III

Faculty : Social Science

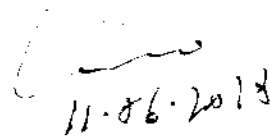
Subjects : Sociology

Paper : First, (Paper code-0246)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Sociology of Tribal Society. (Paper code-0246)	Foundations of Sociological Thought.	1. यह प्रश्नपत्र बी.ए. भाग एक का द्वितीय प्रश्नपत्र है यह बदलाव विद्यार्थियों की बौद्धिक क्षमता को ध्यान में रखते हुए किया गया है। 2. समयानुसार Thorstein Veblen, R.K. Morten की Theory को शामिल कर प्रश्नपत्र को संशोधित किया गया है।



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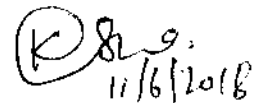
B.A. PART-III

PAPER-II

SOCIAL RESEARCH METHODS

(Paper Code-0247)

- UNIT-I Meaning and Significance of Social Research
Hypothesis and its Formulation ,Scientific method and its Applicabilty.
- UNIT-II Positivism
Ethnography, Observation, Case Study, Content analysis.
- UNIT-III Types of Research
Historical, Descriptive, Comparative Exploratory, Experimental
- UNIT-IV Techniques of Date collections- Survey , Sampling, Questionnaire, Interview Schedule and Interview Guide.
- UNIT-V Meaning, Importance and Limitations of Social Statistics.
Graphs, Diagrams and Measures of Central Tendency- Mean, Mode, Median, Co-
relation.


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SOCIOLOGY 2018-2019

B.A. PART-III
PAPER-II
METHODS OF SOCIAL RESEARCH
(Paper Code-0247)

- UNIT-I **Social Research** : Meaning, Characteristics and Significance.
Scientific methods , Hypothesis.
- UNIT-II **Qualitative Research** : Ethnography, Observation, Case Study, Content analysis.
- UNIT-III **Research design** : Exploatory , Descriptive, Explanatory, Experimental, and Diagnostic.
- UNIT-IV **Tools and Techniques of Social Research**: Social Survey, Sampling, Questionnaire, Interview - Schedule and Interview - Guide.
- UNIT-V **Social Statistics**: Meaning, Importance and Limitations.
Graphs, Diagrams and Measures of Central Tendency- Mean, Mode, Median, Co-
relation, Use of Computer in Social Research.

ESSENTIAL READINGS –

1. Young, P.V. (1977). *Scientific Social Surveys and Research*. Prentice Hall of India. New Delhi.
2. Bruce, C., & Margaret, M. (1993). *Approaches to Social Research*. New York: Oxford University Press.
3. Cohen, M., & Nagel, E. (1944). *An Introduction to Logic and Scientific Method*. New York: Harcourt, Brace & Company.
4. Forcese, D., & Richer, S. (1973). *Social Research Methods*. Cliffs: Englewood, Cliffs, NJ. Printinh Hall.
5. Moser, C.A. (1962). *Survey Methods in Social Research Investigation*. London: Heinemann, Printce Hall.
6. Goode, & Hatt. (1952). *Methods in Social Research*. New York: MC'grawHill Publishers.

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प्रपत्र -6

Class : B.A. Part-III

Faculty : Social Science

Subjects : Sociology

Paper : Second, (Paper code-0247)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Social Research Methods (Paper code-0247)	Methods of Social Research	1. समय की मांग को देखते हुए पाठ्यक्रम को व्यवस्थित किया गया एवं प्रश्नपत्र में कम्प्युटर के उपयोग को शामिल कर आंशिक संशोधन किया गया। 2- प्रश्नपत्र का नाम Methods of Social Research किया गया।

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SOCIOLOGY 2018-2019

B.A. PART-I

Paper – I

INTRODUCTION TO SOCIOLOGY (Paper Code - 0115)

- UNIT-I **Sociology** : Meaning, Nature, scope, Subject matter and significance.
Basic concepts : Society, Community, institution, Association, group, Status and role.
- UNIT-II **Social Institutions**: Marriage, Family and kinship.
Culture and society: Culture, socialization, The individual and society, social control, norms and values.
- UNIT-III **Social Stratification**: Meaning, forms and theories.
Social Mobility: Meaning, forms and theories.
- UNIT-IV **Social change**: Meaning and patterns, types, factors, evolution and progress.
- UNIT-V **Social System and process**: Social System- meaning, characteristics and elements.
Social process- Meaning, elements, characteristics and types.

ESSENTIAL READINGS :-

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, N., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, M., Sociology of systematic Introduction New Delhi Allied Publishers 1995.

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SOCIOLOGY 2018-2019

B.A. PART-I

Paper –II

CONTEMPORARY INDIAN SOCIETY (Paper Code-0116)

- UNIT-I **Classical View about Indian Society:** Verna, Asharam, Karma, Dharma and Purusharth.
- UNIT-II **The Structure and composition of Indian society.**
Structure ; Village ,Towns, Cities and Rural – Urban Linkage,
Compositions: Tribes, Dalits, Women and Minorities.
- UNIT-III **Basic Institutions of Indian Society:**
Caste system, Joint Family, Marriage and Changing dimensions.
- UNIT-IV **Familial Problems:**
Dowry, Domestic violence, Divorce, Intra-intergenerational conflict, problem of elderly.
- UNIT-V **Social Problems:**
Surrogate Motherhood, Live in Relationship, Regionalism, Communalism, Corruption, Youth unrest.

ESSENTIAL READINGS :-

- 1 Dube, S. C. 1995. Society in India, New Delhi: National Book Trust.
- 2 Mandelbaum, D.G. 1970. Society in India, Bombay: Poular Prakashan.
- 3 Shriniwas, M.N. 1973. Social Change in Modern India, California: University of California Press.
- 4 Shriniwas, M.N. 1990. Social Change Structure, New Delhi: Hindustan Publishing Corporation.
- 5 Uberoi Patricia, 1993. Family and Marriage In India, New Delhi: Oxford University Press.

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SOCIOLOGY 2018-2019

B.A. PART-II
PAPER – I
SOCIOLOGY OF TRIBAL SOCIETY
(Paper Code-0185)

- UNIT-I **Tribes:** Concepts, Characteristics, Tribes and Schedule Tribes, Distinction between Tribe and Caste.
- UNIT-II **Classification of Tribal people:** Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled Agriculturists and Artisans.
- UNIT-III **Socio-cultural Profile:** Kinship, Marriage, Family, Religion and belief cultural traditions.
- UNIT-IV **Tribal sensitization:** Tribal Mobility, Schemes of Tribal Development ,Various Tribal Movements.
- UNIT-V **Problems of Tribal People:** Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal communities in Chhattisgarh with special reform to Particularly Venerable Tribal Groups (PVTG).

ESSENTIAL READINGS :-

- 1 Vidyarthi, L.P. 1965. Cultural Counters of Tribal Bihar, Punthi Pustak, Culcutta.
- 2 Bose, N.K. 1971. Tribal Life in India, National Book Trust, New Delhi.
- 3 Das, R.K. 1988. The Tribal Social Structure, Inter India Publications, New Delhi.
- 4 Dubey, S.C.. 1977. Tribal Heritage of India, Ethnicity, Identity and Interaction, Vol.1, Vikash Publishing House, Delhi.
- 5 Elwin, Varrier. 1989. The Tribal World of Verrier Elwin: An Autobiography, Oxford, New Delhi.
- 6 Russell, R.V. and Hira Lal. 1916. The Tribes and Castes of Central Province of India, 4 Vols. Cosmo Publications, New Delhi.

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SOCIOLOGY 2018-2019

B.A. PART-II

PAPER-II


CRIME AND SOCIETY

(Paper Code-0186)

- UNIT-I **Concept of Crime:** Meaning, Characteristics and Types.
School of Crime: Classical, Sociological and Psychological.
- UNIT-II **Structure of Crime:** Anomie, Criminality and Suicide , Organized Crime ,
White Collar Crime and Cyber Crime
- UNIT-III **Social Evils and Crime:** Alcoholism, Drug Addiction, Dowry and Beggary.
- UNIT-IV **Punishment:** Meaning, Characteristics, Objectives and Types,
Major Theories of Punishment.
- UNIT-V **Correctional Process:** Role of Police and Judiciary in India, Development of Jail
reforms in India and Modern correctional concepts- Probation , Parole and after
care Programme.

ESSENTIAL READINGS :-

1. Mike, & Maguire. (2007). *The Oxford Hand Book of Criminology*. London: Oxford University Press.
2. Haster, S., & Eglin, P. (1992). *A Sociology of Crime*. London: Routledge Publishers.
3. Mead, G. H. (1934). *Mind Self and Society*. Chicago: Chicago University Press
4. Gottfredson, Michael, R., Hirschi, & Travis. (1990). *A General Theory of Crime*. London: Stanford University Press.
5. Sutherland, & Edwin, H. (1924). *Principles of Criminology*. Chicago: Chicago University Press.
6. Sutherland, Edward, H., & White, C. (1949). *Crime*. New York, Holt, Rinehart: Winston Press, New York.

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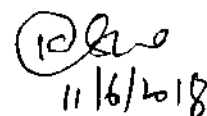
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Revised syllabus
SOCIOLOGY 2018-2019
B.A. PART-III
PAPER – I
FOUNDATIONS OF SOCIOLOGICAL THOUGHT
(Paper Code-0246)

- UNIT-I **August Comte** : The Law of Three Stages , Positivism, Hierarchy of Science.
Durkheim: Social Solidarity and Suicide.
- UNIT-II **Karl Marx** : Dialectic Materialism , Class Struggle and Surplus value.
Max Weber : Bureaucracy, Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III **Pareto** : Circulation of Elites and Logical and Nonlogical action.
Spencer : Social Darwinism, super organic evolutions.
- UNIT-IV **Thorstein Veblen**: The Theory of Leisure Class, Theory of Social Change.
R. K. Morton: Functionalism and Reference Group.
- UNIT-V **Development of Sociological thought in India** : -
Mahatma Gandhi: Ahimsa, Satya Graha and Trusteeship.
Radha kamal Mukherjee : The Concept of Value.

ESSENTIAL READINGS –

- 1 Barres,H.E. : Introduction to the sociology, Chicago the university of Chicago press 1959.
- 2 Coser,Levis a.,: Master of sociological thought, New York Harcourt Brace Jovanovich 1979.
- 3 Singh, Yogendra- Indian sociology:social conditioning and emerging trends. New Delhi vistaar 1986.
- 4 Zeitlin,Irving-(Indian edition) Rethinking sociology: A critique of contemporary theory , Jorpur Rawl 1999.

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SOCIOLOGY 2018-2019

B.A. PART-III
PAPER-II
METHODS OF SOCIAL RESEARCH
(Paper Code-0247)

- UNIT-I **Social Research** : Meaning, Characteristics and Significance.
Scientific methods , Hypothesis.
- UNIT-II **Qualitative Research** : Ethnography, Observation, Case Study, Content analysis.
- UNIT-III **Research design** : Exploatory , Descriptive, Explanatory, Experimental, and Diagnostic.
- UNIT-IV **Tools and Techniques of Social Research**: Social Survey, Sampling, Questionnaire, Interview - Schedule and Interview - Guide.
- UNIT-V **Social Statistics**: Meaning, Importance and Limitations.
Graphs, Diagrams and Measures of Central Tendency- Mean, Mode, Median, Correlation, Use of Computer in Social Research.

ESSENTIAL READINGS –

1. Young, P.V. (1977). *Scientific Social Surveys and Research*. Prentice Hall of India. New Delhi.
2. Bruce, C., & Margaret, M. (1993). *Approaches to Social Research*. New York: Oxford University Press.
3. Cohen, M., & Nagel, E. (1944). *An Introduction to Logic and Scientific Method*. New York: Harcourt, Brace & Company.
4. Forcese, D., & Richer, S. (1973). *Social Research Methods*. Cliffs: Englewood, Cliffs, NJ. Printinh Hall.
5. Moser, C.A. (1962). *Survey Methods in Social Research Investigation*. London: Heinemann, Printce Hall.
6. Goode, & Hatt. (1952). *Methods in Social Research*. New York: MC'grawHill Publishers.

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SOCIOLOGY

B.A. PART-I

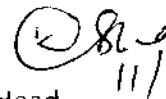
Paper – I

INTRODUCTION TO SOCIOLOGY(Paper Code - 0115)

- UNIT-I The Meaning of Sociology – The Sociological perspective – Sociology and social sciences - The Scientific and humanistic Orientations to Sociological Study. Basic concept – Society, Community, institution, Association, group social structure, Status and role.
- UNIT-II Institution, Family and kinship, religion, education, politics. The individual and society. Society- Culture and socialisation-Relation between individual and society- social control, norms, values.
- UNIT-III Social Stratification and mobility meaning forms and theories.
- UNIT-IV Social change meaning and type evolution and progress factors of social change.
- UNIT-V Introduction to applied sociology and Social policy and action- Sociology and Development, Sociology and Professions.

ESSENTIAL READINGS :-

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, n., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, m., Sociology of systematic Introduction New Delhi Allied Publishers 1995.


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B.A. PART-I

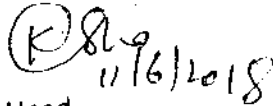
PAPER – II

FOUNDATIONS OF SOCIOLOGICAL THOUGHT(Paper Code-0116)

- UNIT-I The Pioneers : emergence of Sociology. Comte : Positivism, Spencer : Social Darwinism, super organic evolutions.
- UNIT-II The Classical tradition : Durkheim- Social Solidarity and Suicide. Max Weber – Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III Marx : Materialist Conception of history and class Struggle.
- UNIT-IV Pareto : Circulation of Elites and Logical and Nonlogical action.
- UNIT-V Development of Sociological thought in India : -
Mahatma Ghandhi: Ahimsa, Satya Graha,
Radha kamal Mukarjee : The Concept of Value.

ESSENTIAL READINGS –

- 1 Barres,H.E. : Introduction to the sociology, Chicago the university of Chicago press 1959.
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- 3 Singh, Yogendra- Indian sociology:social conditioning and emerging frends. New Delhi vistaar 1986.
- 4 Zeitlin,Irving-(Indian edition) Rethinking sociology: A critigue of contemporary theory , Jorpur Rawl 1999.


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SOCIOLOGY

B.A. PART-II

PAPER-I

SOCIETY IN INDIA (Paper Code-0185)

UNIT-I View about Indian Society;

The Classical view: Varna, ashram, karma and Dharma

Field View: M.N.Shrinivas and S.C.Dubey

Significance and interface of classical and field views.

UNIT-II The Structure and composition of Indian society.

Structure: Village, Towns, Cities and Rural – Urban Linkage Compositions: Tribes, Dalits, Women and Minorities

UNIT-III Basic Institutions of Indian Society

Caste system, Kinship, Family, Family marriage, class Changing dimensions.

UNIT-IV Familial Problems

Dowry, Domestic violence, Divorce, Intra-intergenerational conflict problem of elderly.

UNIT-V Social Problems

Casteism, Regionism, Communalism, Corruption, Youth unrest.



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B.A. PART-II
PAPER-II
CRIME AND SOCIETY
(Paper Code-0186)

- UNIT-I Concept and types of Crime
Early Explanation- Classical, Positives, Psychological.
- UNIT-II Social Structure and Anomie
Criminality-Suicide
Organized crime , White collar crime
Causes, Consequences and remedies of Terrorism
- UNIT-III Indian Social Problems
Nature of Social change and crime in India, Social Diso-Denization. Alcoholize.
Drug Addiction, Beggary.
- UNIT-IV Punishment- Objectives and Forms
Major theories pf Punishment
Modern correctional concepts Probation, Parole and Open prison
- UNIT-V Correctional Process-
Role of Police and Judiciary in India, Development of Jail reforms in India sociology
of Prison


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PRESENT SYLLABUS

SOCIOLOGY


B.A. PART-III

PAPER – I

SOCIOLOGY OF TRIBAL SOCIETY

(Paper Code-0246)

- UNIT-I The Concept of Tribe.
Characteristics of Tribal Society, Distinction between Tribe and Caste.
- UNIT-II Classification of Tribal people:-
Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled
Agriculturists, artisans.
- UNIT-III Socio-cultural Profile- Kinship, Marriage and Family, religion belief cultural traditions.
- UNIT-IV Social Mobility and change sensitization.
Schemes of Tribal Development, Various Tribal Movements.
- UNIT-V Problems of tribal People-
Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal
communities in Chhattisgarh with special reform to Oraon, Kanwar and Gond.

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B.A. PART-III

PAPER-II

SOCIAL RESEARCH METHODS

(Paper Code-0247)

- UNIT-I Meaning and Significance of Social Research
Hypothesis and its Formulation ,Scientific method and its Applicabilty.
- UNIT-II Positivism
Ethnography, Observation, Case Study, Content analysis.
- UNIT-III Types of Research
Historical, Descriptive, Comparative Exploratory, Experimental
- UNIT-IV Techniques of Date collections- Survey , Sampling, Questionnaire, Interview Schedule and Interview Guide.
- UNIT-V Meaning, Importance and Limitations of Social Statistics.
Graphs, Diagrams and Measures of Central Tendency- Mean, Mode, Median, Co-
relation.


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संशोधित पाठ्यक्रम
बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.-सी.
भाग - एक (आधार पाठ्यक्रम)
प्रश्न पत्र- प्रथम (हिन्दी भाषा)
(पेपर कोड -0101)

पूर्णांक- 75

नोट :-

1. प्रश्न पत्र 75 अंक का होगा।
2. प्रश्न पत्र अनिवार्य होगा।
3. इसके अंक श्रेणी निर्धारण के लिए जोड़े जायेंगे।
4. प्रत्येक इकाई के अंक समान होंगे।

पाठ्य विषय :-

इकाई-1

- क. पल्लवन, पत्राचार, अनुवाद, पारिभाषिक शब्दावली एवं हिंदी में पदनाम
ख. ईदगाह (कहानी) - मुंशी प्रेमचंद

इकाई-2

- क. शब्द शुद्धि, वाक्य शुद्धि, शब्द ज्ञान-पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द एवं मुहावरे-लोकोक्तियाँ
ख. भारत वंदना (कविता)- सूर्यकान्त त्रिपाठी निराला

इकाई-3

- क. देवनागरी लिपि - नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषताएँ, हिंदी अपठित गद्यांश, संक्षेपण, हिंदी में संक्षिप्तीकरण
ख. भोलाराम का जीव (व्यंग्य) - हरिशंकर परसाई

इकाई-4

- क. कम्प्यूटर का परिचय एवं कम्प्यूटर में हिंदी का अनुप्रयोग
ख. शिकागो से स्वामी विवेकानंद का पत्र

इकाई-5

- क. मानक हिन्दी भाषा का अर्थ, स्वरूप, विशेषताएँ, मानक, उपमानक, अमानक भाषा
ख. सामाजिक गतिशीलता - प्राचीन काल, मध्यकाल, आधुनिक काल

मूल्यांकन योजना :-

प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7 होंगे। प्रश्न-पत्र का पूर्णांक 75 निर्धारित है।

पाठ्यक्रम संशोधन का औचित्य :-

व्याकरण के बुनियादी ज्ञान, संप्रेषण, कौशल, सामाजिक संदेश एवं भाषायी दक्षता को ध्यान में रखते हुए यह पाठ्यक्रम प्रस्तावित है।

अध्यक्ष- हिंदी अध्ययन मंडल

संशोधित पाठ्यक्रम
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.
भाग - दो, आधार पाठ्यक्रम
प्रश्न पत्र - प्रथम (हिन्दी भाषा) (पेपर कोड - 0171)

पूर्णांक- 75

खण्ड - क	निम्नलिखित 5 लेखकों के पाठ शामिल होंगे -	अंक-35
	1. महात्मा गांधी - चोरी और प्रायश्चित	
	2. आचार्य नरेंद्र देव - युवकों का समाज में स्थान	
	3. वासुदेव शरण अग्रवाल - मातृभूमि	
	4. हरि ठाकुर - डॉ. खूबचंद बघेल	
	5. पं. माधवराव सप्रे - सम्भाषण-कुशलता	
खण्ड-ख	हिन्दी भाषा और उसके विविध रूप	अंक-16
	1. कार्यालयीन भाषा	
	2. मीडिया की भाषा	
	3. वित्त एवं वाणिज्य की भाषा	
	4. मशीनी भाषा	
खण्ड-ग	हिन्दी की व्याकरणिक कोटियाँ	अंक-24
	संज्ञा, सर्वनाम, विशेषण, क्रिया विशेषण,	
	समास, संधि एवं संक्षिप्तियाँ	
	अनुवाद व्यवहार : अंग्रेजी से हिन्दी में अनुवाद	

इकाई विभाजन-

इकाई- 1	चोरी और प्रायश्चित : महात्मा गांधी / कार्यालयीन भाषा, मीडिया की भाषा
इकाई- 2	युवकों का समाज में स्थान : आचार्य नरेंद्र देव / वित्त एवं वाणिज्य की भाषा, मशीनी भाषा
इकाई- 3	मातृभूमि: वासुदेवशरण अग्रवाल / संज्ञा सर्वनाम, विशेषण, क्रिया विशेषण
इकाई- 4	डॉ. खूबचंद बघेल : हरि ठाकुर/समास, संधि,
इकाई- 5	सम्भाषण-कुशलता : पं. माधवराव सप्रे, / अनुवाद - अंग्रेजी से हिन्दी में अनुवाद, संक्षिप्तियाँ

मूल्यांकन योजना -

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक इकाई को दो-दो खण्डों (क्रमशः 'क' और 'ख' में) विभक्त करते हुए निर्धारित पाठ से 8 एवं शेष पाठ्य सामग्री से 7 अंक के प्रश्न होंगे। इस प्रकार पूरे प्रश्न-पत्र के पूर्णांक 75 होंगे।

पाठ्यक्रम संशोधन का औचित्य : विद्यार्थी चर्चित एवं सुप्रसिद्ध व्यक्तियों के लेख के माध्यम से समाज एवं राष्ट्रहित के साथ-साथ व्यक्तित्व विकास विषयक मुद्दों से परिचित हो सकें तथा व्याकरणक एवं भाषा विषयक प्रस्तावित पाठ्यक्रम के माध्यम से हिन्दी भाषा संबंधित प्रयोग पक्ष से परिचित होते हुए प्रतियोगी परीक्षाओं की दृष्टि से ज्ञानार्जन कर सकें।

अध्यक्ष— हिंदी अध्ययन मंडल

(संशोधित पाठ्यक्रम)

बी.ए. / बी.एस-सी. / बी.कॉम. / बी.एच.एस.-सी.

भाग - तीन, आधार पाठ्यक्रम

प्रश्न पत्र - प्रथम (हिन्दी भाषा)

(पेपर कोड - 0231)

पूर्णांक- 75

- इकाई-एक (क) भारत माता : सुमित्रानंदन पंत
(ख) कथन की शैलियाँ
1. विवरणात्मक शैली
2. मूल्यांकन शैली
3. व्याख्यात्मक शैली
4. विचारात्मक शैली
- इकाई-दो (क) सूखी डाली : उपेन्द्रनाथ अशक
(ख) विभिन्न संरचनाएँ
1. विनम्रता सूचक संरचना
2. विधि सूचक संरचना
3. निषेध परक संरचना
4. काल-बोधक संरचना
5. स्थान-बोधक संरचना
6. दिशा बोधक संरचना
7. कार्य-कारण सम्बन्ध संरचना
8. अनुक्रम संरचना
- इकाई-तीन (क) वसीयत : मालती जोशी
(ख) कार्यालयीन पत्र और आलेख
1. परिपत्र
2. आदेश
3. अधिसूचना
4. ज्ञापन
5. अनुस्मारक
6. पृष्ठाकंन
- इकाई-चार (क) योग की शक्ति : हरिवंश राय बच्चन
(ख) अनुवाद : स्वरूप एवं परिभाषा, उद्देश्य
स्रोत भाषा और लक्ष्य भाषा,

अच्छे अनुवाद की विशेषताएँ,

अनुवाद प्रक्रिया, अनुवादक

इकाई—पांच (क) संस्कृति और राष्ट्रीय एकीकरण : योगेश अटल

(ख) घटनाओं, समारोहों आदि का प्रतिवेदन, विभिन्न प्रकार के निमंत्रण पत्र

मूल्यांकन योजना : प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरित विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। इसलिए प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7 अंक होंगे। प्रश्नपत्र का पूर्णांक 75 निर्धारित है।

पाठ्यक्रम संशोधन का औचित्य –

निर्धारित पाठ का अध्ययन एवं हिन्दी भाषा प्रयोग की व्यवहारिक प्रणालियों से विधार्थियों को परिचित कराना तथा भाषा प्रयोग की सामान्य अशुद्धियों को दूर करने की दृष्टि से पाठ्यक्रम तैयार किया गया है। विधार्थियों के लिए पाठ्यक्रम का विस्तार बहुत ज्यादा न हो इसका ध्यान रखा गया है।

अध्यक्ष— हिंदी अध्ययन मंडल

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.A. Part-I (Mathematics)**

Paper-I (Algebra and Trigonometry)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-I Symmetric, Skew symmetric, Hermitian and skew hermitian, matrices. Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, Column rank and rank of a matrix. Equivalence of column and row ranks. Eigen values, Eigen vectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.	Unit-I Symmetric, Skew symmetric, Hermitian and skew hermitian, matrices. Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, Column rank and rank of a matrix. Equivalence of column and row ranks. Eigen values, Eigen vectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.	पाठ्यक्रम का वह भाग जो कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।

प्रश्नपत्र का शेष भाग यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.A. Part-I (Mathematics)**

Paper-II (Calculus)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-III Integration of irrational algebraic functions and transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.	Unit-III Integration of irrational algebraic functions and transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.	पाठ्यक्रम का वह भाग जो कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे
Unit-IV Degree and order of a differential equation. Equations of first order and first degree. Equations in which the variables are separable. Homogeneous equations. Linear equations and equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.	Unit-IV Degree and order of a differential equation. Equations of first order and first degree. Equations in which the variables are separable. Homogeneous equations. Linear equations and equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.	शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।

प्रश्नपत्र का शेष भाग यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.A. Part-I (Mathematics)**

Paper-III (VECTOR ANALYSIS AND GEOMETRY)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-IV Plane the Straight line and the plane. Sphere. Cone. Cylinder.	Unit-IV Plane the Straight line and the plane. Sphere. Cone. Cylinder.	कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।
प्रश्नपत्र का शेष भाग यथावत है।		

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.A. Part-II (Mathematics)**

Paper-I (ADVANCED CALCULUS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Paper-II (DIFFERENTIAL EQUATIONS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Paper-III (MECHANICS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

विषय/संकाय/प्रश्नपत्र का नाम: **B.A. Part-III (Mathematics)**

Paper-III (Optional Papers)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
(I) PRINCIPLES OF COMPUTER SCIENCE (II) DISCRETE MATHEMATICS (III) APPLICATION OF MATHEMATICS IN FINANCE AND INSURANCE (IV) PROGRAMMING IN C AND NUMERICAL ANALYSIS (V) MATHEMATICAL MODELLING	(I) PRINCIPLES OF COMPUTER SCIENCE (II) DISCRETE MATHEMATICS APPLICATION OF MATHEMATICS IN FINANCE AND INSURANCE (III) PROGRAMMING IN C AND NUMERICAL ANALYSIS MATHEMATICAL MODELLING	पूर्व में प्रचलित 5 वैकल्पिक प्रश्नपत्रों में से दो को अलोकप्रिय होने के कारण विलोपित किया गया है। विगत 10 वर्षों में किसी भी छात्र/छात्रा द्वारा उक्त प्रश्नपत्रों का चयन नहीं किया गया है।
प्रश्नपत्र का पाठ्यक्रम यथावत है।		

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.A. Part-I MATHEMATICS

PAPER - I ALGEBRA AND TRIGONOMETRY

UNIT-I Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.

UNIT-II Application of matrices to a system of linear (both homogeneous and nonhomogeneous) equations. Theorems on consistency of a system of linear equations. Relation between the roots and coefficients of general polynomial equations in one variable. Transformation of equations. Descartes's rule of signs. Solutions of cubic equations (Cardon's method), Biquadratic equation.

UNIT-III Mappings, Equivalence relations and partitions. Congruence modulo n . Definition of a group with examples and simple properties. Subgroups, generation of groups, cyclic groups, coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems. Normal subgroups. Quotient group, Permutation groups. Even and odd permutations. The alternating groups A_n . Cayley's theorem.

UNIT-IV Homomorphism and Isomorphism of groups. The fundamental theorems of homomorphism. Introduction, properties and examples of rings, Subrings, Integral domain and fields Characteristic of a ring and Field.

TRIGONOMETRY :

UNIT-V De-Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of trigonometrical functions. Gregory's series. Summation of series.

TEXT BOOK :

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. K.B. Datta, Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd. New Delhi, 2000.
3. Chandrika Prasad, Text-Book on Algebra and Theory of equations, Pothishala Private Ltd., Allahabad.
4. S.L. Loney, Plane Trigonometry Part II, Macmillan and Company, London.

REFERENCES :

1. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, First Course in linear Algebra, Wiley Eastern, New Delhi, 1983.
2. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, Basic Abstract Algebra (2 edition), Cambridge University Press, Indian Edition, 1997.
3. S.K. Jain, A. Gunawardena and P.B. Bhattacharya, Basic linear Algebra with MATLAB, Key College Publishing (Springer-Verlag), 2001.
4. H.S. Hall and S.R. Knight, Higher Algebra, H.M. Publications, 1994.
5. R.S. Verma and K.S. Shukla, Text Book on Trigonometry, Pothishala Pvt. Ltd., Allahabad.

B.A. Part-I
MATHEMATICS
PAPER - II
CALCULUS

DIFFERENTIAL CALCULUS :

UNIT-I $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of discontinuities. Differentiability. Successive differentiation. Leibnitz theorem. Maclaurin and Taylor series expansions.

UNIT-II Asymptotes. Curvature. Tests for concavity and convexity. Points of inflexion. Multiple points. Tracing of curves in cartesian and polar coordinates.

INTEGRAL CALCULUS:

UNIT-III Integration of transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.

ORDINARY DIFFERENTIAL EQUATIONS :

UNIT-IV Degree and order of a differential equation. Equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.

UNIT-V Linear differential equations of second order. Transformation of the equation by changing the dependent variable/the independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.

TEXT BOOK :

1. Gorakh Prasad, Differential Calculus, Pothishala Private Ltd. Allahabad.
2. Gorakh Prasad, Integral Calculus, Pothishala Private Ltd. Allahabad.
3. D.A. Murray Introductory Course in Differential Equations, Orient Longman (India), 1976.

REFERENCES :

1. Gabriel Klambauer, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum's outline series, Schaum Publishing Co. New York.
3. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
4. P.K. Jain and S.K. Kaushik, An Introduction to Real Analysis, S. Chand & Co. New Delhi, 2000.
5. G.F. Simmons, Differential Equations, Tata Mc Graw Hill, 1972.
6. E.A. Codington, An Introduction to Ordinary Differential Equations, Prentics Hall of India, 1961.
7. H.T.H. Piaggio, Elementary Treatise on Differential Equations and their Applications, C.B.S. Publishe & Distributors, Dehli, 1985.
8. W.E. Boyce and P.O. Dprima, Elementary Differential Equations and Boundary Value Problems, John Wiley, 1986.
12. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley and Sons, 1999.

B.A. Part-I
MATHEMATICS
PAPER - III
VECTOR ANALYSIS AND GEOMETRY

VECTOR ANALYSIS :

- UNIT-I** Scalar and vector product of three vectors. Product of four vectors. Reciprocal Vectors. Vector differentiation. Gradient, divergence and curl.
- UNIT-II** Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.
- UNIT-III** General equation of second degree. Tracing of conics. System of conics. Confocal conics. Polar equation of a conic.
- UNIT-IV** Sphere. Cone. Cylinder.
- UNIT-V** Central Conicoids. Paraboloids. Plane sections of conicoids. Generating lines. Confocal Conicoids. Reduction of second degree equations.

TEXT BOOKS :

1. N. Saran and S.N. Nigam, Introduction to vector Analysis, Pothishala Pvt. Ltd. Allahabad.
2. Gorakh Prasad and H.C. Gupta, Text Book on Coordinate Geometry, Pothishala Pvt. Ltd., Allahabad.
3. R.J.T. Bell, Elementary Treatise on Coordinate Geometry of three dimensions, Machmillan India Ltd. 1994.

REFERENCES :

1. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Company, New York.
2. Murray R. Spiegel, Vector Analysis, Schaum Publishing Company, New York.
3. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, 1999.
4. Shanti Narayan, A Text Book of Vector Calculus, S. Chand & Co., New Delhi.
5. S.L. Loney, The Elements of Coordinate Geometry, Macmillan and Company, London.
6. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of two Dimensions, Wiley Eastern Ltd., 1994.
7. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of three Dimensions, Wiley Eastern Ltd., 1999.
8. N. Saran and R.S. Gupta, Analytical Geometry of three Dimensions, Pothishala Pvt. Ltd. Allahabad.

MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.A. Part-II

Paper-I

ADVANCED CALCULUS

- UNIT-I Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison tests, Cauchy's integral test, Ratio tests, Raabe's, Logarithmic, De Morgan and Bertrand's tests. Alternating series, Leibnitz's theorem. Absolute and conditional convergence.
- UNIT-II Continuity, Sequential continuity, Properties of continuous functions, Uniform continuity, Chain rule of differentiability, Mean value theorems and their geometrical interpretations. Darboux's intermediate value theorem for derivatives, Taylor's theorem with various forms of remainders.
- UNIT-III Limit and continuity of functions of two variables. Partial differentiation. Change of variables. Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables. Jacobians.
- UNIT-IV Envelopes, evolutes. Maxima, minima and saddle points of functions of two variables. Lagrange's multiplier method.
- UNIT-V Beta and Gamma functions, Double and triple integrals, Dirichlet's integrals, Change of order of integration in double integrals.

REFERENCES :

1. Gabriel Klaumber, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. T.M. Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
3. R.R. Goldberg, Real Analysis, Oxford & I.B.H. Publishing Co., New Delhi, 1970.
4. D. Soma Sundaram and B. Choudhary, A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.
6. Gorakh Prasad, Differential Calculus, Pothishala Pvt. Ltd., Allahabad.
7. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Co., New York.
8. Gorakh Prasad, Integral Calculus, Pothishala Pvt. Ltd., Allahabad.
9. S.C. Malik, Mathematical Analysis, Wiley Eastern Ltd., New Delhi.
10. O.E. Stanaitis, An Introduction to Sequences, Series and Improper Integrals, Holden-Dey, Inc., San Francisco, California.
11. Earl D. Rainville, Infinite Series, The Macmillan Company, New York.
12. Chandrika Prasad, Text Book on Algebra and Theory of Equations, Pothishala Pvt. Ltd., Allahabad.
13. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
14. Shanti Narayan, A Course of Mathematical Analysis, S.Chand and Company, New Delhi.

B.A. Part-II
Paper-II
DIFFERENTIAL EQUATIONS

- UNIT-I Series solutions of differential equations- Power series method, Bessel and Legendre functions and their properties-convergence, recurrence and generating relations, Orthogonality of functions, Sturm-Liouville problem, Orthogonality of eigen-functions, Reality of eigen values, Orthogonality of Bessel functions and Legendre polynomials.
- UNIT-II Laplace Transformation- Linearity of the Laplace transformation, Existence theorem for Laplace transforms, Laplace transforms of derivatives and integrals, Shifting theorems. Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
- UNIT-III Partial differential equations of the first order. Lagrange's solution, Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
- UNIT-IV Partial differential equations of second and higher orders, Classification of linear partial differential equations of second order, Homogeneous and non-homogeneous equations with constant coefficients, Partial differential equations reducible to equations with constant coefficients, Monge's methods.
- UNIT-V Calculus of Variations- Variational problems with fixed boundaries- Euler's equation for functionals containing first order derivative and one independent variable, Extremals, Functionals dependent on higher order derivatives, Functionals dependent on more than one independent variable, Variational problems in parametric form, invariance of Euler's equation under coordinates transformation.
- Variational Problems with Moving Boundaries- Functionals dependent on one and two functions, One sided variations.
- Sufficient conditions for an Extremum- Jacobi and Legendre conditions, Second Variation. Variational principle of least action.

REFERENCES :

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, Inc., New York, 1999.
2. D.A. Murray, Introductory Course on Differential Equations, Orient Longman, (India), 1967.
3. A.R. Forsyth, A Treatise on Differential Equations, Macmillan and Co. Ltd., London.
4. Lan N. Sneddon, Elements of Partial Differential Equations, McGraw-Hill Book Company, 1988.
5. Francis B. Hilderbrand, Advanced Calculus for Applications, Prentice Hall of India Pvt. Ltd., New Delhi, 1977.
6. Jane Cronin, Differential equations, Marcel Dekkar, 1994.
7. Frank Ayres, Theory and Problems of Differential Equations, McGraw-Hill Book Company, 1972.
8. Richard Bronson, Theory and Problems of Differential Equations, McGraw-Hill, Inc., 1973.
9. A.S. Gupta, Calculus of variations with-Applications, Prentice-Hall of India, 1997.
10. R. Courant and D. Hilbert, Methods of Mathematical Physics, Vols. I & II, Wiley-Interscience, 1953.
11. I.M. Gelfand and S.V. Fomin, Calculus of Variations, Prentice-Hill, Englewood Cliffs (New Jersey), 1963.
12. A.M. Arthurs, Complementary Variational Principles, Clarendon Press, Oxford, 1970.
13. V. Kornkov, Variational Principles of Continuum Mechanics with Engineering Applications, Vol. I, Reidel Publ. : Dordrecht, Holland, 1985.
14. T. Oden and J.N. Reddy, Variational Methods in Theoretical Mechanics, Springer-Verlag, 1976.

B.A. Part-II
Paper-III
MECHANICS

STATICS

UNIT-I Analytical conditions of Equilibrium, Stable and unstable equilibrium. Virtual work, Catenary.

UNIT-II Forces in three dimensions, Poinsot's central axis, Null lines and planes.

DYNAMICS

UNIT-III Simple harmonic motion. Elastic strings. Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.

UNIT-IV Kepler's laws of motion, velocities and acceleration in tangential and normal directions, motion on smooth and rough plane curves.

UNIT-V Motion in a resisting medium, motion of particles of varying mass, motion of a particle in three dimensions, acceleration in terms of different co-ordinate systems.

REFERENCES :

1. S.L. Loney, Statics, Macmillan and Company, London.
2. R.S. Verma, A Text Book on Statics, Pothishala Pvt. Ltd., Allahabad.
3. S.L. Loney, An Elementary Treatise on the Dynamics of a particle and of rigid bodies, Cambridge University Press, 1956.

MATHEMATICS

There shall be three theory papers. Two compulsory and one optional. Each paper carrying 50 marks is divided into five units and each unit carry equal marks.

B.A. Part-III PAPER - I ANALYSIS

REAL ANALYSIS

UNIT-I Series of arbitrary terms. Convergence, divergence and oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real-valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.

UNIT-II Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of integral calculus. Mean value theorems of integral calculus. Improper integrals and their convergence. Comparison tests. Abel's and Dirichlet' tests. Frullani's integral. Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.

COMPLEX ANALYSIS

UNIT-III Complex numbers as ordered pairs. Geometrical representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions. Cauchy-Riemann equations. Harmonic functions. Elementary functions. Mapping by elementary functions. Mobius transformations. Fixed points, Cross ratio. Inverse points and critical mappings. Conformal mappings.

METRIC SPACES

UNIT-IV Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences, Completeness, Cantor's intersection theorem. Contraction principle, construction of real numbers as the completion of the incomplete metric space of rationals. Real numbers as a complete ordered field.

UNIT-V Dense subsets. Baire Category theorem. Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity, isometry and homeomorphism. Equivalent metrics. Compactness, sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and Compact sets, Connectedness, Components, Continuous functions and Connected sets.

REFERENCES :

1. T.M. Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
2. R.R. Goldberg, Real Analysis, Oxford & IBH publishing Co., New Delhi, 1970.
3. S. Lang, Undergraduate Analysis, Springer-Verlag, New York, 1983.
4. D. Somasundaram and B. Choudhary, A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. Shanti Narayan, A Course of Mathematical Analysis, S. Chand & Co. New Delhi.
6. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.
7. R.V. Churchill and J.W. Brown, Complex Variables and Applications, 5th Edition, McGraw- Hill, New York, 1990.
8. Mark J. Ablowitz and A.S. Fokas, Complex Variables : Introduction and Applications, Cambridge University Press, South Asian Edition, 1998.
9. Shanti Narayan, Theory of Functions of a Complex Variable, S. Chand & Co., New Delhi.
10. E.T. Copson, Metric Spaces, Cambridge University Press, 1968.
11. P.K. Jain and K. Ahmad, Metric Spaces, Narosa Publishing House, New Delhi, 1996.
12. G.F. Simmons, Introduction to Topology and Modern Analysis, McGraw-Hill, 1963.

B.A. Part-III
PART - II
ABSTRACT ALGEBRA

- UNIT-I** Group-Automorphisms, inner automorphism. Automorphism of groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for Group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow subgroup, Structure theorem for finite Abelian groups.
- UNIT-II** Ring theory-Ring homomorphism. Ideals and quotient rings. Field of quotients of an integral domain, Euclidean rings, polynomial rings, Polynomials over the rational field. The Eisenstein criterion, polynomial rings over commutative rings, Unique factorization domain. R unique factorisation domain implies so is $R[x_1, x_2, \dots, x_n]$. Modules, Submodules, Quotient modules, Homomorphism and Isomorphism theorems.
- UNIT-III** Definition and examples of vector spaces. Subspaces. Sum and direct sum of subspaces. Linear span, Linear dependence, independence and their basic properties. Basis. Finite dimensional vector spaces. Existence theorem for bases. Invariance of the number of elements of a basis set. Dimension. Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
- UNIT-IV** Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space. Bidual space and natural isomorphism. Adjoint of a linear transformation. Eigenvalues and eigenvectors of a linear transformation. Diagonalisation. Annihilator of a subspace. Bilinear, Quadratic and Hermitian forms.
- UNIT-V** Inner Product Spaces-Cauchy-Schwarz inequality. Orthogonal vectors. Orthogonal Complements. Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces. Gram-Schmidt Orthogonalization process.

REFERENCES :

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975.
2. N. Jacobson, Basic Algebra, Vols. I & II. W.H. Freeman, 1980 (also published by Hindustan Publishing Company).
3. Shanti Narayan, A Text Book of Modern Abstract Algebra, S.Chand & Co. New Delhi.
4. K.B. Datta, Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd., New Delhi, 2000.
5. P.B. Bhattacharya, S.K. Jain and S.R. Nagpal, Basic Abstract Algebra (2nd Edition) Cambridge University Press, Indian Edition, 1997.
6. K. Hoffman and R. Kunze, Linear Algebra, (2nd Edition), Prentice Hall. Englewood Cliffs, New Jersey, 1971.
7. S.K. Jain, A. Gunawardena and P.B. Bhattacharya, Basic Linear Algebra with MATLAB. Key College Publishing (Springer-Verlag) 2001.
8. S. Kumaresan, Linear Algebra, A Geometric Approach, Prentice-Hall of India, 2000.
9. Vivek Sahai and Vikas Bist, Algebra, Narosa Publishing House, 1997.
10. I.S. Luther and I.B.S.Passi, Algebra, Vol. I-Groups, Vol. II-Rings. Narosa Publishing House (Vol. I-1996, Vol. II-1999)
11. D.S. Malik, J.N. Mordeson, and M.K. Sen, Fundamentals of Abstract Algebra, McGraw- Hill International Edition, 1997.

B.A. Part-III
PAPER - III - (OPTIONAL)
(I) PRINCIPLES OF COMPUTER SCIENCE

- UNIT-I** **Data Storage** - Storage of bits. Main Memory. Mass Storage. Coding Information of Storage. The Binary System. Storing integers, storing fractions, communication errors.
Data Manipulation - The Central Processing Unit. The Stored-Program Concept. Programme Execution. Other Architectures. Arithmetic/Logic Instructions. Computer- Peripheral Communication.
- UNIT-II** **Operating System and Networks** - The Evolution of Operating System. Operating System Architecture. Coordinating the Machine's Activities. Handling Competition Among Process. Networks. Networks Protocol.
Software Engineering - The Software Engineering Discipline. The Software Life Cycle. Modularity. Development Tools and Techniques. Documentation. Software Ownership and Liability.
- UNIT-III** **Algorithms** - The Concept of an Algorithm, Algorithm Representation. Algorithm Discovery. Iterative Structures. Recursive Structures. Efficiency and Correctness. (Algorithms to be implemented in C++).
Programming Languages - Historical Perspective. Traditional Programming Concepts, Program Units. Language Implementation. Parallel Computing. Declarative Computing.
- UNIT-IV** **Data Structures** - Arrays. Lists. Stacks. Queues. Trees. Customised Data Types. Object Oriented Programming.
File Structure - Sequential Files. Text Files. Indexed Files. Hashed Files. The Role of the Operating System.
Database Structure - General Issues. The Layered Approach to Database Implementation. The Relational Model. Object-Oriented Database. Maintaining Database Integrity. E-R models
- UNIT-V** **Artificial Intelligence** - Some Philosophical Issues. Image Analysis. Reasoning, Control System Activities. Using Heuristics. Artificial Neural Networks. Application of Artificial Intelligence.
Theory of Computation - Turing Machines. Computable functions. A Non computable Function. Complexity and its Measures. Problem Classification.

REFERENCES :

1. J. Glen Brookshear, Computer Science : An Overview, Addition -Wesley.
2. Stanley B. Lippman, Josee Lojoie, C++ Primer (3rd Edition), Addison-Wesley.

B.A. Part-III
PAPER - III - (OPTIONAL)
(II) DISCRETE MATHEMATICS

UNIT-I **Sets and Propositions** - Cardinality. Mathematical Induction, Principle of inclusion and exclusion.
Computability and Formal Languages - Ordered Sets. Languages. Phrase Structure Grammars.
Types of Grammars and Languages. Permutations. Combinations and Discrete Probability.

UNIT-II **Relations and Functions** - Binary Relations, Equivalence Relations and Partitions. Partial Order
Relations and Lattices. Chains and Antichains. Pigeon Hole Principle.

Graphs and Planar Graphs - Basic Terminology. Multigraphs. Weighted Graphs. Paths and
Circuits. Shortest Paths. Eulerian Paths and Circuits. Travelling Salesman Problem. Planner Graphs.
Trees.

UNIT-III **Finite State Machines** - Equivalent Machines. Finite State Machines as Language Recognizers.
Analysis of Algorithms - Time Complexity. Complexity of Problems. Discrete Numeric Functions
and Generating Functions.

UNIT-IV **Recurrence Relations and Recursive Algorithms** - Linear Recurrence Relations with constant
coefficients. Homogeneous Solutions. Particular Solution. Total Solution. Solution by the Method of
Generating Functions. Brief review of Groups and Rings.

UNIT-V **Boolean Algebras** - Lattices and Algebraic Structures. Duality, Distributive and Complemented
Lattices. Boolean Lattices and Boolean Algebras. Boolean Functions and Expressions. Propositional
Calculus. Design and Implementation of Digital Networks. Switching Circuits.

REFERENCES :

1. C.L. Liu, Elements of Discrete Mathematics, (Second Edition), McGraw Hill, International Edition, Computer Science Series, 1986

B.A. Part-III
PAPER - III - (OPTIONAL)
(III) PROGRAMMING IN C AND NUMERICAL ANALYSIS
(Theory & Practical)

Theory component will have maximum marks 30.

Practical component will have maximum marks 20.

UNIT-I Programmer's model of a computer. Algorithms. Flow Charts. Data Types. Arithmetic and input/output instructions. Decisions control structures. Decision statements. Logical and Conditional operators. Loop. Case control structures. Functions. Recursions. Preprocessors. Arrays. Puppeting of strings. Structures. Pointers. File formatting.

Numerical Analysis

UNIT-II **Solution of Equations:** Bisection, Secant, Regula Falsi, Newton's Method, Roots of Polynomials. **Interpolation:** Lagrange and Hermite Interpolation, Divided Differences, Difference Schemes, Interpolation Formulas using Differences. Numerical Differentiation. Numerical Quadrature: Newton-Cote's Formulas. Gauss Quadrature Formulas, Chebychev's Formulas.

UNIT-III **Linear Equations:** Direct Methods for Solving Systems of Linear Equations (Gauss Elimination, LU Decomposition, Cholesky Decomposition), Iterative Methods (Jacobi, GaussSeidel, Relaxation Methods).

The Algebraic Eigenvalue problem: Jacobi's Method, Givens' Method, Householder's Method, Power Method, QR Method, Lanczos' Method.

UNIT-IV **Ordinary Differential Equations:** Euler Method, Single-step Methods, Runge-Kutta's Method, Multi-step Methods, Milne-Simpson Method, Methods Based on Numerical Integration, Methods Based on Numerical Differentiation, Boundary Value Problems, Eigenvalue Problems.

Approximation: Different Types of Approximation, Least Square Polynomial Approximation, Polynomial Approximation using Orthogonal Polynomials, Approximation with Trigonometric Functions, Exponential Functions, Chebychev Polynomials, Rational Functions.

Monte Carlo Methods

Unit-V Random number generation, congruential generators, statistical tests of pseudo-random numbers. Random variate generation, inverse transform method, composition method, acceptance rejection method, generation of exponential, normal variates, binomial and Poisson variates. Monte Carlo integration, hit or miss Monte Carlo integration, Monte Carlo integration for improper integrals, error analysis for Monte Carlo integration.

REFERENCES :

1. Henry Mullish and Herbert L. Cooper, Spirit of C: An Introduction to Modern Programming, Jaico Publishers, Bombay.
2. B.W. Kernighan and D.M. Ritchie. The C Programming Language 2nd Edition, (ANSI features) Prentice Hall, 1989.
3. Peter A Darnel and Philip E. Margolis, C : A Software Engineering Approach, Narosa Publishing House, 1993.
4. Robert C. Hutehison and Steven B. Just, Programming using C Language, McGraw Hill, 1988.
5. Les Hancock and Morris Krieger, The C Primer, McGraw Hill, 1988.
6. V. Rajaraman, Programming in C, Prentice Hall of India, 1994.
7. Byron S. Gottfried, Theory and Problems of Programming with C, Tata McGraw-Hill Publishing Co. Ltd., 1998.
8. C.E. Froberg, Introduction to Numerical Analysis, (Second Edition), Addison-Wesley, 1979.
9. James B. Scarborough, Numerical Mathematical Analysis, Oxford and IBHPublishing Co. Pvt. Ltd. 1966.

10. Melvin J. Maron, Numerical Analysis A Practical Approach, Macmillan publishing Co., Inc. New York, 1982.
11. M.K. Jain, S.R.K. Iyengar, R.K. Jain, Numerical Methods Problems and Solutions, New Age International (P) Ltd., 1996.
12. M.K. Jain, S.R.K. Iyengar, R.K. Jain, Numerical Methods for Scientific and Engineering Computation, New Age International (P) Ltd., 1999.
13. R.Y. Rubistein, Simulation and the Monte Carlo Methods, John Wiley, 1981.
14. D.J. Yakowitz, Computational Probability and Simulation, Addison-Wesley, 1977.

PAPER - III - (OPTIONAL)
(IV) PRACTICAL
PROGRAMMING IN C AND NUMERICAL ANALYSIS

LIST OF PRACTICAL TO BE CONDUCTED...

1. Write a program in C to find out the largest number of three integer numbers.
2. Write a program in C to accept monthly salary from the user, find and display income tax with the help of following rules :

Monthly Salary	Income Tax
9000 or more	40% of monthly salary
7500 or more	30% of monthly salary
7499 or less	20% of monthly salary

3. Write a program in C that reads a year and determine whether it is a leap year or not.
4. Write a program in C to calculate and print the first n terms of fibonacci series using looping statement.
5. Write a program in C that reads in a number and single digit. It determines whether the first number contains the digit or not.
6. Write a program in C to computes the roots of a quadratic equation using case statement.
7. Write a program in C to find out the largest number of four numbers using function.
8. Write a program in C to find the sum of all the digits of a given number using recursion.
9. Write a program in C to calculate the factorial of a given number using recursion.
10. Write a program in C to calculate and print the multiplication of given 2D matrices.
11. Write a program in C to check that whether given string palindrome or not.
12. Write a Program in C to calculate the sum of series:

$$1 + x + \frac{1}{2!}x^2 + \frac{1}{3!}x^3 + \dots + \frac{1}{n!}x^n$$

13. Write a program in C to determine the grade of all students in the class using Structure. Where structure having following members - name, age, roll, sub1, sub2, sub3, sub4 and total.
14. Write a program in C to copy one string to another using pointer. (Without using standard library functions).
15. Write a program in C to store the data of five students permanently in a data file using file handling.

पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़)

पाठ्यक्रम

बी. ए.- 1 (कोड- 101) B.A.-1 (Code-101)
बी. ए. क्लासिक्स- 1 (कोड-061) B.A. CLASSICS-1 (Code-061)

परीक्षा : 2018- 19

कुलसचिव पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़) की ओर से

संशोधित पाठ्यक्रम

बी. ए. भाग-1

हिन्दी साहित्य

प्रथम- प्रश्न पत्र

(प्राचीन हिन्दी काव्य)

पूर्णांक 75

(पेपर कोड- 0103)

उद्देश्य एवं प्रस्तावना-

प्राचीन से तात्पर्य है- आधुनिक काल से पूर्व का काल। सही अर्थ में हिन्दी भाषा और साहित्य का विकास आदिकाल से शुरू होता है। इसमें धार्मिक तथा ऐतिहासिक दो प्रकार का साहित्य मिलता है, जो प्रबंध, मुत्तक, रासो, फागु, चरित, सुभाषित आदि विविध काव्यरूपों में अभिव्यंजित है। मध्यकालीन साहित्य की पृष्ठभूमि के रूप में इसे प्रतिष्ठापित किया जाता है।

मध्यकालीन काव्य में भक्तिकाव्य, जहां लोक जागरण को स्वर देने वाला है, वहीं रीतिकाल अपने लौकिक- श्रृंगारिका, परिदृश्य में तत्कालीन सामाजिक, सांस्कृतिक, राजनीतिक स्थितियों को बेलौस अभिव्यंजित करता है। अतः भाषा, संस्कृति, विचार, मानवता, काव्यरूपता, लौकिकता- पारलौकिकता, आदि दृष्टियों से इसका अध्ययन अत्यावश्यक है।

पाठ्य विषय-

1. कबीर (कबीर- कांतिकुमार जैन, प्रारंभिक 50 साखियाँ)
2. जायसी- (संक्षिप्त पद्यावत- श्यामसुंदर दास, नागमती वियोग वर्णन)
3. सूर (भ्रमर गीत सार- सं. आचार्य रामचन्द्र शुक्ल, प्रारंभिक 25 पद)
4. तुलसी - "रामचरित मानस" के सुंदरकाण्ड से प्रारंभिक 30 दोहे चौपाई छंद साहित्य
5. घनानन्द (घनानन्द- सं. विश्वनाथ प्रसाद मिश्र, प्रारंभिक 25 छंद)

द्रुत पाठ हेतु निम्नांकित तीन कवियों का अध्ययन किया जावेगा- जिसमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

1. विद्यापति
2. रहीम
3. रसखान

अंक विभाजन-

1. व्याख्याएँ (3) - 21 अंक
2. आलोचनात्मक प्रश्न (2) - 24 अंक
3. लघुउत्तरीय प्रश्न (5) - 15 अंक
4. वस्तुनिष्ठ प्रश्न (15) - 15 अंक

संशोधित
बी. ए. भाग-1
हिन्दी साहित्य
द्वितीय- प्रश्न पत्र
हिन्दी कथा साहित्य
(पेपर कोड- 0104)

पूर्णांक 75

उद्देश्य एवं प्रस्तावना-

गद्य की प्रमुख विधाओं का इतना द्रुत विकास इनकी लोकप्रियता का प्रमाण प्रस्तुत करता है। इसमें आधुनिक जीवन, अपनी विविध कमियों के साथ यथार्थ रूप में अभिव्यंजित हुआ है। जीवन की अनुभूतियाँ, संवेदनाओं तथा विविध परिस्थितियों के साक्षात्कार के लिए इनका अध्ययन सर्वथा अपेक्षित है।

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक उपन्यास एवं आठ कहानीकारों की एक- एक प्रतिनिधि कहानी का अध्ययन आवश्यक है।

उपन्यास	1.	प्रेमचंद	-	गबन
कहानी	1.	प्रेमचंद	-	कफन
	2.	जयशंकर प्रसाद	-	आकाश दीप
	3.	यशपाल	-	परदा
	4.	फणीश्वनाथ रेणु	-	ठेस
	5.	मोहन राकेश	-	मलबे का मालिक
	6.	भीष्म साहनी	-	चीफ की दावत
	7.	गुलशेर खँ शानी	-	जली हुई रस्सी
	8.	रांगेय राघव	-	गदल

द्रुत पाठ के लिए निम्नांकित तीन कथाकारों का अध्ययन अपेक्षित है, जिनमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जावेंगे-

1. उपेन्द्रनाथ अशक,
2. बाल शौरि रेड्डी
3. शिवानी

अंक विभाजन-	व्याख्या (3)	21 अंक
	आलोचनात्मक प्रश्न (2)	24 अंक
	लघुउत्तरीय प्रश्न (5)	15 अंक
	वस्तुनिष्ठ प्रश्न (15)	15 अंक

पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़)

पाठ्यक्रम

बी. ए.-2 (कोड- 102) B. A.-2 (Code-102)
बी. ए. क्लासिक्स-2 (कोड- 062) B. A. CLASSICS-2 (Code-062)

परीक्षा : 2018- 19

कुलसचिव पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़) की ओर से

संशोधित
बी. ए. भाग-2
हिन्दी साहित्य
प्रथम प्रश्न पत्र

अर्वाचीन हिन्दी काव्य (पेपर कोड- 0173)

पूर्णांक- 75

प्रस्तावना- आधुनिक काव्य आधुनिकता की समस्त विशेषताओं को समेटे हुए है। स्वतंत्रता प्राप्ति के पूर्व की भाव- भाषा, शिल्प, अन्तर्वस्तु सम्बन्धी समस्त विकास धारा यहां सजीव रूप में देखी जा सकती है। इसे अनदेखा करना मनुष्य की विकास यात्रा को नजर अंदाज करना है। इस यात्रा के साक्षात्कार के लिए आधुनिक काव्य का अध्ययन अपेक्षित ही नहीं अपितु अनिवार्य हैं।

पाठ्य विषय-

1. मैथिलीशरण गुप्त – भारत- भारती की कविताएँ
2. सूर्यकान्त त्रिपाठी निराला – (1) सखि बसन्त आया।
(2) वर दे, वीणा वादिनी वर दे।
(3) हिन्दी के सुमनों के प्रति पत्र।
(4) तोड़ती- पत्थर।
(5) राजे ने अपनी रखवाली की।
3. सुमित्रानंदन पंत – (1) बादल।
(2) परिवर्तन 2 पद (1.खोलता इधर जन्मलोचन
2. आज का दुख कल का आल्हाद)
(3) ताज।
(4) झंझा में नीम।
(5) भारत माता।
4. माखन लाल चतुर्वेदी – (1) बलि पंथी से।
(2) साँझ और ढोलक की थापें।
(3) मैं बेच रही हूँ, दही।
(4) उलाहना।
(5) निः शस्त्र सेनानी।
5. स. ही. वात्स्यायन अज्ञेय – (1) सबेरे उठा तो धूप खिली थी।
(2) साम्राज्ञी का नैवेद्य दान।
(3) घर।
(4) चांदनी जी लो।
(5) दूर्वाचल।

द्रुतपाठ हेतु निम्न कवियों का अध्ययन किया जाएगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

1. अयोध्या सिंह उपाध्याय "हरिऔध" ।
2. सुभद्रा कुमारी चौहान ।
3. श्रीकांत वर्मा ।

अंक विभाजन—	व्याख्याएं (3)	— 21 अंक
	आलोचनात्मक प्रश्न (2)	— 24 अंक
	लघुउत्तरीय प्रश्न (5)	— 15 अंक
	वस्तुनिष्ठ (15)	— 15 अंक
	कुल अंक	75 अंक

इकाई विभाजन—

- इकाई— 1 व्याख्या
- इकाई— 2 गुप्त, निराला
- इकाई— 3 पंत, चतुर्वेदी, अज्ञेय
- इकाई— 4 द्रुतपाठ के कवि एवं आधुनिक काव्य धारा का इतिहास
(राष्ट्रीय काव्य धारा, छायावाद, प्रगतिवाद, प्रयोगवाद, नई कविता)
- इकाई— 5 वस्तुनिष्ठ (सम्पूर्ण पाठ्यक्रम से)

संशोधित
बी. ए. भाग-2
हिन्दी साहित्य
द्वितीय प्रश्न पत्र

हिन्दी निबंध तथा अन्य गद्य विधाएँ(पेपर कोड- 0174)

पूर्णांक- 75

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक नाटक, पांच प्रतिनिधि निबंध और पाँच एकांकी का निर्धारण किया गया है।

नाटक- अंधेरी नगरी- भारतेन्दु हरिश्चन्द्र

निबंध-	1. क्रोध	- आचार्य रामचन्द्र शुक्ल।
	2. बसन्त	- डॉ. हजारी प्रसाद द्विवेदी।
	3. उस अमराई ने राम- राम कही है	- डॉ. विद्यानिवास मिश्र।
	4. काव्येषु नाट्यम रम्यम्	- बाबू गुलाब राय।
	5. बेईमानी की परत	- हरिशंकर परसाई
एकांकी-	1. औरंगजेब की आखिरी रात	- डॉ. रामकुमार वर्मा
	2. स्ट्राईक	- भुनेश्वर
	3. एक दिन	- लक्ष्मीनारायण मिश्र
	4. दस हजार	- उदयशंकर भट्ट
	5. मम्मी ठकुराईन	- डॉ. लक्ष्मीनारायण लाल

द्रुत पाठ के लिए तीन गद्यकारों का अध्ययन किया जायेगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे।

1. राहुल सांकृत्यायन 2. महादेवी वर्मा 3. हबीब तनवीर

अंक विभाजन-	व्याख्याएं (3)	- 21 अंक
	आलोचनात्मक प्रश्न (2)	- 24 अंक
	लघुउत्तरीय प्रश्न (5)	- 15 अंक
	वस्तुनिष्ठ (15)	- 15 अंक
	कुल अंक	75 अंक

इकाई विभाजन-

इकाई- 1 व्याख्या

इकाई- 2 अंधेरी नगरी एवं क्रोध, वसन्त, उस अमराई ने राम- राम कही हैं।

इकाई- 3 औरंगजेब की आखिरी रात, स्ट्राईक, एक दिन, दस हजार, मम्मी ठकुराईन

इकाई- 4 द्रुतपाठ के गद्यकार- राहुल सांकृत्यायन, महादेवी वर्मा, हबीब तनवीर।

इकाई- 5 वस्तुनिष्ठ (समग्र पाठ्य विषय से)

पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़)

पाठ्यक्रम

बी. ए.-3 (कोड- 103) B. A.-3 (Code-103)
बी. ए. क्लासिक्स-3 (कोड- 053) B. A. CLASSICS-3 (Code-053)

परीक्षा : 2018- 19

कुलसचिव पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़) की ओर से

संशोधित पाठ्यक्रम
बी. ए. भाग- 3
हिन्दी साहित्य
प्रथम प्रश्न पत्र
जनपदीय भाषा- साहित्य (छत्तीसगढ़ी)
(पेपर कोड- 0233)

प्रस्तावना-

हिन्दी केवल खड़ी बोली नहीं है, बल्कि एक बहुत बड़ा भाषिक समूह है। हिन्दी जगत में अनेक विभाषाएं, बोलियाँ और उपबोलियाँ विद्यमान हैं जिनमें सकल साहित्य सम्पदा है। इनके सम्यक अध्ययन और अन्वेषण की आवश्यकता है। जनपदीय भाषा छत्तीसगढ़ी निरन्तर विकास की ओर अग्रसर हो रही है अस्तु, इस भाषा का और इसमें रचित साहित्य का इतिहास- विकास स्पष्ट करते हुए इनसे संबंधित प्रमुख रचनाकारों का आलोचनात्मक अनुशीलन करना हिन्दी के वृहत्तर हित में होगा। छत्तीसगढ़ी भाषा का पाठ्यक्रम निम्न बिन्दुओं पर आधारित है-

- (क) छत्तीसगढ़ी भाषा का इतिहास- विकास
- (ख) छत्तीसगढ़ी भाषा में रचित साहित्य का इतिहास
- (ग) छत्तीसगढ़ी भाषा के प्रमुख प्राचीन एवं अर्वाचीन रचनाकारों की कृतियों का अध्ययन।

पाठ्य विषय-

रचनाएँ-

- (1) प्राचीन कवि संत धर्मदास के 3 पद
 1. गुरु पड़या लागों नाम लखा दीजो हो।
 2. नैना आगे ख्याल घनेरा।
 3. भजन करौ भाई रे, अइसन तन पाय के।
(सन्दर्भ- धर्मदास के शब्दावली से उद्धृत)
- (2) लखनलाल गुप्त का गद्य-
 1. सोनपान
(गद्य- पुस्तक 'सोनपान' के उद्धृत)
- (3) अर्वाचीन रचनाकार
डॉ. सत्यभामा आडिल रचित गद्य
 1. सीख सीख के गोठ
(गद्य पुस्तक 'गोठ' के उद्धृत)
- (4) डॉ. विनय पाठक की कविताएँ-
 1. तँय उठथस सुरुज उथे
 2. एक किसिम के नियाव
(अकादसी और अनचिन्हार' पुस्तक से उद्धृत)

- (5) मुकुन्द कौशल- छत्तीसगढ़ी गजल
“छै बित्ता के मनखे देखो..... से- मछरी मन लाख लेथे” तक
(पुस्तक ‘ छत्तीसगढ़ी गजल’ के पृष्ठ 17 से उद्धृत)

द्रुतपाठ के रचनाकार- (व्यक्तित्व एवं कृतित्व)

1. सुन्दर लाल शर्मा
2. कपिलनाथ कश्यप
3. रामचन्द्र देशमुख (रंगकर्मी)

अंक विभाजन- व्याख्याएं (3)	- 21 अंक
आलोचनात्मक प्रश्न (2)	- 24 अंक
लघुउत्तरीय प्रश्न (5)	- 15 अंक
वस्तुनिष्ठ (15)	- 15 अंक
कुल अंक	75

इकाई विभाजन

इकाई एक	- व्याख्या
इकाई दो	- प्राचीन एवं अर्वाचीन रचनाकार
इकाई तीन	- (अ) छत्तीसगढ़ी भाषा का इतिहास (ब) छत्तीसगढ़ी साहित्य का इतिहास
इकाई चार	- द्रुत पाठ के तीन रचनाकार
इकाई पाँच	- वस्तुनिष्ठ / (सम्पूर्ण पाठ्यक्रम से)

संशोधित पाठ्यक्रम
बी.ए. भाग- 3
द्वितीय प्रश्न पत्र
हिन्दी भाषा- साहित्य का इतिहास तथा काव्यांग विवेचन
(पेपर कोड- 0234)

प्रस्तावना-

हिन्दी भाषा का इतिहास जितना प्राचीन है, उतना ही गुढ़- गहन भी। इसमें रचित साहित्य ने लगभग डेढ़ हजार वर्षों का इतिहास पूरा कर लिया है इसलिए हिन्दी भाषा और साहित्य के ऐतिहासिक विवेचन की बड़ी आवश्यकता है। इसी के साथ- साथ हिन्दी ने अपना जो स्वतंत्र साहित्य शास्त्र निर्मित किया हैं, उसे भी रूपायित करने की आवश्यकता है। इसके संज्ञान द्वारा विद्यार्थी की मर्मग्राहिणी प्रतिभा का विकास होगा और ऐतिहासिक परिप्रेक्ष्य में शुद्ध साहित्यिक विवेक का सन्निवेश होगा।

पाठ्य विषय-

(क) हिन्दी भाषा का स्वरूप विकास- हिन्दी की उत्पत्ति, हिन्दी की मूल आकर भाषाएँ तथा विभिन्न विभाषाओं का विकास। हिन्दी भाषा के विभिन्न रूप-

1. बोलचाल की भाषा
2. रचनात्मक भाषा
3. राष्ट्रभाषा
4. राजभाषा
5. सम्पर्क भाषा
6. संचार भाषा

हिन्दी का शब्द भण्डार- तत्सम, तद्भव, देशज, आगत शब्दावली।

(ख) हिन्दी साहित्य का इतिहास :- आदिकाल, पूर्व मध्यकाल, उत्तर मध्यकाल और आधुनिक काल की सामाजिक, सांस्कृतिक पृष्ठभूमि, प्रमुख युग प्रवृत्तियाँ, विशिष्ट रचनाकार और उनकी प्रतिनिधि कृतियाँ, साहित्यिक विशेषताएँ।

(ग) काव्यांग - काव्य का स्वरूप एवं प्रयोजन।
रस के विभिन्न भेद, विभिन्न अंग, विभावादि तथा उदाहरण।
प्रमुख 5 छंद - दोहा, सोरठा, चौपाई, कुण्डलियाँ, सवैया।
शब्दालंकार - अनुप्रास, यमक, श्लेष, वक्रोक्ति, पुररुक्ति प्रकाश।
अर्थालंकार - उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, भ्रांतिमान।

संदर्भ ग्रन्थ-

- (1) हिन्दी साहित्य का इतिहास संपादक- डॉ. सुशील त्रिवेदी व बाबूलाल शुक्ल (प्रकाशक- म. प्र. उ. शि. अनुदान आयोग)
- (2) राजभाषा हिन्दी- मलिक मोहम्मद (प्रभात प्रकाशन दिल्ली)

(3) हिन्दी भाषा— डॉ. भोलानाथ तिवारी।

अंक विभाजन—

आलोचनात्मक (4)	— 44 अंक
लघुउत्तरीय प्रश्न (4)	— 16 अंक
वस्तुनिष्ठ प्रश्न (15)	— 15 अंक
कूल अंक— 75 अंक	

इकाई विभाजन—

- इकाई— 1 हिन्दी भाषा का स्वरूप— विकास— (खण्ड— 'क')
- इकाई— 2 हिन्दी का शब्द भण्डार— (खण्ड 'क' का अंतिम भाग)
- इकाई— 3 हिन्दी साहित्य का इतिहास— (खण्ड— ख)
- इकाई— 4 काव्यांग— रस, छंद, अंलकार (भाग— ग)
- इकाई— 5 लघुउत्तरीय एवं वस्तुनिष्ठ प्रश्न (सम्पूर्ण पाठ्यक्रम से)

पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़)

पाठ्यक्रम

बी. ए.- 1 (कोड- 101) B.A.-1 (Code-101)
बी. ए. क्लासिक्स- 1 (कोड-061) B.A. CLASSICS-1 (Code-061)

परीक्षा : 2018- 19

कुलसचिव पं. रविशंकर शुक्ल विश्वविद्यालय
रायपुर (छत्तीसगढ़) की ओर से

प्रपत्र

विषय :- संस्कृत (कला संकाय)

बी.ए. प्रथम वर्ष

प्रथम प्रश्नपत्र

प्रश्न-पत्र का नाम – नाटक, व्याकरण और अनुवाद

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
<p>इकाई –3</p> <p>1 सुबन्त (शब्दरूप) – राम, गति, भानु, पितृ, करिन्, भूमृत्, कर्तृ, चन्द्रमस्, भगवत्, आत्मन्, लता, मति, नदी, धेनु, वधू, मातृ, फल, वारि मधु, वाच्, रात्रि, सर्व, तद्, एतद्, यद्, इदम्, जगत् अस्मद्, युष्मद्, एक, द्वि, त्रि, चतुर्</p> <p>तिङन्त (धातुरूप) – भ्वादि, दिवादि, तुदादि, चुरादि गण के दिवादि, तुदादि, चुरादि गण के धातुओं के लट्, लृट्, लङ्, लोट् एवं विधिलिङ् लकारों के रूप अतिरिक्त अस् एवं कृ धातुओं के लट्, लोट्, लङ् और विधिलिङ् लकारों के रूप एवं अस् और कृ धातुओं के भी लकार के रूप ।</p>	<p>इकाई –3</p> <p>1 सुबन्त (शब्दरूप) – राम, मुनि, भानु, पितृ, करिन्, कर्तृ, आत्मन्, लता, मति, नदी, मातृ, फल, सर्व, तद्, एतद्, यद्, इदम्, अस्मद्, युष्मद् ।</p> <p>2 तिङन्त (धातुरूप) – भ्वादि, दिवादि, तुदादि, चुरादि गण के अतिरिक्त अस् एवं कृ धातुओं के लट्, लृट्, लङ्, लोट् एवं विधिलिङ् लकारों के रूप</p> <p>3. अपठित गद्यांश पर आधारित प्रश्न</p>	<p>छत्तीसगढ़ लोक सेवा आयोग के पाठ्यक्रम के अनुरूप बिन्दु क्रं 3 (अपठित गद्यांश पर आधारित प्रश्न) का समावेश करने से छात्रों को इसका अभ्यास, लाभ मिल सकेगा ।</p> <p>नोट – पाठ्यक्रम के सन्तुलन को ध्यान में रखते हुए नवीन पाठ्यक्रम में किंचित् पाठ्यसामग्री सम्पादित की गई है तथा समस्त पाँचों इकाई के लिए समान रूप से 15 अंक निर्धारित किये गये हैं ।</p>

प्रपत्र

विषय :- संस्कृत (कला संकाय)

बी.ए. प्रथम वर्ष

द्वितीय प्रश्नपत्र

प्रश्नपत्र का नाम – गद्य, कथा एवं साहित्येतिहास

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
इकाई –4 संस्कृत नाटक एवं कथा साहित्य का इतिहास	इकाई –4 वैदिक एवं पौराणिक साहित्य का सामान्य परिचय (वेद, ब्राह्मण, आरण्यक, उपनिषद्, वेदांगों एवं पुराणों का संक्षिप्त परिचय)	नेट परीक्षा के पाठ्यक्रम की दृष्टि से नवीन पाठ्यसामग्री के समावेश से छात्र लाभान्वित होंगे । (वर्तमान पाठ्यसामग्री को द्वितीय वर्ष की पाठ्यसामग्री में सम्मिलित किया गया है ।)
इकाई –5 निम्नलिखित कवियों का परिचय – महाकवि कालिदास, महाकवि माघ, महाकवि भारवि, महाकवि श्रीहर्ष, महाकवि अम्बिकादत्त व्यास	इकाई –5 निम्नलिखित कवियों का परिचय – महाकवि कालिदास, महाकवि माघ, महाकवि भारवि, महाकवि श्रीहर्ष, बाणभट्ट, शूद्रक, विशाखदत्त, भवभूति ।	समस्त पाँचों इकाई के लिए समान रूप से 15 अंक निर्धारित किये गये हैं । तथा पाठ्यक्रम को सन्तुलित करने पाठ्यसामग्री (चार कवि-परिचय) का समावेश किया गया है ।

प्रपत्र

विषय :- संस्कृत (कला संकाय)

बी.ए. द्वितीय वर्ष

संस्कृत

द्वितीय प्रश्नपत्र

नाटक, व्याकरण और अनुवाद

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
इकाई -4 महाकाव्य तथा गद्यकाव्य – रघुवंश, कुमारसंभव, बुद्धचरित, सौन्दरनन्द, पद्मचूडामणि, सुग्रीववध, किरातार्जुनीय, भट्टिकाव्य, जानकीहरण, शिशुपालवध, नैषधीयचरित, हरविजय, नवसाहसांकचरित, विक्रमांकदेवचरित, राजतरंगिणी । वासवदत्ता, दशकुमारचरित, कादम्बरी, हर्षचरित, तिलकमंजरी, गद्यचिन्तामणि, शिवराजविजय ।	इकाई -4 नाटक, महाकाव्य तथा गद्यकाव्य – अभिज्ञानशाकुन्तल, उत्तररामचरित, वेणीसंहार, मुद्राराक्षस, मृच्छकटिक, रघुवंश, कुमारसंभव, बुद्धचरित, सौन्दरनन्द, पद्मचूडामणि, सुग्रीववध, किरातार्जुनीय, भट्टिकाव्य, जानकीहरण, शिशुपालवध, नैषधीयचरित, हरविजय, नवसाहसांकचरित, विक्रमांकदेवचरित, राजतरंगिणी । वासवदत्ता, दशकुमारचरित, कादम्बरी, हर्षचरित, तिलकमंजरी, गद्यचिन्तामणि, शिवराजविजय ।	नेट परीक्षा के पाठ्यक्रम की दृष्टि से एक नवीन पाठ्यसामग्री (नाट्यग्रन्थ) का समावेश किया गया है । तथा समस्त पाँचों इकाई के लिए समान रूप से 15 अंक निर्धारित किये गये हैं ।

नोट – बी.ए.प्रथम वर्ष, द्वितीय वर्ष एवं अंतिम वर्ष के सभी प्रश्नपत्रों की पाँचों इकाई को समान रूप से 15 अंकों का निर्धारित किया गया है ।

सत्र 2018-19 से लागू
बी.ए. प्रथम वर्ष
संस्कृत
प्रथम प्रश्नपत्र
नाटक, व्याकरण और अनुवाद

पूर्णांक - 75

इकाई -1	स्वप्नवासवदत्तम् - व्याख्या	अंक - 15
इकाई -2	स्वप्नवासवदत्तम् - समीक्षात्मक प्रश्न	अंक - 15
इकाई -3	1. सुबन्त (शब्दरूप) - राम, मुनि, भानु, पितृ, करिन्, कर्तृ, आत्मन्, लता, मति, नदी, धेनु, मातृ, फल, वारि, सर्व, तद्, एतद्, यद्, इदम्, अस्मद्, युष्मद् । 2. तिङन्त (धातुरूप) - भ्वादि, दिवादि, तुदादि, चुरादि गण के अतिरिक्त अस् एवं कृ धातुओं के लट्, लृट्, लङ्, लोट् एवं विधिलिङ् लकारों के रूप 3. अपठित गद्यांश पर आधारित प्रश्न	अंक - 15
इकाई -4	प्रत्याहार, संज्ञा, सन्धि और विभक्त्यर्थ	अंक - 15
इकाई -5	हिन्दी से संस्कृत में अनुवाद	अंक - 15

अनुशासित ग्रन्थ -

1. रचनानुवाद कौमुदी - डा. कपिलदेव द्विवेदी
2. संस्कृतस्य व्यावहारिकस्वरूपम् - डा. नरेन्द्र, श्री अरविन्द आश्रम
3. संस्कृतव्याकरण - श्रीधर वसिष्ठ
4. संस्कृत में अनुवाद कैसे करें - उमाकान्त मिश्र शास्त्री, प्रकाशक - भारती भवन
5. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी

सत्र 2018-19 से लागू
बी.ए. प्रथम वर्ष
संस्कृत
द्वितीय प्रश्नपत्र
गद्य, कथा एवं साहित्येतिहास

पूर्णांक – 75

इकाई -1	शुकनासोपदेश: – व्याख्या	अंक – 15
इकाई -2	हितोपदेश: (मित्रलाभ:) – व्याख्या	अंक – 15
इकाई -3	शुकनासोपदेश एवं हितोपदेश के समीक्षात्मक प्रश्न	अंक – 15
इकाई -4	वैदिक एवं पौराणिक साहित्य का सामान्य परिचय (वेद, ब्राह्मण, आरण्यक, उपनिषद्, वेदांगों एवं पुराणों का संक्षिप्त परिचय)	अंक – 15
इकाई -5	निम्नलिखित कवियों का परिचय – महाकवि कालिदास, भारवि, माघ, श्रीहर्ष, विशाखदत्त, बाणभट्ट, शूद्रक, विशाखदत्त, भवभूति ।	अंक – 15

अनुशासित ग्रन्थ –

1. शुकनासोपदेश – प्रकाशक – मोतीलाल बनारसीदास, वाराणसी
2. हितोपदेश (मित्रलाभ) – प्रकाशक – मोतीलाल बनारसीदास, वाराणसी
3. वैदिक साहित्य और संस्कृति – आचार्य बलदेव उपाध्याय
4. संस्कृत साहित्य का इतिहास – आचार्य बलदेव उपाध्याय
5. संस्कृत साहित्य का अभिनव इतिहास – डा. राधावल्लभ त्रिपाठी, वि.वि. प्रकाशन, सागर, म.प्र.

सत्र 2019-20 से लागू
बी.ए. द्वितीय वर्ष
संस्कृत
प्रथम प्रश्नपत्र
नाटक, व्याकरण तथा रचना

पूर्णांक - 75

इकाई -1	नागानन्द नाटकम् (हर्षवर्धनकृत) 1. एक ससन्दर्भ व्याख्या 2. दो सूक्तियों की व्याख्या	अंक - 15
इकाई -2	नागानन्द नाटकम् - समीक्षात्मक प्रश्न	अंक - 15
इकाई -3	व्याकरण (लघुसिद्धान्तकौमुदी) कर्तृवाच्य, कर्मवाच्य, भाववाच्य	अंक - 15
इकाई -4	व्याकरण (लघुसिद्धान्तकौमुदी) समास प्रकरण	अंक - 15
इकाई -5	वाक्यरचना व्याकरण के अधीत अंश पर आधारित छह संस्कृत शब्दों से वाक्यरचना	अंक - 15

अनुशासित ग्रन्थ -

1. नागानन्द नाटक - हर्षवर्धन, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
2. रचनानुवाद कौमुदी - डा. कपिलदेव द्विवेदी
3. संस्कृत में अनुवाद कैसे करें - उमाकान्त मिश्र शास्त्री, प्रकाशक - भारती भवन
4. लघु सिद्धान्त कौमुदी - श्रीधरानन्द शास्त्री
5. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
6. शीघ्रबोधव्याकरणम् - डा. पुष्पा दीक्षित, पाणिनीय शोध संस्थान, तेलीपारा, बिलासपुर

सत्र 2019-20 से लागू

बी.ए. द्वितीय वर्ष

संस्कृत

द्वितीय प्रश्नपत्र

नाटक, व्याकरण और अनुवाद

पूर्णांक - 75

इकाई -1	रघुवंशमहाकाव्यम् (द्वितीय सर्गः) दो श्लोकों की व्याख्या	अंक - 15
इकाई -2	रघुवंशमहाकाव्य के समीक्षात्मक प्रश्न	अंक - 15
इकाई -3	नीतिशतकम् (भर्तृहरिकृत) दो श्लोकों की व्याख्या	अंक - 15
इकाई -4	साहित्येतिहासः नाटक, महाकाव्य तथा गद्यकाव्य - अभिज्ञानशाकुन्तल, उत्तररामचरित, वेणीसंहार, मुद्राराक्षस, मृच्छकटिक, रघुवंश, कुमारसंभव, बुद्धचरित, सौन्दरनन्द, पद्मचूडामणि, सुग्रीववध, किरातार्जुनीय, भट्टिकाव्य, जानकीहरण, शिशुपालवध, नैषधीयचरित, हरविजय, नवसाहसांकचरित, विक्रमांकदेवचरित, राजतरंगिणी । वासवदत्ता, दशकुमारचरित, कादम्बरी, हर्षचरित, तिलकमंजरी, गद्यचिन्तामणि, शिवराजविजय ।	अंक - 15
इकाई -5	साहित्येतिहासः गीतिकाव्य, मुक्तक तथा कथा साहित्य - शतकत्रय (भर्तृहरि), ऋतुसंहार, मेघदूत, अमरुकशतक, गीतगोविन्द, भामिनीविलास, पंचलहरी, नलचम्पू, रामायणचम्पू, भारतचम्पू, वरदाम्बिकापरिणय, पंचतंत्र, हितोपदेश, बेतालपंचविंशति, शुकसप्तति, कथासरित्सागर, बृहत्कथामंजरी, कथामुक्तावली, इक्षुगन्धा । (उल्लिखित रचनाओं एवं रचनाकारों का सामान्य परिचय अपेक्षित है ।)	अंक - 15

अनुशासित ग्रन्थ -

1. रघुवंशमहाकाव्य - कालिदास, प्रकाशक - मोतीलाल बनारसीदास
2. नीतिशतकम् - भर्तृहरि, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
3. संस्कृत साहित्य का इतिहास - आचार्य बलदेव उपाध्याय
4. संस्कृत साहित्य का अभिनव इतिहास - डा. राधावल्लभ त्रिपाठी, वि.वि. प्रकाशन, सागर, म.प्र.

सत्र 2020-21 से लागू
बी.ए. अन्तिम वर्ष
संस्कृत
प्रथम प्रश्नपत्र
नाटक, व्याकरण और अनुवाद

पूर्णांक - 75

इकाई -1	अभिज्ञानशाकुन्तलम् (नाटक) दो श्लोकों की व्याख्या	अंक - 15
इकाई -2	अभिज्ञानशाकुन्तलम् - समीक्षात्मक प्रश्न	अंक - 15
इकाई -3	निर्धारित छन्दों के लक्षण तथा उदाहरण - अनुष्टुप्, इन्द्रवज्रा, उपेन्द्रवज्रा, उपजाति, वंशस्थ, आर्या, मालिनी, शिखरिणी, वसन्ततिलका, शार्दूलविक्रीडित, स्रग्धरा, मन्दाक्रान्ता ।	अंक - 15
इकाई -4	व्याकरण - लघुसिद्धान्तकौमुदी कृदन्त प्रकरण तव्यत् , अनीयर् , यत् , क्यप् , ण्यत् , शतृ , शानच् , क्त्वा, ल्यप् , तुमुन् , क्त , क्तवतु , ण्वुल् , तृच् , ल्युट् , अण् ।	अंक - 15
इकाई -5	व्याकरण - लघुसिद्धान्तकौमुदी 1.तद्धितप्रत्यय - अण् , ढक् , ष्यञ् , त्व, तल् , इमनिच् , ठक् , इञ् , मतुप् इनि, इतच् , ईयसुन् , इष्टन् , तरप् , तमप् , ण्य, यञ् । 2.स्त्रीप्रत्यय - टाप् , डीप् , डीश् , डीन् ।	अंक - 15

अनुशासित ग्रन्थ -

1. अभिज्ञानशाकुन्तलम् - कालिदास, प्रकाशक - मोतीलाल बनारसीदास, वाराणसी
2. छन्दोमंजरी - प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
3. लघु सिद्धान्त कौमुदी - श्रीधरानन्द शास्त्री
4. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
5. शीघ्रबोधव्याकरणम् - डा. पुष्पा दीक्षित, पाणिनीय शोध संस्थान, तेलीपारा, बिलासपुर
6. संस्कृत हिन्दी कोश - वामन शिवराम आप्टे, प्रकाशक - मोतीलाल बनारसीदास,

सत्र 2020-21 से लागू
बी.ए. अन्तिम वर्ष
संस्कृत
द्वितीय प्रश्नपत्र
नाटक, व्याकरण और अनुवाद

पूर्णांक - 75

- इकाई -1 किरातार्जुनीय (भारवि) प्रथमसर्ग अंक - 15
दो श्लोकों की ससन्दर्भ व्याख्या
- इकाई -2 किरातार्जुनीय - आलोचनात्मक प्रश्न अंक - 15
- इकाई -3 मूलरामायण -वाल्मीकि अंक - 15
व्याख्या अथवा आलोचनात्मक प्रश्न
- इकाई -4 अलंकार - अंक - 15
अनुप्रास, यमक, शब्दश्लेश, उपमा, रूपक, उत्प्रेक्षा, अनन्वय,
अर्थान्तरन्यास, स्वभावोक्ति, अतिशयोक्ति, दीपक, विभावना, विशेषोक्ति,
अपह्नुति, दृष्टान्त, निदर्शना, प्रतिवस्तूपमा, सन्देह, भ्रान्तिमान् , काव्यलिंग ।

टिप्पणी - अलंकारों के लक्षण चन्द्रालोक, काव्यप्रकाश अथवा साहित्यदर्पण
से अध्येतव्य हैं, उदाहरण पाठ्यक्रमों से भी दिये जा सकते हैं ।

- इकाई -5 निबन्ध (संस्कृत भाषा में) 15 वाक्यों में अंक - 15
टिप्पणी - निबन्ध समीक्षात्मक अथवा विश्लेषणात्मक न होकर वर्णनात्मक
पूछे जायेंगे ।

अनुशासित ग्रन्थ -

1. संस्कृतनिबन्धशतकम् - डा. कपिलदेव द्विवेदी, चौखम्बा प्रकाशन, वाराणसी
 2. निबन्धपारिजात - डा. रजनीकान्त लहरी, चौखम्बा प्रकाशन, वाराणसी
 3. प्रबन्धरत्नाकर - डा. रमेशचन्द्र शुक्ल, चौखम्बा प्रकाशन, वाराणसी
 4. रचनानुवादकौमुदी - डा. कपिलदेव द्विवेदी, चौखम्बा प्रकाशन, वाराणसी
-

**संशोधित पाठ्यक्रम – बी.ए. प्रथम वर्ष के अंतर्गत
विषय – नृत्य (भरत नाट्यम)**

बी.ए. भाग (1) के लिये इस विषय में प्रायोगिक और सैद्धांतिक दो भाग होंगे। प्रायोगिक 50 अंक एवं सैद्धांतिक 100 अंक का होगा। इस हेतु 50-50 अंक के दो प्रश्नपत्र होंगे। प्रत्येक वर्ष के पूर्णांक कुल मिलाकर 150 अंक के होंगे।

क्र	विवरण	पूर्णांक	उत्तीर्णांक
1	सैद्धांतिक प्रथम प्रश्न पत्र	50	17
2	सैद्धांतिक द्वितीय प्रश्न पत्र	50	17
3	प्रायोगिक	50	17
योग		150	51

सैद्धांतिक (विस्तृत पाठ्यक्रम)

प्रथम प्रश्न पत्र

**शीर्षक – नृत्य का इतिहास एवं सामान्य अध्ययन
पेपर कोड (0153)**

1. नृत्य का इतिहास – सिंधु सभ्यता, वैदिक काल, रामायण एवं महाभारत काल में नृत्य की स्थिति।
2. पुराणों के आधार पर – उमाशकर एवं नटवर श्री कृष्ण की नृत्य संबंधी कथायें – त्रिपुरडाह, उमा तांडव, मोहिनी-भस्मासुर, माखन लीला, कालिया दमन, रासलीला।
3. नृत्य का अन्य ललित कलाओं से संबंध – संगीत, साहित्य, चित्रकला एवं मूर्तिकला से संबंध।
4. नाट्य की उत्पत्ति कथा – भारत के नाट्यशास्त्र के प्रथम अध्याय में वर्णित।
5. लोकधर्मी नाट्य परंपरा – निम्न की संक्षिप्त जानकारी –
 1. रामलीला
 2. रासलीला
 3. भवाई
 4. माच

सैद्धांतिक (विस्तृत पाठ्यक्रम)
द्वितीय प्रश्न पत्र
शीर्षक – शास्त्रीय नृत्य सिद्धान्त
पेपर कोड (0154)

1. ताल की प्रारंभिक जानकारी – 1. ताल के दस प्राण।
2. लय – विलंबित, मध्य एवं द्रुत लय।
2. संक्षिप्त जीवन परिचय – भरत मुनि, आचार्य नंदिकेश्वर।
3. नृत्य के अभ्यास से शारीरिक एवं मानसिक लाभ।
4. भारतीय नाट्य परंपरा में गुरुवंदना का महत्व।
5. छत्तीसगढ़ी नृत्यों का सामान्य परिचय – 1. करमा 2. ददरिया
3. सुवा 4. रीना, परब

प्रायोगिक

1. मौखिक मुद्रा प्रदर्शन – (अभिनय दर्पण के अनुसार)
(1) शिवस्तुति (2) शिरोभेद (3) ग्रीवाभेद
(4) दृष्टिभेद (5) असंयुक्त हस्त (6) संयुक्त हस्त
2. कार्यक्रम विभाग – (1) शारीरिक अभ्यास
(2) आरंभिक –05 अङ्क भेद
(पद + हस्त संचालन तीन काल में)
(3) पूजा नृत्य
(4) अलारिपु (तिस्त्रजाति)

**संशोधित पाठ्यक्रम – बी.ए. द्वितीय वर्ष के अंतर्गत
विषय – नृत्य (भरत नाट्यम)**

बी.ए. भाग (2) के लिये इस विषय में प्रायोगिक और सैद्धांतिक दो भाग होंगे। प्रायोगिक 50 अंक एवं सैद्धांतिक 100 अंक का होगा। इस हेतु 50-50 अंक के दो प्रश्नपत्र होंगे। प्रत्येक वर्ष के पूर्णांक कुल मिलाकर 150 अंक के होंगे।

क्र	विवरण	पूर्णांक	उत्तीर्णांक
1	सैद्धांतिक प्रथम प्रश्न पत्र	50	17
2	सैद्धांतिक द्वितीय प्रश्न पत्र	50	17
3	प्रायोगिक	50	17
योग		150	51

सैद्धांतिक (विस्तृत पाठ्यक्रम)

प्रथम प्रश्न पत्र

**शीर्षक – नृत्य का इतिहास एवं सामान्य जानकारी
(पेपर कोड – 0220)**

1. नृत्य का इतिहास (पाणिनी काल से गुप्त काल तक नृत्य का इतिहास) – 1. जैन एवं बौद्ध अभ्युदय काल 2. पूर्व मध्यकाल 3. शुंग एवं कनिष्क काल 4. गुप्तकाल
2. अभिनयभेद – आंगिक, वाचिक, आहार्य एवं सात्विक
3. विभिन्न शास्त्रीय नृत्य प्रणालियाँ (संक्षिप्त परिचय) – 1. भरत नाट्यम 2. कथक 3. कथकलि 4. ओडिसी
4. संगीत की व्याख्या और नृत्य का उसमें स्थान
5. लोकधर्मी नाट्य परंपरा (संक्षिप्त जानकारी) – लोकनाट्य
1. जात्रा 2. तमाशा
3. कीर्त निया 4. डांडिया रास
लोक नृत्य – गरबा, सरहुल

सैद्धांतिक (विस्तृत पाठ्यक्रम)
द्वितीय प्रश्न पत्र
शीर्षक – शास्त्रीय नृत्य सिद्धान्त
(पेपर कोड – 0221)

1. दक्षिण भारतीय ताल पद्धति
2. संक्षिप्त टिप्पणियाँ – 1. मंगलाचरण 2. पुष्पांजलि 3. नाट्य
4. नृत्त 5. नृत्य
3. नृत्य कलाकार के आवश्यक गुण एवं दोष
4. भरतनाट्यम पद्धति के क्रमों (मार्गम का संक्षिप्त विवरण)
1. अलारिपु 2. जतिस्वरम् 3. शब्दम् 4. अष्टपदी 5. पदम्
5. वरिष्ठ नृत्य कलाकार की संक्षिप्त जीवनी
1. श्रीमती गौरी अम्मा 2. श्री मीनाक्षी सुंदरम् पिल्लई

प्रायोगिक

1. मौखिक मुद्रा प्रदर्शन –
 - (1) असंयुक्त हस्त की प्रथम पंद्रह मुद्राओं (पताक से पद्मकोष तक) का विनियोग (श्लोक सहित)
 - (2) देव हस्त, (3) बंधु – बांधव हस्त
2. कार्यक्रम विभाग
 - (1) शारीरिक अभ्यास
 - (2) दस अङ्गु (अंगसंचालन चार काल में)
 - (3) जतिस्तरम्
 - (4) शब्दम् या श्लोकम्

**संशोधित पाठ्यक्रम – बी.ए. अंतिम वर्ष के अंतर्गत
विषय – नृत्य (भरत नाट्यम)**

बी.ए. भाग (3) के लिये इस विषय में प्रायोगिक और सैद्धांतिक दो भाग होंगे। प्रायोगिक 50 अंक एवं सैद्धांतिक 100 अंक का होगा। इस हेतु 50-50 अंक के दो प्रश्नपत्र होंगे। प्रत्येक वर्ष के पूर्णांक कुल मिलाकर 150 अंक के होंगे।

क्र	विवरण	पूर्णांक	उत्तीर्णांक
1	सैद्धांतिक प्रथम प्रश्न पत्र	50	17
2	सैद्धांतिक द्वितीय प्रश्न पत्र	50	17
3	प्रायोगिक	50	17
योग		150	51

सैद्धांतिक (विस्तृत पाठ्यक्रम)

प्रथम प्रश्न पत्र

**शीर्षक – नृत्य का इतिहास एवं सामान्य अध्ययन
(पेपर कोड – 0287)**

1. नृत्य का इतिहास –
 1. राजपूत काल
 2. मुगल काल
 3. ब्रिटिश काल
 4. स्वतंत्र भारत में नृत्य (आधुनिक काल)
2. विभिन्न शास्त्रीय नृत्य प्रणालियों की संक्षिप्त जानकारी
 1. कुचिपूड़ी
 2. मोहिनीअट्टम
 3. मणिपुरी
 4. छारू
 5. सत्रिय
3. नवरस विवरण
4. भारतीय प्रेक्षागृहों की जानकारी (नाट्यशास्त्र के अनुसार)
त्रयस्त्र, चतस्र एवं विकृष्ट प्रेक्षागृह
5. लोकधर्मी नाट्य परंपरा – लोकनाट्य –
 1. यक्षगान
 2. तेरुकुतु
 3. पंडवानी
 - लोकनृत्य परिचय
 1. भांगड़ा
 2. कोलाट्टम
 3. कोरतिकुमि

सैद्धांतिक (विस्तृत पाठ्यक्रम)
द्वितीय प्रश्न पत्र
शीर्षक – शास्त्रीय नृत्य सिद्धान्त
(पेपर कोड – 0288)

1. ताण्डव और लास्य नृत्य का परिचय
2. नायक – नायिका भेद निरूपण
3. पादभेद– (1) चारी (2) स्थानक
4. भरतनाट्यम पद्धति के क्रमों (मार्गम का संक्षिप्त विवरण)
1. वर्णम् 2. कीर्तनम् 3. जावली 4. तिल्लाना 5. श्लोकम्
5. वरिष्ठ नृत्य कलाकार की संक्षिप्त जीवनी
1. श्रीमती रुक्मिणी अरुण्डेल 2. श्रीमती बाला सरस्वती

प्रायोगिक

1. मौखिक मुद्रा प्रदर्शन –
 - (1) असंयुक्त हस्त की शेष मुद्राओं (सर्पशीर्ष से त्रिशूल तक) का विनियोग (श्लोक सहित)
 - (2) जाति हस्त, (3) दशावतार हस्त
2. कार्यक्रम विभाग
 - (1) पंचजाति (तत्मेट्टी के अनुसार)
 - (2) अष्टपदी अथवा कीर्तनम्
 - (3) पदम् अथवा जावली
 - (4) देहाभ्यास, समग्र अङ्गुली संचालन

REVISED SYLLBUS

B. A. Part- I (Economics)

Subject : Micro Economics, Paper-I (Code: 0111)

UNIT 1

Introduction - Definitions Nature and scope of Economics, Methodology in Economics, Utility - Cardinal and Ordinal approaches, Indifference curve, Consumer's equilibrium, Giffin goods, Demand - Law of Demand, Elasticity of demand Consumer's surplus

UNIT 2

Theory of production and cost, Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale, Different concepts of cost and their interrelation, Equilibrium of the firm.

UNIT 3

Market structure-perfect and imperfect markets, Equilibrium of a firm-Perfect competition, Monopoly and price discrimination, Monopolistic competition, Duopoly, Oligopoly, controlled and administered prices

UNIT 4

Factor pricing-Marginal productivity theory of distribution, Euler's theorem, Theories of wage determination, wages and collective bargaining, wage differentials, Rent - Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory, Interest Classical and Keynesian Theories, Modern Theory, Profits - Innovation, Risk bearing and uncertainty theories

UNIT 5

Welfare economics: , What welfare economics is about ?, Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics, Concept and condition of Pareto optimality, New welfare economics: Kaldor-Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice: Bergson-Samuelson social welfare function, Prof. Amartya Sen's critique, Arrow impossibility theorem

References:

1. Bach, G. L. (1977) "Economics, " Prentice Hall of India, New Delhi.
2. Gauld, J.P. and Edward P. L. (1996), "Microeconomic Theory," Richard Irwin, Homewood

. 3. Henderson J. and R. E. Quandt (1980), "Microeconomic Theory : A Mathematical Approach", McGraw Hill, New Delhi.

4. Heathfield and Wibe (1987), " An Introduction to Cost and Production Functions", Macmillan. London.

5. Koutsoyiannis, A. (1990), " Modern Microeconomics" , Macmillan.

6. Lipsey, R. G. and K. A. Chrystal (1999) "Principles of Economics ", (9th Edition), Oxford University Press, Oxford. B.A.-Part-I (21) P

REVISED SYLLBUS

B. A. Part- I (Economics)

Subject : Indian Economy , Paper-II (Code: 0112)

UNIT 1

Pre and post independent Indian economy: A short introduction of economic policies of British India, State of economy at the time of independence, Planning exercise in India-Planning in India through different five Year Plans, The planning commission and NITI Aayog, Growth and development in pre-reform period, New Economic Reforms: Liberalization, Privatization and Globalization, Growth, development and structural change in post-reform period.

UNIT 2

Population and human development: Demographic trends and issues of education, health, malnutrition and migration. Growth and distribution: Trends and policies in poverty, inequality, unemployment and occupational distribution, International comparison in human development and poverty reduction

UNIT 3

Agriculture: Nature and importance, Trends in agriculture production and productivity, factors determining productivity, Land reforms, new agriculture strategies and green revolution, rural credit, Agricultural marketing, natural resources and infra-structure development: Performance, problems and policies, MUDRA yojana.

UNIT 4

Industry: Growth and productivity, Industrial policy and reforms, Growth and problems of small and cottage scale industries, Role of public sector enterprises in India's industrialization. Trends and performance in services.

UNIT 5

External Sector - Role of foreign trade, Trends in exports and imports, Composition and direction of India's foreign trade, Export promotion measures and the new trade policies, Recent macroeconomic scenario: National Income, investment, saving and inflation, Current macroeconomic policies and their impact, fiscal policies and monetary policy.

References

1. Uma Kapila, "Indian Economy : Performance and Policies," published by Academic Foundation.
2. Dutta and Sundram, "Indian Economy', S. Chand Publications.

3. Mishra and Puri, "Indian Economy," Himalaya Publishing House.
4. Economic Survey of India: various Issues, Published by Government of India.

REVISED SYLLBUS

B.A. Part- II (Economics)

Subject : Macro Economics, Paper-I (Code: 0181)

UNIT 1

National Income: Concept and measurement of national income, Economic welfare and national income, Social accounting. Circular flow of income, National income accounting, Green accounting Classical theory of employment, Say's law of market Keynesian theory of employment.

UNIT 2

Consumption Function - Average and marginal propensity to consume, Keynes's psychological law of consumption. Determinants of the consumption function. The saving function. The investments multiplier and its effectiveness, The investment Function - marginal efficiency of capital, Autonomous and induced investment. Saving and investment equality.

UNIT 3

Nature and Characteristics of trade cycle, Theories of trade cycle: Hawtrey's monetary theory, Hayek's over investment theory, Keynes's view on trade cycles, Schumpeter's theory of innovation, Samuelson and Hicks multiplier accelerator model, Control of trade cycle.

UNIT 4

International Trade - Inter-regional and international trade, Comparative advantage cost theory, Opportunity cost theory and Heckscher Ohlin theory, International trade and economic development, Tariffs & import quotas, Concept of optimum tariff. Balance of trade & balance of payment., Concept & components of BOP, Equilibrium & disequilibrium in BOP, Relative merits & demerits of devaluation, Foreign trade multiplier.

UNIT 5

Functions and objectives of international monetary fund, World Bank and World Trade Organization, International monetary reforms and India, Foreign trade in India recent change in the composition and direction of foreign trade, India's balance of payment, Export promotion and import substitution in India. Multinational Corporation and India.

BASIC READING LIST -

- Ackley, G. (1976) – “ Macro Economics; Theory and Policy,” Mcmillan Publishing Company, Newyork.
- Day, A.C.L. (1960) – “Outline of Monetary Economics,” Oxford University Press Oxford.
- Gupta, S.B. (1994)- “Monetary Economics,” S. Chand and Co., Delhi
- Heijdra, B.J. and F.V. Ploeg (2001) – “Foundations of Modern Macro-economics,” Oxford University Press, Oxford.
- Lewis, M.K. and P.D. Mizan (2000) –“ Monetary Economics, “ Oxford University Press, New Delhi.
- Shapiro, E. (1996) – “Macroeconomic Analysis,” Galgotia Publications, New Delhi .

READING LIST - - Ackley, G. (1976),” Macroeconomics : Theory and Policy”, Macmillan Publishing Company, New York. -

Day, A.C.L. (1960) –“ Outline of Monetary Economics,” Oxford University Press Oxford.

- Gupta, S.B. (1994)- “Monetary Economics,” S. Chand and Co., Delhi

- Heijdra, B.J. and F.V. Ploeg (2001) –“ Foundations of Modern Macro-economics, “ Oxford University Press, Oxford.

- Lewis, M.K. and P.D. Mizan (2000) - Monetary Economics, Oxford University Press, New Delhi.

- Shapiro, E. (1996) – “Macroeconomic Analysis,” Galgotia Publications, New Delhi.

- Dillard, D. (1960)- “The Economics of John Mayanand Keynes, “Crossby Lockwood and Sons, London.

- Hanson, A.H. (1953), “A Guide to Keynes, “ McGraw Hill, New York.

- Higgins, B. (1963), “Economic Development; Principles, Problems and Policies, “ Central Book Depot, Allahbad.

- Keynes, J.M. (1936), “The General Theory of Employment, Interest and Money,” Macmillan, London.

- Kindleberger, C.P. (1958), “Economic Development,” McGraw Hill Book company, New York.

Powelson, J.P.C. (1960), “ National Income and Flow of Funds Analysis,” McGraw Hill, New York.

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REVISED SYLLBUS

B.A. Part- II (Economics)

Subject : Money, Banking and Public Finance, Paper-II (Code: 0182)

UNIT 1

Basic concepts : Money - meaning and functions, Gresham's law; Quantity theory of money- Cash transaction and cash balance approaches; Value of Money, Inflation, deflation and reflation, types, causes and effects on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, Concept of demonetization.

UNIT 2

Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation, purpose and limitations; Liabilities and assets of banks; Evolution of commercial banking in India after independence; A critical appraisal of the progress of commercial banking after Nationalization, Functions of a central bank; Quantitative and qualitative methods of credit control; Bank rate policy; Open market operations; Variable reserve ratio and selective methods. Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.

UNIT 3

Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The Principle of maximum social advantage; Role of the government in economic activities ; Public expenditure - Meaning, classification and principles of public expenditure; Trends in public expenditure and causes of growth of public expenditure in India.

UNIT 4

Sources of Public revenue; taxation - Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes; Taxable capacity; Effects of taxation; Characteristics of a good tax system; Equity and Justice in Taxation, Major trends in tax revenue of the Central and State Government in India.

UNIT 5

Public debt and financial administration: Sources of public borrowing, Effects of public debt. Methods of debt redemption. The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

READING LIST -

- Ackley G. (1978), "Macroeconomics : Theory and Policy," Macmillan Publishing Co., New York.
- Bhargavas B.H. (1981), "The Theory and Working of Union Finance in India," Chaitanya Publishing House Allaybad.
- Gupta, S.B. (1994)," Monetary Economics", S. Chand & Company, New Delhi.
- Houghton. E.W. (Ed.) (1988), "Public Finance." Pengum, Battinore - Jha R. (1998), Modern Public Economics. Routledge, London.
- Mithani, D.M. (1981), "Modern Public Finance," Himalaya Publishing House, Mumbai.
- Musgrave, R.A. and P.B. Musgrave (1976)," Public Finance in Theory and Practice", McGraw Hill, Kogakusha, Tokyo.
- Shapiro, E. (1996), "Macroeconomics Analysis," Galgotia Publications, New Delhi.

ADDITIONAL READING LIST

- Day, A.C.L. (1960), "Outline of Monetary Economics, " Oxford University Press, Oxford.
- De Kock, M.H. (1960)," Central Banking." Staples Press, London.
- Due, J.E. (1963), "Government Finance," Irwin, Homewood.
- Government of India, "Economic Survey" (Annual), New Delhi
- Halm, G.N. (1955), "Monetary Theory," Asia Publishing House, New Delhi

REVISED SYLLBUS

B. A. Part- III (Economics)

Subject : Development and Environmental Economics, Paper-I (Paper Code:0242)

UNIT 1

Economic Growth and Development : Factor affecting economic growth (Labour, capital and technology), Developed and under developed Economy, Poverty-absolute & relative, Marxian model of Economic Growth, Mahalanobis Model of Economic Growth. Balanced and unbalanced growth.

UNIT 2

Problems of Population and growth pattern of population. Theory of demographic transition. Population, poverty and environment. Schumpeter's theory of economic growth, Theory of Big-Push, Nelson's theory of low-level income equilibrium trap , Theory of Critical minimum efforts ,

UNIT 3

Harrod and Domar growth model, Solow's model of economic growth, Meades Neo classical models, , Mrs. Joan Robinson's growth model , A. Lewis theory of unlimited supply of labour.

UNIT 4

Environment: Environmental and use, environmental disruption as an allocation, problem. valuation of environmental damages- land, water , air & forest , prevention control and abatement of pollution, choice of policy instruments in developing countries, environmental legislation, indicators of sustainable development, environmental accounting

UNIT 5

Concept of Intellectual Capital : Food Security, Education, Health & Nutrition, Role of agriculture in economic development, Land reforms, Efficiency & Productivity in Agriculture, new technology & Sustainable agriculture, Globalization & agriculture growth, the choice of technique appropriate technology & employment.

Reference :-

- 1.** Behrman, S. And T.N. Shrinivasan (1995) “Hand book of Development Economics,” Vol 1, 2, & 3 Elsevier; Amsterdam.
- 2.** Ghatak,s (1986) “An introduction to development Economics”, Allen & Elnein, London.
- 3.** Sen, A.K. (Ed.) 1990 “Growth Economics”, Penguin, Harmonds worth.
- 4.** Mehrotra, S. And J. Richard (1998), Development with a Human Face, Oxford University Press new Delhi.

REVISED SYLLBUS

B.A. Part- III (Economics)

Subject : Statistical Methods, Paper-II, (Paper Code: 0243)

UNIT 1 :-

Statistics : Definition of Statistics, Importance and Limitations of Statistics, Importance of Statistics in Economics, Statistical investigation, Census and sampling methods of statistical investigation, Statistical data, Collections of Data, Primary & Secondary Data.

UNIT 2

Measuring of Central Tendency: Mean, Median, Mode, measures of Skewness, Probability-basic concepts meaning and definitions

UNIT 3

Dispersion : Meaning of Dispersion, Methods of measuring Dispersion, Range, Quartiles Deviation ,Mean Deviation, Coefficient of Mean Deviation, Standard Deviation.

UNIT 4

Correlation Analysis : Meaning and types of correlation ,Degree of correlation, Coefficient of correlation-Karl Pearson's Method, Spearman's Rank Difference Method. Probable error and standard error.

UNIT 5

Index Number- Methods of constructing of Index Numbers, Fisher's methods, Dorbish-Bowles method, Paasches method, Laspeyres method, Consumer price index numbers, Reversal test, Circular Test, Time series analysis-Meaning, Components of time series, Measurement of long term trend by average method.

Reference :-

1. Shukla, S.M. and S.P. Sahay – "Quantitative Methods" Sahitya Bhawan Publication, Agra.
2. Agrawal, D.R., "Quantitative Methods", Vrinda Publications (P) Ltd.
3. Sancheti, D.C., " Quantitative Methods", Sultanchand and Sons, New Delhi.

4. Gupta, S.P. and others, "Qunatitative Techniques", Sultanchad and Sons, New Delhi.
5. मेहता एवं मदनानी, अर्थशास्त्र में प्रारंभिक गणित, लक्ष्मीनारायण अग्रवाल, आगरा-3
6. Dr. Amrendra, "An Introduction to Mathematical concepts in Economics", Pragtisheel Prakashan, New Delhi.

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B. A. – I

PSYCHOLOGY

Paper	Name of the Paper	Max. Marks	Duration
I	Basic Psychological Processes	50	3 hrs.
II.	Psychopathology	50	3 hrs.
III.	Practicum	50	4 Hrs.

PAPER - I

BASIC PSYCHOLOGICAL PROCESSES (Paper Code-0119)

M.M.:50

Note: This paper consists of five units. From each unit a minimum of two questions would be set and the candidates would be required to attempt one from the each unit.

UNIT-1 Introduction: Definition and Goals of psychology; Behaviouristic, Cognitive and Humanistic; Cross-cultural Perspective; Methods: Experimental, Observational, Interview, Questionnaire, and Case study.

UNIT-2 Biological bases of behaviour: Genes and Behaviour, The Nervous System: The Central Nervous System (C.N.S.), The Autonomic Nervous System (A.N.S.) and The Peripheral Nervous System (P.N.S.); Glands and Hormones; Emotions- Types and Bodily changes (internal and external).

UNIT-3 Sensory Perceptual Processes: Nature and Types of Sensation, Perception and Attention: Process, Definition, Types and Determinants; Principles of Perceptual Organization; Illusion: Nature and Types.

UNIT-4 Learning and Memory: Classical and Operant Conditioning- Basic Processes; Verbal and Observational Learning; Memory: Sensory (S.M.), Short-term (S.T.M.) and Long-term (L.T.M.); Forgetting: Process and Theories.

UNIT-5 Cognitive and Non-cognitive processes: Intelligence: Nature and Types; Motivation: Biogenic and Sociogenic Motives; Thinking process: Nature and Types. Personality: Nature and Determinants; Approaches to study personality: Trait and Type approaches; Assessment of Personality.

Reference:

1. सिंह, अरुण कुमार। सामान्य मनोविज्ञान। बनारसीदास प्रकाशन।
2. वर्मा, प्रीति। आधुनिक सामान्य मनोविज्ञान।
3. Baron, R.A. & Byrne, D.A. Understanding Behavior. Tokyo: Halt Sounders.
4. Zimbardo, P.G. Psychology. New York: Haper Collings College publishers.
5. Lefton, L. A. (1985). Psychology. Bosten-Allyn publishers.
6. Walser, A.L. (1997).

NEW CURRICULUM OF B.Sc. PART I

CHEMISTRY

The new curriculum will comprise of Three theory papers of 33, 33 and 34 marks each and practical work of 50 marks. The curriculum is to be completed in 180 working days as per the UGC norms & conforming to the directives of the Govt. of Chhattisgarh. The theory papers are of 60 hrs each duration and the practical work of 180 hrs duration.

PAPER I

INORGANIC CHEMISTRY

M.M.33

UNIT-I

A. ATOMIC STRUCTURE

Bohr's theory, its limitation and atomic spectrum of hydrogen atom. General idea of de-Broglie matter-waves, Heisenberg uncertainty principle, Schrödinger wave equation, significance of Ψ and Ψ^2 , radial & angular wave functions and probability distribution curves, quantum numbers, Atomic orbital and shapes of s, p, d orbitals, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.

B. PERIODIC PROPERTIES

Detailed discussion of the following periodic properties of the elements, with reference to s and p-block. Trends in periodic table and applications in predicting and explaining the chemical behavior.

- a) Atomic and ionic radii,
- b) Ionization enthalpy,
- c) Electron gain enthalpy,
- d) Electronegativity, Pauling's, Mulliken's, Allred Rochow's scales.
- e) Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.

UNIT-II

CHEMICAL BONDING I

Ionic bond: Ionic Solids - Ionic structures, radius ratio & co-ordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy Born- Haber cycle, Solvation

energy and solubility of ionic solids, polarising power & polarisability of ions, Fajans rule, Ionic character in covalent compounds: Bond moment and dipole moment, Percentage ionic character from dipole moment and electronegativity difference, Metallic bond-free electron, Valence bond & band theories.

UNIT-III

CHEMICAL BONDING II

Covalent bond: Lewis structure, Valence bond theory and its limitations, Concept of hybridization, Energetics of hybridization, equivalent and non-equivalent hybrid orbitals. Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H_2O , NH_3 , PCl_3 , PCl_5 , SF_6 , H_3O^+ , SF_4 , ClF_3 , and ICl_2^- Molecular orbital theory. Bond order and bond strength, Molecular orbital diagrams of diatomic and simple polyatomic molecules N_2 , O_2 , F_2 , CO , NO .

UNIT-IV

A. s-BLOCK ELEMENTS

General concepts on group relationships and gradation properties, Comparative study, salient features of hydrides, solvation & complexation tendencies including their function in biosystems and introduction to alkyl & aryls, Derivatives of alkali and alkaline earth metals

B. p-BLOCK ELEMENTS

General concepts on group relationships and gradation properties. Halides, hydrides, oxides and oxyacids of Boron, Aluminum, Nitrogen and Phosphorus. Boranes, borazines, fullerenes, graphene and silicates, interhalogens and pseudohalogens.

UNIT-V

A CHEMISTRY OF NOBLE GASES

Chemical properties of the noble gases, chemistry of xenon, structure, bonding in xenon compounds

B. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS (H_2S SCHEME)

Basic principles involved in the analysis of cations and anions and solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after Group II.

REFERENCE BOOKS:

1. Lee, J. D. Concise Inorganic Chemistry ELBS, 1991.
2. Douglas, B.E. and McDaniel, D.H. Concepts & Models of Inorganic Chemistry Oxford, 1970
3. Atkins, P.W. & Paula, J. Physical Chemistry, 10th Ed., Oxford University Press, 2014.
4. Day, M.C. and Selbin, J. Theoretical Inorganic Chemistry, ACS Publications, 1962.
5. Rodger, G.E. Inorganic and Solid State Chemistry, Cengage Learning India Edition, 2002.
6. Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Milestone Publishers/ Vishal Publishing Co.; 33rd Edition 2016
7. Madan, R. D. Modern Inorganic Chemistry, S Chand Publishing, 1987.

PAPER: II

ORGANIC CHEMISTRY

UNIT-I BASICS OF ORGANIC CHEMISTRY

Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; Dipole moment. Electrophiles and Nucleophiles; Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes. Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.

UNIT-II INTRODUCTION TO STEREOCHEMISTRY

Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Diastereoisomers, meso compounds, Relative and absolute configuration: Fischer, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose and threose, D/L, d/l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P rules), R/S nomenclature. Geometrical isomerism: cis–trans, syn-anti and E/Z notations.

UNIT-III CONFORMATIONAL ANALYSIS OF ALKANES

Conformational analysis of alkanes, ethane, butane, cyclohexane and sugars. Relative stability and Energy diagrams. Types of cycloalkanes and their relative stability, Baeyer strain theory: Theory of strainless rings, Chair, Boat and Twist boat conformation of cyclohexane with energy diagrams; Relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.

UNIT-IV CHEMISTRY OF ALIPHATIC HYDROCARBONS

A. Carbon-Carbon sigma (σ) bonds

Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reaction, Free radical substitutions: Halogenation-relative reactivity and selectivity.

B. Carbon-Carbon Pi (π) bonds:

Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations.

Reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff/ Anti - Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation). 1,2-and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene.

Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.

UNIT-V AROMATIC HYDROCARBONS

Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.

REFERENCE BOOKS:

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd.(Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. & Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London, 1994.

5. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
6. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
7. Organic Chemistry, Paula Y. Bruice, 2nd Edition, Prentice-Hall, International Edition (1998).
8. A Guide Book of Reaction Mechanism by Peter Sykes.

PAPER - III

PHYSICAL CHEMISTRY

M.M.34

UNIT-I

MATHEMATICAL CONCEPTS FOR CHEMIST

Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications.

UNIT-II

GASEOUS STATE CHEMISTRY

Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thompson effect, Liquification of Gases.

Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behaviour. van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.

UNIT-III

A. LIQUID STATE CHEMISTRY

Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension.

B. COLLOIDS and SURFACE CHEMISTRY

Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotrophy, Application of colloids.

Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET.

UNIT-IV

SOLID STATE CHEMISTRY

Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.

UNIT-V

A. CHEMICAL KINETICS

Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions.

Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non mathematical concept of transition state theory.

B. CATALYSIS

Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristic of catalyst, Enzyme catalysed reactions, Micellar catalysed reactions, Industrial applications of Catalysis.

REFERENCE BOOKS:

1. Atkins, P. W. & Paula, J. de Atkin's Physical Chemistry 10th Ed., Oxford University Press (2014).

- Ball, D. W. Physical Chemistry Thomson Press, India (2007).
- Castellan, G. W. Physical Chemistry 4th Ed. Narosa (2004).
- Mortimer, R. G. Physical Chemistry 3rd Ed. Elsevier: NOIDA, UP (2009).
- Engel, T. & Reid, P. Physical Chemistry 3rd Ed. Pearson (2013).
- Puri, B.R., Sharma, L. R. and Pathania, M.S., Principles of Physical Chemistry, Vishal Publishing Co., 47th Ed. (2016).
- Bahl, A., Bahl, B.S. and Tuli, G.D. Essentials of Physical Chemistry, S Chand Publishers (2010).
- Rakshit P.C., Physical Chemistry, Sarat Book House Ed. (2014).
- Singh B., Mathematics for Chemist, Pragati Publications.

PAPER - IV LABORATORY COURSE

INORGANIC CHEMISTRY

A. Semi-micro qualitative analysis (using H₂S or other methods) of mixtures - not more than four ionic species (two anions and two cations, excluding interfering, insoluble salts) out of the following:

Cations : NH₄⁺, Pb²⁺, Bi³⁺, Cu²⁺, Cd²⁺, Fe³⁺, Al³⁺, Co²⁺, Ni²⁺, Mn²⁺, Zn²⁺, Ba²⁺, Sr²⁺, Ca²⁺, Na⁺
Anions : CO₃²⁻, S²⁻, SO₃²⁻, S₂O₃²⁻, NO₂⁻, CH₃COO⁻, Cl⁻, Br⁻, I⁻, NO₃⁻, SO₄²⁻

(Spot tests may be carried out wherever feasible)

B. Acid-Base Titrations

- Standardization of sodium hydroxide by oxalic acid solution.
- Determination of strength of HCl solution using sodium hydroxide as intermediate.
- Estimation of carbonate and hydroxide present together in mixture.
- Estimation of carbonate and bicarbonate present together in a mixture.
- Estimation of free alkali present in different soaps/detergents

C. Redox Titrations

- Standardization of KMnO₄ by oxalic acid solution.
- Estimation of Fe(II) using standardized KMnO₄ solution.
- Estimation of oxalic acid and sodium oxalate in a given mixture.
- Estimation of Fe(II) with K₂Cr₂O₇ using internal (diphenylamine, anthranilic acid) and external indicator.

D. Iodo / Iodimetric Titrations

- Estimation of Cu(II) and K₂Cr₂O₇ using sodium thiosulphate solution iodimetrically.
- Estimation of (a) arsenite and (b) antimony iodimetrically.

- Estimation of available chlorine in bleaching powder iodometrically.
- Estimation of Copper and Iron in mixture by standard solution of $K_2Cr_2O_7$ using sodium thiosulphate solution as titrants.

ORGANIC CHEMISTRY

1. Demonstration of laboratory Glasswares and Equipments.
2. Calibration of the thermometer. $80^\circ-82^\circ$ (Naphthalene), $113.5^\circ-114^\circ$ (Acetanilide), $132.5^\circ-133^\circ$ (Urea), 100° (Distilled Water).
3. Purification of organic compounds by crystallization using different solvents.
 - Phthalic acid from hot water (using fluted filter paper and stemless funnel).
 - Acetanilide from boiling water.
 - Naphthalene from ethanol.
 - Benzoic acid from water.
4. Determination of the melting points of organic compounds.
Naphthalene $80^\circ-82^\circ$, Benzoic acid $121.5^\circ-122^\circ$, Urea $132.5^\circ-133^\circ$ Succinic acid $184.5^\circ-185^\circ$, Cinnamic acid $132.5^\circ-133^\circ$, Salicylic acid $157.5^\circ-158^\circ$, Acetanilide $113.5^\circ-114^\circ$, m-Dinitrobenzene 90° , p-Dichlorobenzene 52° , Aspirin 135° .
5. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds.
 - Urea – Cinnamic acid mixture of various compositions (1:4, 1:1, 4:1).
6. Determination of boiling point of liquid compounds. (boiling point lower than and more than $100^\circ C$ by distillation and capillary method).
 - Ethanol 78° , Cyclohexane 81.4° , Toluene 110.6° , Benzene 80° .
- i. Distillation (Demonstration)
 - Simple distillation of ethanol-water mixture using water condenser.
 - Distillation of nitrobenzene and aniline using air condenser.
- ii. Sublimation
 - Camphor, Naphthalene, Phthalic acid and Succinic acid.
- iii. Decolorisation and crystallization using charcoal.
 - Decolorisation of brown sugar with animal charcoal using gravity filtrations crystallization and decolorisation of impure naphthalene (100 g of naphthalene mixed with 0.3 g of Congo red using 1 g of decolorizing carbon) from ethanol.
7. Qualitative Analysis

Detection of elements (N, S and halogens) and functional groups (Phenolic, Carboxylic, Carbonyl, Esters, Carbohydrates, Amines, Amides, Nitro and Anilide) in simple organic compounds.

PHYSICAL CHEMISTRY

1. Surface tension measurements.
 - Determine the surface tension by (i) drop number (ii) drop weight method.
 - Surface tension composition curve for a binary liquid mixture.
2. Viscosity measurement using Ostwald's viscometer.
 - Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature.
 - Study of the variation of viscosity of sucrose solution with the concentration of solute.
 - Viscosity Composition curve for a binary liquid mixture.
3. Chemical Kinetics
 - To determine the specific rate of hydrolysis of methyl/ethyl acetate catalysed by hydrogen ions at room temperature.
 - To study the effect of acid strength on the hydrolysis of an ester.
 - To compare the strengths of HCl & H₂SO₄ by studying the kinetics of hydrolysis of ethyl acetate.
4. Colloids
 - To prepare colloidal solution of silver nanoparticles (reduction method) and other metal nanoparticles using capping agents.

Note: Experiments may be added/ deleted subject to availability of time and facilities

PRACTICAL EXAMINATION

05 Hrs.
M.M. 50

Three experiments are to be performed

1. Inorganic Mixture Analysis, four radicals two basic & two acid (excluding insoluble, Interfering & combination of acid radicals) OR Two Titrations (Acid-Bases, Redox and Iodo/Iodimetry)

12 marks

2. Detection of functional group in the given organic compound and determine its MPt/BPt.

8 marks

O R

Crystallization of any one compound as given in the prospectus along with the determination of mixed MPt.

O R

Decolorisation of brown sugar along with sublimation of camphor/ Naphthlene.

3. Any one physical experiment that can be completed in two hours including calculations.

14 marks

4. Viva

10 marks

5. Sessionals

06 marks

In case of Ex-Students two marks will be added to each of the experiments

REFERENCE TEXT:

1. Mendham, J., A. I. Vogel's Quantitative Chemical Analysis 6th Ed., Pearson, 2009.
2. Ahluwalia, V. K., Dhingra, S. and Gulati, A. College practical Chemistry, University Press.
3. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
4. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
6. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
7. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).

NEW CURRICULUM OF B.Sc. PART II

CHEMISTRY

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. each duration and practical work of 180 hrs duration.

Paper – I INORGANIC CHEMISTRY 60 Hrs., Max Marks 33

UNIT-I

CHEMISTRY OF TRANSITION SERIES ELEMENTS

Transition Elements: Position in periodic table, electronic configuration, General Characteristics, viz., atomic and ionic radii, variable oxidation states, ability to form complexes, formation of coloured ions, magnetic moment μ_{so} (spin only) and μ_{eff} and catalytic behaviour. General comparative treatment of 4d and 5d elements with their 3d analogues with respect to ionic radii, oxidation states and magnetic properties.

UNIT-II

A. Oxidation and Reduction: Redox potential, electrochemical series and its applications, Principles involved in extraction of the elements.

B. COORDINATION COMPOUNDS: Werner's theory and its experimental verification, IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelates, polynuclear complexes.

UNIT-III

COORDINATION CHEMISTRY

Valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, Crystal field splitting and stabilization energy, measurement of $10 Dq$ (Δ_o), CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of $10 Dq$ (Δ_o , Δ_t). Octahedral vs. tetrahedral coordination.

UNIT-IV

A. CHEMISTRY OF LANTHANIDE ELEMENTS

Electronic structure, oxidation states and ionic radii and lanthanide contraction, complex formation, occurrence and isolation, lanthanide compounds.

B. CHEMISTRY OF ACTINIDES

General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from uranium, similarities between the later actinides and the later lanthanides

UNIT-V

A. ACIDS BASES : Arrhenius, Bronsted-Lowry, conjugate acids and bases, relative strengths of acids and bases, the Lux-flood, solvent system and Lewis concepts of acids and bases.

B. NON-AQUEOUS SOLVENTS

.Physical properties of a solvent, types of solvents and their general characteristics, reaction in non-aqueous solvents with reference to liquid ammonia and liquid sulphur dioxide, HF, H₂SO₄ , Ionic liquids.

REFERENCE BOOKS

1. Basic Inorganic Chemistry, F. A. Cotton, G. Wilkinson and P. L. Gaus, Wiley
2. Concise Inorganic Chemistry, J. D. Lee, ELBS
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. Mc Daniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D. E. Shriver, P. W. Atkins and C. H. Langford, Oxford.
5. Inorganic Chemistry, W. W. Porterfield, Addison – Wiley.
6. Inorganic Chemistry, A. G. Sharp, ELBS.
7. Inorganic Chemistry, G. L. Miessler and D. A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satya Prakash.
9. Advanced Inorganic Chemistry, Agarwal and Agarwal
10. Advanced Inorganic Chemistry, Puri, Sharma, S. Naginchand
11. Inorganic Chemistry, Madan, S. Chand
12. Aadhunik Akarbanic Rasayan, A. K. Shrivastav & P. C. Jain, Goel Pub
13. Uchchattar Akarbanic Rasayan, satya Prakash & G. D. Tuli, Shyamal Prakashan
14. Uchchattar Akarbanic Rasayan, Puri & Sharma
15. Selected topic in Inorganic Chemistry by Madan Malik & Tuli, S. Chand.

UNIT-I

CHEMISTRY OF ORGANIC HALIDES

Alkyl halides: Methods of preparation, nucleophilic substitution reactions – S_N1 , S_N2 and S_Ni mechanisms with stereochemical aspects and effect of solvent etc.; nucleophilic substitution, elimination reactions.

Aryl halides: Preparation, including preparation from diazonium salts, Nucleophilic Aromatic Substitution; S_NAr , Benzyne mechanism. Relative reactivity of alkyl, allyl/benzyl, vinyl and aryl halides towards nucleophilic substitution reactions.

UNIT-II

ALCOHOLS

- A. Alcohols: Nomenclature, preparation, properties and relative reactivity of 1° , 2° , 3° alcohols, Bouvaelt-Blanc Reduction for the preparation of alcohols, Dihydric alcohols – methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [$Pb(OAc)_4$ and HIO_4] and pinacol-pinacolone rearrangement.
- B. Trihydric alcohols - Nomenclature, methods of formation, chemical reactions of glycerol.

PHENOLS

- A. Structure and bonding in phenols, physical properties and acidic character, Comparative acidic strength of alcohols and phenols, acylation and carboxylation.
- B. Mechanism of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Hauben-Hoesh reaction, Lederer-Manasse reaction and Reimer-Tiemann reaction.

UNIT-III

ALDEHYDES AND KETONES

- A. Nomenclature, structure and reactivity of carbonyl group. General methods of preparation of aldehydes and ketones.
- Mechanism of nucleophilic addition to carbonyl groups: Benzoin, Aldol, Perkin and Knoevenagel condensation. Condensation with ammonia and its derivatives, Wittig reaction, Mannich reaction, Beckmann and Benzil- Benzilic rearrangement.
- B. Use of acetate as protecting group, Oxidation of aldehydes, Baeyer-Villiger oxidation of ketones, Cannizzaro reaction, MPV, Clemmensen reduction, Wolf-Kishner reaction, $LiAlH_4$ and $NaBH_4$ reduction. Halogenation of enolizable ketones, An introduction to α,β -unsaturated aldehydes and

ketones.

UNIT-IV

A. CARBOXYLIC ACIDS

Preparation, Structure and bonding, Physical and chemical properties including, acidity of carboxylic acids, effects of substituents on acid strength, Hell-Volhard Zeilinsky reaction. Reduction of carboxylic groups, Mechanism of decarboxylation.

Di carboxylic acids: Methods of formation and effect of heat and dehydrating agents, Hydroxyacids.

B. CARBOXYLIC ACID DERIVATIVES

Structure of acid chlorides, esters, amides and acid anhydrides, Relative stability of acyl derivatives. Physical properties, inter-conversion of acid derivatives by nucleophilic acyl substitution.

Mechanism of acid and base catalyzed esterification and hydrolysis.

UNIT-V

ORGANIC COMPOUNDS OF NITROGEN

A. Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes. Mechanism of nucleophilic substitution in nitroarenes and their reduction in acidic, neutral and alkaline medium.

B. Reactivity, structure and nomenclature of amines, physical properties. Stereochemistry of amines. Separation of mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl and aryl amines (reduction of nitro compounds and nitriles), reductive amination of aldehydic and ketonic compounds. Gabriel-Phthalimide reaction, Hofmann-Bromamide reaction, Reactions of amines, electrophilic aromatic substitution of aryl amines, Reaction of amines with nitrous acid. Synthetic transformations of aryl diazonium salts, Azo coupling.

REFERENCE BOOKS

1. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
2. Organic Chemistry, L. G. Wade Jr. Prentice Hall.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Organic Chemistry, Vol I, II, III S. M. Mukherjee, S. P. Singh and R. P. Kapoor, Wiley Easters (New Age).
5. Organic Chemistry, F. A. Carey, McGraw Hill.
6. Introduction to Organic Chemistry, Struiweisser, Heathcock and Kosover, Macmillan.
7. Organic Chemistry, P. L. Soni.

8. Organic Chemistry, Bahl and Bahl.
9. Organic Chemistry, Joginder Singh.
10. Carbanic Rasayan, Bahl and Bahl.
11. Carbanic Rasayan, R. N. Singh, S. M. I. Gupta, M. M. Bakidia & S. K. Wadhwa.
12. Carbanic Rasayan, Joginder Singh.

Paper – III
PHYSICAL CHEMISTRY

60 Hrs., Max Marks 34

UNIT-I

A. THERMODYNAMICS-I

Intensive and extensive variables; state and path functions; isolated, closed and open systems; Zeroth law of thermodynamics. First law: Concept of heat, work, internal energy and statement of first law; enthalpy, Relation between heat capacities, calculations of q , w , U and H for reversible, irreversible and free expansion of gases under isothermal and adiabatic conditions. Joule-Thompson expansion, inversion temperature of gases, expansion of ideal gases under isothermal and adiabatic condition

B. THERMO CHEMISTRY

Thermochemistry, Laws of Thermochemistry, Heats of reactions, standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, effect of temperature (Kirchhoff's equations) and pressure on enthalpy of reactions, Adiabatic flame temperature, explosion temperature.

UNIT-II

A. THERMODYNAMICS-II

Second Law of Thermodynamics: Spontaneous process, Second law, Statement of Carnot cycle and efficiency of heat engine, Carnot's theorem, thermodynamic state of temperature.

Concept of entropy: Entropy change in a reversible and irreversible process, entropy change in isothermal reversible expansion of an ideal gas, entropy change in isothermal mixing of ideal gases, physical signification of entropy, Molecular and statistical interpretation of entropy.

- B.** Gibbs and Helmholtz free energy, variation of G and A with pressure, volume, temperature, Gibbs-Helmholtz equation, Maxwell relations, Elementary idea of Third law of Thermodynamics, concept of residual entropy, calculation of absolute entropy of molecule.

UNIT III

A CHEMICAL EQUILIBRIUM

Criteria of thermodynamic equilibrium, degree of advancement of reaction, chemical equilibria in ideal gases. Concept of Fugacity, Thermodynamic derivation of relation between Gibbs free energy of reaction and reaction quotient. Coupling of exergonic and endergonic reactions. Equilibrium constants and their quantitative dependence on temperature, pressure and concentration. Thermodynamic derivation of relations between the various equilibrium constants K_p , K_c and K_x . Le Chatelier principle (quantitative treatment). Equilibrium between ideal gas and a pure condensed phase.

B IONIC EQUILIBRIA

Ionization of weak acids and bases, pH scale, common ion effect; dissociation constants of mono protic acids (exact treatment). Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

UNIT-IV

PHASE EQUILIBRIUM

A. Phase rule, Phase, component and degree of freedom, derivation of Gibbs phase rule, Clausius-Claperon equation and its applications to Solid-Liquid, Liquid-Vapor and solid-Vapor, limitation of phase rule, applications of phase rule to one component system: Water system and sulphur system.

Application of phase rule to two component system: Pb-Ag system, desilverization of lead, Zn-Mg system Ferric chloride-water system, congruent and incongruent, melting point and eutectic point.

Three component system: Solid solution liquid pairs.

B. Nernst distribution law, Henry's law, application, solvent extraction

UNIT V

PHOTOCHEMISTRY

Characteristics of electromagnetic radiation, Interaction of radiation with matter, difference between thermal and photochemical processes, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry: Grothus-Drapper law, Stark-Einstein law, quantum yield, actinometry, examples of low and high quantum yields, Photochemical equilibrium and the differential rate of photochemical reactions, Quenching, Role of photochemical reaction in biochemical process.

Jablonski diagram depicting various process occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), photosensitized reactions, energy transfer processes {simple examples}, photostationary states, Chemiluminescence.

REFERENCE BOOKS

1. Physical Chemistry, G. M. Barrow, International student edition, McGraw Hill.
2. University General Chemistry, C. N. R. Rao, Macmillan.
3. Physical Chemistry, R. A. Alberty, Wiley Eastern.
4. The elements of physical chemistry, Wiley Eastern.
5. Physical Chemistry through problems, S. K. Dogra & S. Dogra, Wiley Eastern.
6. Physical Chemistry, B. D. Khosla,.
7. Physical Chemistry, Puri & Sharma.
8. Bhautik Rasayan, Puri, Sharma and Pathania, Vishal Publishing Company.
9. Bhautik Rasayan, P. L. Soni.
10. Bhautik Rasayan, Bahl and Tuli.
11. Physical Chemistry, R. L. Kapoor, Vol I-IV .
12. Chemical kinetics, K. J. Laidler, Pearson Educations, New Delhi (2004).

Paper –IV

LABORATORY COURSE

INORGANIC CHEMISTRY

Qualitative semimicro analysis of mixtures containing 5 radicals. Emphasis should be given to the understanding of the chemistry of different reactions. The following radicals are suggested:

CO_3^{2-} , NO_2^- , S^{2-} , SO_3^{2-} , $\text{S}_2\text{O}_3^{2-}$, CH_3COO^- , F^- , Cl^- , Br^- , I^- , NO_3^- , BO_3^{3-} , $\text{C}_2\text{O}_4^{2-}$, PO_4^{3-} , NH_4^+ , K^+ , Pb^{2+} , Cu^{2+} , Cd^{2+} , Bi^{3+} , Sn^{2+} , Sb^{3+} , Fe^{3+} , Al^{3+} , Cr^{3+} , Zn^{2+} , Mn^{2+} , Co^{2+} , Ni^{2+} , Ba^{2+} , Sr^{2+} , Ca^{2+} , Mg^{2+} .

Mixtures should preferably contain one interfering anion, or insoluble component (BaSO_4 , SrSO_4 , PbSO_4 , CaF_2 or Al_2O_3) or combination of anions e.g. CO_3^{2-} and SO_3^{2-} , NO_2^- and NO_3^- , Cl^- , Br^- , and I^- .

Volumetric analysis

- (a) Determination of acetic acid in commercial vinegar using NaOH.
- (b) Determination of alkali content-antacid tablet using HCl.

- (c) Estimation of calcium content in chalk as calcium oxalate by permanganometry.
- (d) Estimation of hardness of water by EDTA.
- (e) Estimation of ferrous & ferric by dichromate method.
- (f) Estimation of copper using thiosulphate.
- Principles involved in chromatographic separations. Paper chromatographic separation of following metal ions: i. Ni (II) and Co (II) ii. Fe (III) and Al (III)

ORGANIC CHEMISTRY

- Detection of elements (X, N, S).
- Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, nitro, amine, amide, and carbonyl compounds, carbohydrates)
- Preparation of Organic Compounds:
 - (i) m-dinitrobenzene, (ii) Acetanilide, (iii) Bromo/Nitro-acetanilide, (iv) Oxidation of primary alcohols-Benzoic acid from benzylalcohol, (v) azo dye.

PHYSICAL CHEMISTRY

Transition Temperature

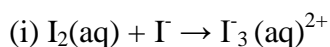
- Determination of the transition temperature of the given substance by thermometric/dilatometric method (e.g. $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ / $\text{SrBr}_2 \cdot 2\text{H}_2\text{O}$).

Thermochemistry

- Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution or enthalpy of neutralization).
- Determination of heat capacity of the calorimeter and enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
- To determine the solubility of benzoic acid at different temperature and to determine ΔH of the dissolution process.
- To determine the enthalpy of neutralization of a weak acid/ weak base versus strong base/ strong acid and determine the enthalpy of ionization of the weak acid/ weak base.
- To determine the enthalpy of solution of solid calcium chloride and calculate the lattice energy of calcium chloride from its enthalpy data using Born Haber cycle.

Phase Equilibrium

- To study the effect of a solute (e.g. NaCl, Succinic acid) on the critical solution temperature of two partially miscible liquids (e.g. phenol-water system) and to determine the concentration of that solute in the given phenol-water system.
- To construct the phase diagram of two component system (e.g. diphenylamine–benzophenone) by cooling curve method.
- Distribution of acetic/ benzoic acid between water and cyclohexane.
- Study the equilibrium of at least one of the following reactions by the distribution method:



Molecular Weight Determination

Determination of molecular weight by Rast Camphor and Landsburger method.

Note: Experiments may be added/ deleted subject to availability of time and facilities.

Reference Books

1. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. Practical Organic Chemistry, 5th Ed. Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000). 22
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011). Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
6. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York

Hrs.5

PRACTICAL EXAMINATION

M.M.50

Three Experiments are to be performed.

1. Inorganic – Qualitative semimicro analysis of mixtures. **12 marks**

OR

One experiment from synthesis and analysis by preparing the standard solution.

2. (a) Identification of the given organic compound & determine its M.Pt./B.Pt.

6 marks

(b) Determination of R_f value and identification of organic compounds by paper chromatography.

6 marks

3. Any one physical experiment that can be completed in two hours including calculations.

12 marks

4. Viva

10 marks

5. Sessional

04 marks

In case of Ex-Students one marks will be added to each of the experiment.

NEW CURRICULUM OF B.Sc. PART III

CHEMISTRY

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. each duration and practical work of 180 hrs duration.

Paper – I **INORGANIC CHEMISTRY** **60 Hrs., Max Marks 33**

UNIT-I

METAL-LIGAND BONDING IN TRANSITION METAL COMPLEXES

(A) Limitations of valence bond theory, Limitation of Crystal Field Theory, Application of CFSE, tetragonal distortions from octahedral geometry, Jahn–Teller distortion, square planar geometry. Qualitative aspect of Ligand field and MO Theory.

(B) Thermodynamic and kinetic aspects of metal complexes. A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes, Trans- effect, theories of trans effect. Mechanism of substitution reactions of square planar complexes.

UNIT-II

MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES

Types of magnetic behavior, methods of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of $\mu_{\text{so (spin only)}}$ and μ_{eff} values, orbital contribution to magnetic moments, application of magnetic moment data for 3d metal complexes.

Electronic spectra of Transition Metal Complexes.

Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, spectro-chemical series. Orgel-energy level diagram for d^1 and d^2 states, discussion of the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complex ion.

UNIT-III

ORGANOMETALLIC CHEMISTRY

Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18-electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.

Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT. π -acceptor behavior of CO (MO diagram of CO to be discussed), Zeise's salt: Preparation and structure.

Catalysis by Organometallic Compounds –

Study of the following industrial processes and their mechanism :

1. Alkene hydrogenation (Wilkinsons Catalyst)
2. Polymeration of ethane using Ziegler – Natta Catalyst

UNIT-IV

BIOINORGANIC CHEMISTRY

Essential and trace elements in biological processes, Excess and deficiency of some trace metals, Toxicity of some metal ions (Hg, Pb, Cd and As), metalloporphyrins with special reference to hemoglobin and myoglobin. Biological role of alkali and alkaline earth metals with special reference to Ca^{2+} and Mg^{2+} , nitrogen fixation.

UNIT-V

HARD AND SOFT ACIDS AND BASES (HSAB) Classification of acids and bases as hard

and soft. Pearson's HSAB concept, acid-base strength and hardness and softness. Symbiosis, Applications of HSAB principle.

INORGANIC POLYMERS

Types of inorganic polymers, comparison with organic polymers, synthesis, structural aspects and applications of silicones. Silicates, phosphazenes and polyphosphate.

REFERENCE BOOKS

1. Basic Inorganic Chemistry, F. A. Cotton, G. Wilkinson and P. L. Gaus, Wiley.
2. Concise Inorganic Chemistry, J. D. Lee, ELBS.
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. Mc Daniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D. E. Shriver, P. W. Atkins and C. H. Langford, Oxford.
5. Inorganic Chemistry, W. W. Porterfield, Addison – Wiley.
6. Inorganic Chemistry, A. G. Sharp, ELBS.
7. Inorganic Chemistry, G. L. Miessler and D. A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satya Prakash.
9. Advanced Inorganic Chemistry, Agarwal and Agarwal.
10. Advanced Inorganic Chemistry, Puri, Sharma, S. Naginchand.
11. Inorganic Chemistry, Madan, S. Chand.
12. Aadhunik Akarbanic Rasayan, A. K. Shrivastav & P. C. Jain, Goel Pub.
13. Uchchattar Akarbanic Rasayan, satya Prakash & G. D. Tuli, Shyamal Prakashan.
14. Uchchattar Akarbanic Rasayan, Puri & Sharma.
15. Selected topic in Inorganic Chemistry by Madan Malik & Tuli, S. Chand.

UNIT-I

HETEROCYCLIC COMPOUNDS

Classification and nomenclature, Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Synthesis, reactions and mechanism of substitution reactions of: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole (Fischer indole synthesis and Madelung synthesis), Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner-Miller synthesis, Bischler-Napieralski reaction, Pictet- Spengler reaction, Pomeranz-Fritsch reaction).

UNIT II

A. ORGANOMETALLIC REAGENT

Organomagnesium compounds: Grignard reagents formation, structure and chemical reactions.

Organozinc compounds: formation and chemical reactions.

Organolithium compounds: formation and chemical reactions.

B. ORGANIC SYNTHESIS VIA ENOLATES

Active methylene group, alkylation of diethylmalonate and ethyl acetoacetate, Synthesis of ethyl acetoacetate: The Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. Robinson annulations reaction.

UNIT-III

BIOMOLECULES

A. CARBOHYDRATES

Occurrence, classification and their biological importance. Monosaccharides: relative and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani Fischer synthesis and Ruff degradation; Disaccharides – Structural comparison of maltose, lactose and sucrose. Polysaccharides – Elementary treatment of starch and cellulose.

B. AMINO ACIDS, PROTEINS AND NUCLEIC ACIDS

Classification and Nomenclature of amino acids, Configuration and acid base properties of amino acids, Isoelectric Point, Peptide bonds, Protein structure, denaturation/ renaturation, Constituents of nucleic acid, DNA, RNA nucleoside, nucleotides, double helical structure of DNA.

UNIT-IV

SYNTHETIC POLYMERS

A. Addition or chain growth polymerization, Free radical vinyl polymerization, Ziegler-Natta polymerization, Condensation or Step growth polymerization, polyesters, polyamides, phenols- formaldehyde resins, urea-formaldehyde resins, epoxy resins and polyurethanes, natural and synthetic rubbers.

B. SYNTHETIC DYES

Colour and constitution (Electronic Concept). Classification of Dyes. Chemistry of dyes. Chemistry and synthesis of Methyl Orange, Congo Red, Malachite Green, Crystal Violet, phenolphthalein, fluorescein, Alizarine and Indigo.

UNIT-V

A. INFRA-RED SPECTROSCOPY

Basic principle, IR absorption Band their position and intensity, IR spectra of organic compounds.

B. UV-VISIBLE SPECTROSCOPY

Beer Lambert's law, effect of Conjugation, Types of electronic transitions λ_{\max} , Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption Visible spectrum and colour.

C. NMR SPECTROSCOPY

Basic principles of Proton Magnetic Resonance, Tetramethyl silane (TMS) as internal standard, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant (J); Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple organic compounds. ¹³CMR spectroscopy: Principle and applications.

REFERENCE BOOKS

1. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
2. Organic Chemistry, L. G. Wade Jr. Prentice Hall.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Organic Chemistry, Vol I, II, III S. M. Mukherjee, S. P. Singh and R. P. Kapoor, Wiley Easters (New Age).
5. Organic Chemistry, F. A. Carey, McGraw Hill.
6. Introduction to Organic Chemistry, Struiweisser, Heathcock and Kosover, Macmillan.
7. Acheson, R.M. Introduction to the Chemistry of Heterocyclic compounds, John Wiley & Sons (1976).
8. Graham Solomons, T.W. Organic Chemistry, John Wiley & Sons, Inc.
9. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning IndiaEdition, 2013.
10. Kalsi, P. S. Textbook of Organic Chemistry 1st Ed., New Age International (P) Ltd. Pub.
11. Clayden, J.; Greeves, N.; Warren, S.; Wothers, P.; Organic Chemistry, Oxford University Press.

UNIT-I

QUANTUM MECHANICS–I

Black-body radiation, Planck's radiation law, photoelectric effect, Compton effect. Operator: Hamiltonian operator, angular momentum operator, Laplacian operator, postulate of quantum mechanics, eigen values, eigen function, Schrodinger time independent wave equation, physical significance of ψ & ψ^2 , application of Schrodinger wave equation to particle in a one dimensional box, hydrogen atom (separation into three equations) radial and angular wave functions.

UNIT-II

A. QUANTUM MECHANICS–II

Quantum Mechanical approach of Molecular orbital theory, basic ideas-criteria for forming M.O. and A.O., LCAO approximation, formation of H_2^+ ion, calculation of energy levels from wave functions, bonding and antibonding wave functions, Concept of σ , σ^* , π , π^* orbitals and their characteristics, Hybrid orbitals- sp , sp^2 , sp^3 Calculation of coefficients of A.O.'s used in these hybrid orbitals.

Introduction to valence bond model of H_2 , comparison of M.O. and V.B. models. Huckel theory, application of Huckel theory to ethene, propene, etc.

UNIT III

SPECTROSCOPY

Introduction: Characterization of Electromagnetic radiation, regions of the spectrum, representation of spectra, width and intensity of spectral transition, Rotational Spectrum of Diatomic molecules. Energy levels of a rigid rotor, selection rules, determination of bond length, qualitative description of non-rigid rotator, isotopic effect.

Vibrational Spectroscopy: Fundamental vibration and their symmetry vibrating diatomic molecules, Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, determination of force constant, anharmonic oscillator

Raman spectrum: Concept of polarizability, quantum theory of Raman spectra, stokes and antistokes lines, pure rotational and pure vibrational Raman spectra. Applications of Raman Spectra.

Electronic Spectroscopy: Basic principles, Electronic Spectra of diatomic molecule, Franck-Condon principle, types of electronic transition, application of electronic spectra.

UNIT-IV

ELECTROCHEMISTRY-I

- A.** Electrolytic conductance: Specific and equivalent conductance, measurement of equivalent conductance, effect of dilution on conductance, Kohlrausch law, application of Kohlrausch law in determination of dissociation constant of weak electrolyte, solubility of sparingly soluble electrolyte, absolute velocity of ions, ionic product of water, conductometric titrations.
- B.** Theories of strong electrolyte: limitations of Ostwald's dilution law, weak and strong electrolytes, Elementary ideas of Debye-Huckel-Onsager's equation for strong electrolytes, relaxation and electrophoretic effects.
- C.** Migration of ions: Transport number, Determination by Hittorf method and moving boundary method, ionic strength.

UNIT-V

ELECTROCHEMISTRY-II

- A.** Electrochemical cell and Galvanic cells – reversible and irreversible cells, conventional representation of electrochemical cells, EMF of the cell and effect of temperature on EMF of the cell, Nernst equation Calculation of ΔG , ΔH and ΔS for cell reactions.
- B.** Single electrode potential : standard hydrogen electrode, calomel electrode, quinhydrone electrode, redox electrodes, electrochemical series
- C.** Concentration cell with and without transport, liquid - junction potential, application of concentration cells in determining of valency of ions, solubility product and activity coefficient
- D.** Corrosion-types, theories and prevention

REFERENCE BOOKS

1. Physical chemistry, G.M.Barrow. International Student Edition McGraw Hill.
2. University General Chemistry, CNR Rao, Macmillan.
3. Physical Chemistry R.A.Alberty, Wiley Eastn.
4. The elements of Physical Chemistry P.W.Alkin,Oxford.
5. Physical Chemistry through problems, S.K.Dogra, Wiley Eastern.
6. Physical Chemistry B.D.Khosla.
7. Physical Chemistry, Puri & Sharma.
8. Bhoutic Rasayan, Puri & Sharma.
9. Bhoutic Rasayan, P.L.Soni.
10. Bhoutic Rasayan, Bahl & Tuli.
11. Physical Chemistry, R.L.Kapoor, Vol- I-IV.
12. Introduction to quantum chemistry,A.K.Chandra,Tata McGraw Hill.
13. Quantum Chemistry,Ira N.Levine, Prentice Hall.

B.Sc. Part- III

PRACTICAL

Max. Marks-50

INORGANIC CHEMISTRY

Gravimetric analysis:

- Estimation of nickel (II) using Dimethylglyoxime (DMG).
- Estimation of copper as CuSCN
- Estimation of iron as Fe_2O_3 by precipitating iron as $\text{Fe}(\text{OH})_3$.
- Estimation of Al (III) by precipitating with oxine and weighing as $\text{Al}(\text{oxine})_3$ (aluminium oxinate).
- Estimation of Barium as BaSO_4

Inorganic Preparations:

- Tetraamminecopper (II) sulphate, $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O}$
- Cis and trans $\text{K}[\text{Cr}(\text{C}_2\text{O}_4)_2 \cdot (\text{H}_2\text{O})_2]$ Potassium dioxalatodiaquachromate(III)
- Tetraamminecarbonatocobalt (III) ion
- Potassium tris(oxalate)ferrate(III)/ Sodium tris(oxalate)ferrate(III)
- Cu(I) thiourea complex, Bis (2,4-pentanedionate) zinc hydrate; Double salts (Chrome alum/ Mohr's salt)

ORGANIC CHEMISTRY

1. Preparation of organic Compounds

- Acetylation of one of the following compounds: amines (aniline, o-, m-, p- toluidines and o-,m-, p-anisidine) and phenols (β -naphthol, vanillin, salicylic acid)
- Benzoylation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m-, panisidine) and one of the following phenols (β -naphthol, resorcinol, p cresol) by Schotten-Baumann reaction.
- Bromination of any one of the following: a. Acetanilide by conventional methods b. Acetanilide using green approach (Bromate-bromide method)
- Nitration of any one of the following: a. Acetanilide/nitrobenzene by conventional method b. Salicylic acid by green approach (using ceric ammonium nitrate).
- Reduction of p-nitrobenzaldehyde by sodium borohydride.
- Hydrolysis of amides and esters.
- Semicarbazone of any one of the following compounds: acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde.

- Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).
- Aldol condensation using either conventional or green method.
- Benzil-Benzilic acid rearrangement.
- Preparation of sodium polyacrylate.
- Preparation of urea formaldehyde.
- Preparation of methyl orange.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization, melting point and TLC.

2. Qualitative Analysis Analysis of an organic mixture containing two solid components using water, NaHCO_3 , NaOH for separation and preparation of suitable derivatives.
3. Extraction of caffeine from tea leaves.
4. Analysis of Carbohydrate: aldoses and ketoses, reducing and non-reducing sugars.
5. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy. (Spectra to be provided).
6. Estimation of glycine by Sorenson's formalin method.
7. Study of the titration curve of glycine.
8. Estimation of proteins by Lowry's method.
9. Study of the action of salivary amylase on starch at optimum conditions.
10. Effect of temperature on the action of salivary amylase.

PHYSICAL CHEMISTRY

Conductometry

- Determination of cell constant
- Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
- Perform the following conductometric titrations:
 - i. Strong acid vs. strong base
 - ii. Weak acid vs. strong base
 - iii. Mixture of strong acid and weak acid vs. strong base
 - iv. Strong acid vs. weak base
- To determine the strength of the given acid conductometrically using standard alkali solution.
- To determine the solubility and solubility product of a sparingly soluble electrolyte conductometrically
- To study the saponification of ethyl acetate conductometrically.

Potentiometry/pH metry

Perform the following potention/pH metric titrations:

- i. Strong acid vs. strong base
- ii. Weak acid vs. strong base
- iii. Dibasic acid vs. strong base
- iv. Potassium dichromate vs. Mohr's salt
- v. Determination of pKa of monobasic acid

UV/ Visible spectroscopy

- Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration
- Determine the concentrations of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ in a mixture.
- Study the kinetics of iodination of propanone in acidic medium.
- Determine the amount of iron present in a sample using 1,10-phenanthroline.
- Determine the dissociation constant of an indicator (phenolphthalein).
- Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide.
- Study of pH-dependence of the UV-Vis spectrum (200-500 nm) of potassium dichromate.
- Spectral characteristics study (UV) of given compounds (acetone, acetaldehyde, acetic acid, etc.) in water.
- Absorption spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M H_2SO_4) and determine λ_{max} values.

Note: Experiments may be added/deleted subject to availability of time and facilities

REFERENCE BOOKS:

1. Vogel, A.I. Quantitative Organic Analysis, Part 3, Pearson (2012).31
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
4. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
5. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000)
6. Manual of Biochemistry Workshop, 2012, Department of Chemistry, University of Delhi.

8 Hrs.

PRACTICAL EXAMINATION

M.M.50

Five experiments are to be performed.

1. **Inorganic** - Two experiments to be performed. Gravimetric estimation compulsory

08 marks. (Manipulation 3 marks)

Anyone experiment from synthesis and analysis

04 marks.

2. **Organic** - Two experiments to be performed. Qualitative analysis of organic mixture containing two solid components. compulsory carrying **08 marks** (03 marks for each compound and two marks for separation).

One experiment from synthesis of organic compound (Single step)

04 marks.

3. Physical-One physical experiment

12 marks.

4. Sessional

04 marks.

5. Viva Voce

10 marks.

In case of Ex-Students one mark each will be added to Gravimetric analysis and Qualitative analysis of organic mixture and two marks in Physical experiment.

B.Sc. (Home-Science) PART- I**MARKING SCHEME**

S.No.	Paper No.	Subject	Theory M. Mark	Practical M. Mark	Total	Theory M. Mark	Practical M.Mark
Group I	(A)	Environmental Studies	75	-	100	33	
	(B)	Field work	25				
	(A)	Foundation Course Hindi Language-I	75		75	26	
	(B)	English Language-II	75		75	26	
Group II	(A)	Basic Nutrition	50	25	75	33	09
	(B)	Introduction to Resource Management	50	25	75		09
Group III	(A)	Introduction to Human Development	50	25	75	33	09
	(B)	Textile and Clothing	50	25	75		09
Group IV	(A)	Community Development	50	25	75	33	09
	(B)	Personal Empowerment and Computer Basics	50	25	75		09
Total			700				

DISTRIBUTION OF MARKS IN VARIOUS PRACTICALS

S.No.	Name of the Practical	Total M.	Sessional	Viva	Practical	Marks
1	BASIC NUTRITION	25	05	05	A. Preparation & Presentation) any one Recipe B. Taste	10 05
2	INTRODUCTION TO RESOURCE MENAGEMENT	25	05	05	-	15
3	INTRODUCTION TO HUMAN DEVELOPMENT	25	05	-	A. Preparation of any one article of Baby kit B. Toy or wearing Food of Imm. Chart	10 10
4	TEXTILE & CLOTHING	25	05		A. Drafting B. Stitching C. Weave	05 10 05
5	COMMUNITYDEVELOPMENT	25	10	05	Preparation of Audio-Visual aids	10
6	PERSONAL EMPOWERMENT & COMPUTER BASIC	25	05	05	Computer Practical	15

B.Sc. (Home Science) PART- I
Group – II
Paper –A
BASIC NUTRITION

M.M.50

OBJECTIVE:

- This course will enable the student to understand the functions of food and the role of various nutrients, their requirements and the effects of deficiency and excess (in brief).
- Learn about the structure, composition, nutritional contribution and selection of different foodstuffs,
- Be familiar with the different methods of cooking, their advantages and disadvantages, Develop an ability to improve the nutritional-quality of food.

THEORY

UNIT-I

Concept of Nutrition – Food, Nutrition, Under and Over Nutrition, Health

1. Functions of Food
2. Basic Terminology (Blanching, Marination, in cookery- Caramalization, Seasoning)
3. Methods of Cooking

UNIT-II Nutrients: Macro nutrients

Classification, sources, functions
Recommended Dietary-Allowances
Deficiency and excess (in brief)
Water
Carbohydrates
Fats
Protein
Fiber

UNIT-III Nutrients: Micro nutrients

Calcium
Iron
Magnesium
Zinc
Fluorine
Iodine, Selenium, Copper, Manganese
Fat-soluble vitamins (A,D,E,K)
Water soluble Vitamins (Thiamine, Riboflavin, Niacin, Vitamin C, Folic Acid ,Pyridoxine, Pantothenic acid and vitamin B12)

UNIT-IV Food, Structure Composition Classification and Functions.

- Cereals, Millets and their products
- Pulses, Legumes and their products
- Fruits and Vegetables
- Milk and Milk Products
- Nuts and oil Seeds
- Meat, Fish, Poultry and Eggs
- Tea, Coffee, Cocoa, Chocolate and other beverages
- Condiments and spices.

UNIT-V Improving Nutritional quality of Foods:

- Germination
- Fermentation
- Substitution
- Fortification and Enrichments

REFERENCES:

Robinson, C.H., Lawler, M.R. Chenoweth, W.L and Garwick' A.E. (1986) : Normal and therapeutic Nutrition, 17th Ed., Macmillan Publishing Co.

Swaminathan, M.S. (1985) : Essentials of Food and Nutrition VI : Fundamentals Aspects VII: Applied Aspects.

Hughes, O. Behnion, M. (1970) : Introductory Foods, 5th Edn., MacMillan Company.

Williams, S.R. (198-9) -.Nutrition and Diet Therapy, 4th Edn., C.V. Mosby Co.

PRACTICAL

OBJECTIVES:

1. To acquire skills in food preparation techniques.
2. To use appropriate methods of cooking for preparation of specific food products.

I

1. Weights and Measures standard and household measures for raw and cooked food.
2. Preparation of two recipes using cooking methods Boiling, Steaming, Baking, Roasting, Frying and Grill

II

Vegetables

- a. Simple salads and sprouting
- b. Curries

III

Fruits

Fruit preparations using fresh and dried fruits.

IV

Milk

- a. Porridges
- b. Curds, paneer and their commonly made preparation.
- c. Milk based simple desserts and puddings – custards, kheer, ice-cream

V

Soups

Basic, clear and cream soups

VI

Peanut chikki, Paushitik ladoo

REFERENCES:

1. Robinson, C.H., Lawler, M.R., Chenoweth, W.L. and Garwick A.E. (.1986) : Normal and Therapeutic Nutrition, 17th Ed., Macmillan Publishing Co.

B.Sc. (HOME SCIENCE) PART- I

Group – II Paper-B

INTRODUCTION TO RESOURCE MANAGEMENT

M.M.50

FOCUS :

This course deals with the management of resources in-the family with particular reference to mobilising all the resources for achieving the family goals. It also deals with the factors motivating management and management applied to specific resources. The course intends to create awareness, appreciation and understanding of environment. The major environmental issues and problems are to be critically analysed for inculcating environmental consciousness among the learners and to help them take individual/ household/community level decision for making the physical environment conducive for . family living. The course content has to be taught at an elementary level.

OBJECTIVES :

1. To create an awareness among the students about, management in the family as well as the other systems.
2. To recognize the importance' of wise use of resources in order to achieve goals.
3. The physical environment and its components and the major issues.
4. The impact of human, activities on environment
5. The action needed for checking environmental threats

THEORY

Unit – I

- 1- Introduction to Resource Management Definitions
- 2- Types of Management
- 3- Advantages of Management Limitation in Management

Unit – II Factors Motivating Management

- 1- Goals – Definition, Types and Utility
- 2- values – Importance, Sources, Classification, Characteristics, Changing values.
- 3- Standards – Conventional and non conventional – qualitative, quantitative, conventional and non conventional.
- 4- Relation between values, goods and standard

Unit – III (1) Resource

- (a) Types of Resources
- (b) Characteristics of Resource
- (c) Factors affecting use of Resources
- (d) Relation to Resources to Management

(2) Decision Making –

- (a) Definitions and Importance
- (b) Steps of Decision
- (c) Factors affecting decision
- (d) Resolving conflicts.

Unit – IV Management Process -

- 1- Meaning, Definition and element of Management process – Planning, Controlling, Organising and evaluation.
- 2- Planning – Importance, Techniques and Types Organisation.
- 3- Controlling – Phases of Controlling, Factors in success of the control steps – suitability, promptness, New decisions, Flexibility
- 4- Supervision – Types of Supervision – Direction and Guidance
- 5- Evaluation – Importance, Types, Techniques of Self evaluation, Evaluation of whole process and management.

Unit – V

Management of Resources -

- (1) Time Management – Tools – Time patterns, Time Cost, Peak Load, Work Curve, Rest Period, Time Norm.
- (2) Energy Management –
 - (a) Introduction, Types, Causes, Symptoms, of fatigue Measures to Relieve. Process of energy management.
- (3) Work Simplification Definition Importance, Techniques – Formal and informal pen and pencil techniques.

PRACTICAL (any six)

- 1 Identify and formulate various types of standard that student can have .
- 2 Identify and formulate five goals that a student will have.
- 3 Identify and formulate various types of decision, write process of decision making.
- 4 To work out minimum and maximum working approach. (Vertical and horizontal)
- 5 Take up a situation trip/function/picnic/party and manage that situation. Write the process of management implementing and report.
- 6 Making time plan for a student (at least for a week) and explain it.
- 7 To develop simplify methods of any work.
- 8 Visit to energy garden.

Reference :

- Koontz H. and O'Donnel C. 2005, Management – A system and contingency analysis of managerial functions, New York, Mc Graw – hill book Company.
- Kreitnes 2009, Management theory and application, conga, Learning India.
- Rao V.S. and Narayana P.S. Principles and practice of Management 2007 Konark.
- Douglas, Ian (1983) : The Urban Environment, London, Edward Arnold.
- Dowdswell, Elizabeth (1997 : Salvaging the Earth : Need for Action. P.20-24 in Environmental crisis and humans at risk : priorities for action. Edited by Sinha, Rajiv K. Ina Shree Publ., Jaipur.)
- Ruth E. Deacon Francille M. Firebaugh (1975) : Family Resource Management - Principle and Application, Roy Houghton Mifflin Company (Unit I, II, IV-VII)
- Irna, H. Gross, Elizabeth Grandall, Marjoris M. Knoll (1973) : Management for Modern families, Prentice Hall, Inc, Englewood Cliffs, New Jersey (Unit I - VIII).
- Enger, Eldon D & Smith, Bradley F (1995) : Environmental Science : A Study of Interrelationships. Wrn. C. Brown Publ., Dubuque, IA.
- Hough, M (1984) : City Form and Natural Process : Towards a New Urban Vernacular, London, Croom Helm.
- Kingsley, G.T. B.W. Ferguson, B.T. Bower and S.R. Dee (1994) ; Managing Urban Environmental Quality in Asia. Washington, D.C. World Bank, Technical Paper 220.

- Lang, R (1994) : Urban Eco-system From Concept to Application in Human Sociology and the Natural World : Prspective **son** Sustainable Future. Eds. DV.J.Bell., R.Keil, Toronto, Yor University.
- Mish.ra, Ashok Kumar : Role of Agriculture in Rural Development, Khadi Gramodyog 44 (5) Feb 1998p. 165-171.
- Mooney, Pat Roy : The Parts of Life : Agricultural Bio-diversity, indigenous knowledge, and the role of trie third system. Development Dialogue April 15, 1998p. 7-181.
- Rao, B. Narsimha : Chemical pesticides in human environment: a serious health hazard. P. 105-110 in Environmental crisis and humans at risk : Priorities for action. Edited by Sinha, Rajiv K. Ina Shree Publ., Jaipur, 1997.
- Shastri, Satish & Trivedi, Manjoo Bala (1997) : Environmental Laws in India : How Effective It is. p. 277-283 in Environmental crisis and humans at risk; prioriteis for action. Edited by Sinha, Rajiv K. Ina Shree Publ. Jaipur.
- Sinha, Rajiv K. (1997) : Environmental pollution : the 20th Century Killer. P.49-64 in Environmental crisis and humans at risk : priorities for action. Edited by Sinha,Rajiv K. Ina Shree Publ., Jaipur
- Sinha, Rajiv K. (1997) : Deforestation and Habitat Destruction : Threal to the Global Ecological Balance. P. 65-76 In Environmental crisis and humans at risk : priorities for action. Edited by Sinha, Rajiv K. Ina Shree Publ., Jaipur.
- Sinha, Rajiv K. & Khinchi, Shyam Sunder (1997) : Desertification : the silent eco-crisis of land sterilization and annihilation of human civilization. P. 87-94 In Environmental crisis and humans at risk: priorities for action. Edited by Sinha, Rajiv K. Ina Shree Publ., Jaipur.
- Sinha, Rajiv K. (1997) : Reforesting the earth : an insurance for survival. P.213-227 In Environmental crisis and humnans at risk : prioriiies for action. Edited by Sinha, Rajiv K. Ina Shree Publ., Jaipur
- United Nations Environment Program meAA/orld Health Organisation (1992) : Urban Air Polution in Megacities of the World. Oxfor : Blockwell.

B.Sc. (HOME SCIENCE) PART- I
Group – III
Paper- A
INTRODUCTION TO HUMAN DEVELOPMENT

M.M.50

FOCUS:

This is an attempt to guide undergraduate students in understanding of the field of Human Development in a basic way.

A Concious deviation is taken from the stage-wise approach to. the life span so as to make the course more meaningful and to allow for flexibility in understanding human development, as a continuous process. All topics are given a cross-cultural orientation. The major topics covered are : An overview of the field ; factors important for growth and development; different dimensions of development across the life-span namely, physical and motor, cognition, language, socio-emotional and personality and finally relevant issues in human development and social change.

Techers are encouraged to use the points of emphasis mentioned and culturally relevant examples to stimulate thought and participatroty discussion. The use of Video-films is also recommended to suppliement course content and facilitate discussions. This course purports to create awareness and appreciation for the role and functions of marriage and family as basic institutions. The changing trends, the dynamics of adjustment and contemporary problems and issues are to be critically analysed for developing better understanding of needs, adjustment areas and intervention strategies.

OBJECTIVES:

The student will –

1. Acquire knowledge and insights about the dynamics of contemporary marriage and family systems in India.
2. Become acquainted with the concept, goals and areas of adjustment, relationship within the family.
3. Become aware of her changing roles and relationships with the family.
4. Understand the dynamics of families in distress and crisis.
5. To introduce student to the field of human development-concept, dimensions and interrelations
6. To sensitize students to social and cross-culture contexts in human development.
7. To sensitize students to interventions in the field of human development

THEORY

Unit –I An overview on the field of HD

- i what is human development? Why do we need to studyit? defenition of development,ie. family and society, variations across cultures and individual differences inHuman development.
- ii family and child welfare ;**a.** family welfare programme, **b.** childwelfare programme,
- iii Growth and Development
 - a. Understanding growth and development (Definitions)
 - b. General Principles of development.
 - c. Constraints and facilitators in growth and development (influences of heredity and environment)

- Genetic inheritance: (i) fertilization (ii) Number of chromosomes. (iii) the unique third pair determines sex, (iv) genotype and phenotype, (v) sex linked genetic effects.
- Environmental per-requisites: (i) Nutrition, (ii) opportunities.
- Interaction between environment and inheritance: (i) genes provide the predisposition, range and direction of development, (ii) environment determines the extent or limit.
- The beginning of a new life
 - Prenatal development
 - Prenatal influences on the child: biological risks, age of mother, physical characteristics, illness, diet and nutrition, stress and emotional strains environmental hazards.

UNIT-II Physical Development

- The new born physical appearance: size, weight, bodily proportions, sensory capacities i.e. hearing, vision, taste, smell,, touch, temperature and position.
 - Changes in size, shape, muscles and bones, and brain as it continues through : infancy end of infancy,
 - Linking physical and motor development.
- Motor development:** reflexes in infancy; major milestones through end of infancy,
- Physical and motor development can be influenced through : (i) Maturation, (ii) nutrition, (iii) monitoring and healthcare, (iv) stimulation, (v) practice.

UNIT-III Cognitive Development Across the Life Span

- a. Cognitive development
- The concept of intelligence
 - (A brief introduction to Piaget's theory)introduce stages without much elaboration : sensorimotor stage in infancy concrete operational stage in childhood changes in remembering the reasoning in middle childhood, formal operations in adolescence, fluid and crystallized intelligence in adulthood, declining cognitive abilities in late adulthood and old age.).

The Development of Language Across the Life Span

Language as a form of communication

- Functions of language : expressing wishes, controlling others, interacting with others, expressing individuality, exploring the world, pretending, using language to communicate/share information, understanding our society and culture, reasoning.
- Communicating before language development i.e. the stages of vocalization : undifferentiated crying, differentiated crying, babbling, Imitation of sound, patterned speech.
- Beginning to use language : one or two word utterances; early sentences; telegraphic speech; understanding metaphors, smiles, irony, reflecting on superficial and deeper level meanings of sentences.
- Uses of language; conversational acts (non-verbal) conversational conventions, learning to listen.
- Language development can be influenced through : (i) maturation, (ii) stimulation
- Deviations in language development : in language development : Possible decline of language in the aged, (speech- impairment and disorders to be introduced briefly).

UNIT-IV Socio-emotional Development Across the Life Span

- a. Understanding social and emotional development
- b. Social development :
 - Introduce socialization as an important part of the process of becoming human.
 - Social milestones : beginning with the emergence of the social smile; attachment, separation, anxiety, acquiring sex roles in childhood, induction into occupational roles by adulthood, social isolation and consequences in late adulthood and in the elderly.
 - Patterns and role of parent-child interactions, interactions with siblings and peers; social and cultural interactions through infancy to old age.
- c. Emotional development
 - Emotions serve two adaptive functions : (i) motivating and (ii) communication.
 - Basic emotional reactions (joy, fear, jealousy, anger, sadness, aggressions)
 - Components of emotion : (i) emotions are elicited by the context, (ii) include bodily activity, (iii) emotional expressions are made through facial expressions, bodily movements, vocalization, (iv) labelling emotions. Emotions may be acquired as a result of/by the Influence of
 - (i) internal and external sources, (ii) cognition, (iii) learning and (iv) social reinforcement.
 - Milestones of emotional development through infancy and childhood emotional confusions and adolescence, stability of emotions in adulthood and old age.
 - Emotional problems : (i) depression, (ii) over-activity, (iii) aggression.

Personality Development Across the Life Span

- a. Personality Development
- b. Personality may be influenced by : (a) heredity, (b) environment (parenting styles, peer groups, social interactions, early childhood experiences, life events, support available in a community etc.)
- c. The role of social norms in personality development. Deviant personalities : (juvenile delinquency in childhood and anti-social personalities in adulthood)

UNIT-V **Marriage**

- a. Marriage as an institution : goals, rituals, functions, changes and challenges.
- b. Mate selection : factors influencing, considerations of exogamy and endogamy, changing trends, arranged and personal choice of mates.
- c. Preparation for marriage, social emotional issues, financial concerns and exchanges, guidance and counseling.
- d. Marital adjustment, areas and factors influencing: planned parenthood.

Families with Problems

- a. Families with marital disharmony and disruption, dimension, casual factors.
- b. Families in distress, violence and abuse, dowry victimization, violence against women.

Interventions for Families in Trouble

- a. Counseling premarital and marital
- b. Public awareness and education programmes

PRACTICAL

Production to Human Development and Family Dynamics

1. Visit to a pediatric ward to observe a new born baby and a premature baby.
2. Preparing a growth average height weight chart of five (5) children from one to (1 -3) years.
3. Study of immunization schedule.
4. Survey of parent's regulative awareness about weaning food, toys; clothes.
5. Preparation of body Kit- Baby carry bag, bib, Jhabla.

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B.Sc. (HOME SCIENCE) PART- I

Group – III

Paper- B

TEXTILE AND CLOTHING

M. Marks: 50

FOCUS:

(A) Variety in clothing depends on variety of textiles. Though very few textiles were known to man earlier, presently, he is seeing newer textiles each one superseding to other. Their performance is also varying. It is essential for a student to have some basic knowledge of these textiles to select the right kind of fabric for specific use.

(B) Clothing is important for protection, comfort, personality and growth in relevant age groups. The course should deal with, keeping in view the activities of concerned age group with consideration for safety, ease of care and comfort.

OBJECTIVES:

To enable students to-

1. To acquaint with proper notion regarding choice of fabrics
2. To develop skills in clothing construction
3. To acquaint with different textiles and their performances
4. Impart knowledge on different textiles finishes

THEORY

Unit – I

1. Introduction of the Subject
2. Common Terminologies used in Textile
3. Properties of Textile Fibers

Classification of the textile fibres : History, composition, types, production & properties

- Natural Fiber – Cotton, Linen, Silk, Wool
- Man-Made Fiber – Rayon
- Thermoplastic Fiber – Nylon

Unit – II

1. Study of Yarn
 - Meaning, Yarn Making : Mechanical & Chemical
 - Types – Simple, Complex, Novelty and Textured yarn
 - number , yarn count , Yarn Twist
2. Methods of fabric construction
 - Weaving : Handloom and its parts.
 - Different types of weaves- Plain weaves, Floting weaves, Pile, Jaquard and Leno weaves.
3. Other methods of fabric construction : Felting, Knitting, Crocheting, Braiding & Lacing

Unit – III

1. Finishes : Meaning and purpose
 - Physical finishes : Singeing , Napping ,Brushing ,Shearing, sizing , shrinking , tentaring, Calendaring etc.
 - Chemical finishes : Bleaching & mercerizing

- Special purpose finishes : wrinkle resistance , water resistant & water repellent , Flame retardant , crease resistance , soil resistant etc.
2. Identification of Fabric
 - Appearance test / Microscopic test
 - Burning test / Creasing test
 - Breaking test / Tearing test & Chemical test
 3. Importance of Clothing

Unit – IV

1. Dyes

- Definition and Classification
 - Different types of dyes : Natural & Synthetic dyes
 - Suitability of various dyes to different fibres
2. Dyeing methods of different stages of processing :
 - Fiber , yarn , piece , union & cross
 3. Household method of dyeing
 4. Colour fastness
 - Characteristics of colour fastness
 - Fastness to sunlight ,crocking ,perspiration

Unit – V

1. Printing

- Its significance
- Methods of printing : Block, Stencil, Screen & Roller printing
- Advantages and disadvantages of various methods of printing
- Faults in different printing methods
- Preparation of printing paste
- Preparation of cloth for printing
- After treatment of printed goods
- Resist dyed - Bandhej of Gujrat and Rajasthan

PRACTICAL

1. Identification of yarn
2. Identification of textile fibres :
 - Visual test / Microscopic test
 - Burning test /Chemical test
3. weaves and their variations :
 - Plain weave / Twill weave
 - Satin & Sateen weave
 - Honeycomb & Birdseye weave
4. Printing
 - Block printing / Screen printing / Stencil printing
5. Tie & dye

6. Simple dyeing of different fabrics
7. Finishing of fabric before dyeing & printing
 - Scouring
 - Bleaching
 - Designing
8. Bleaching & whitening
9. Starching
10. Laundering of cotton, silk, wool and synthetic fabric
10. Batik

B.Sc. (HOME SCIENCE) PART- I

Group – IV

Paper-A

COMMUNITY DEVELOPMENT

M. Marks: 50

FOCUS

The focus of the course is on the evaluation of approaches to community development in general and in our country in particular. The course focuses on the structure of rural and urban communities, the systems comprising of interacting structures and interlocking of these to form the existing society. It will also indicate the relationship of social change to changes in the structures and systems that exist. It is expected to help students to orient themselves to be part of the development process.

OBJECTIVES: To enable students to

1. Be aware of the approaches to development
2. Develop faith in the capacity of the people, to take responsibility for their own development.
3. Understand the existing support structures for development efforts.
4. Understand the role of non Govt organizations in community development.
5. Understand the socio - economic structures and systems that make up the rural and urban communities.
6. Understand the meaning of social change through development plans and programs in the context of the exiting socio-economic structures and systems.
7. Recognise one's own role in the development process.

THEORY

UNIT-I Development:

- a. Definitions, types - large scale and centrally planned and small scale and locally planned.
- b. Goals, the purpose of developmet - processes of development - the input process and social action process.

Historical Perspective of Development Approaches:

- a. The Capitalistic approach.
- b. The welfare approach
- c. The Gandhian approach
- d. The modernisation approach
- e. The institutional and social justice approach

Critical Development Issues :

- a. Massive poverty
- b. Food security

Community Development in India :

- a. Evolution of community development programme in India since Independence.

UNIT-II Support structures and their Functions :

- a. Central Social Welfare Board
- b. State Social Welfare Board
- c. National Level Voluntary Agencies such as CAPART, KVIC.
- d. Elected Panchayats.

Community Development Programme Approaches :

- a. Multi-purpose
- b. Target group
- c. Growth centred
- d. Area
- e. Minimum needs
- f. Antyodaya
- g. Integrated

Home Science and Community Development :

Scope of Home Science Extension for meaningful participation in community development in India

- UNIT-III** (a) **Analysis of Social Relations of Groups Social Stratification -Caste System (Micro/Macro)**
Differential ranking of groups as superior and inferior caste-groups; changes that have taken place/expected; abolition of untouchability, inter-caste collaboration, fusion of sub-castes; impact of reservations; social inequalities - extent of acceptance or opposition.
(4) Community development organization.
(5) Role of audio visual aids in community development.
- UNIT-IV** Poverty Analysis (Micro/Macro) causes of poverty and The number and proportion of poor (in general and with reference to gender in particular) prevalence of hunger and malnutrition, availability and accessibility to drinking water and sanitation facilities, health facilities, clothing and housing facilities, education facilities. Unemployment pattern and indebtedness; causes of poverty and inequalities; programs for poverty alleviation. Poverty line.
Social Relations in Religion and Culture (Micro/Macro)
a. Religions represented - the role of religion in the lives of people.
b. Popular expression of beliefs and attitudes that promote fatalism or confidence in themselves.
c. Religious and cultural customs and organisational patterns that oppose the values of social justice, equality, liberty and solidarity.
- UNIT-V** **Analysis of Social Relation to Environment (Micro/Macro)~**
a. Customs, mores, rules, regulations that are eco-friendly and that are not eco-friendly.
b. Changing patterns of production and consumption-organic farming, soil and water conservation measures, recycling of wastes, use of bio-degradable articles etc., impact of these in the communities
Gender Analysis –
a. The concept of Gender as distinct from sex.
b. The division of labour.
c. Access and control of resource.
d. Changes in the means of gaining access to resources
Approaches and Methods of Socio-Economic Analysis-
a. Rapid Rural Appraisal
b. Participatory Rural Appraisal
c. Surveys, case studies, observation
d. Participant observations.

PRACTICAL

Field Experience in Village(s) / Urban Slums

- a. Practical use of RRA / PRA Methods
- b. Reporting on Socio-economic analysis of the rural / urban community
- c. To select, Plan, preparation .& use of different-audio visual aids., aids, i.e.
Chart - Educational, Tree Chart, Flow.
Chart., Suspense Chart.-
Posters - Cartoons Pemphlets Puppets.
- d. Conduct of survey based on Unit IV & V of Theory Papers, (any two)
- e. Organising group demonstration.

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B.Sc. (HOME- SCIENCE) PART- I
Group – IV
Paper-B
PERSONAL EMPOWERMENT AND COMPUTER BASICS

M. Marks: 50

FOCUS:

This course is designed to create awareness and understanding of the need for empowerment and motivating the student towards higher goals and challenges of self-improvement. The focus is on the adolescent moving towards making choices, developing competencies and skills for handling responsibilities of self-growth and interpersonal relationships in personal and professional spheres. The thrust of this course must be in the Indian context, creating pride in and respect for cultural heritage and values. The teaching approach should be truly a "facilitator"- convinced and committed to the cause of empowerment of youth.

The Purpose of inclusion of this course must be viewed as "offering opportunities, motivation, information and skills" for enhancing the total outlook (perspectives) of the young student particularly girls. Hence the thrust is on development, women and the concept of Home Science education as holistic education with interface (and intergration) of professionalism and qualitative development of individuals and families. The teacher (facilitator) for this course must share such an- outlook and be oriented towards the same to be really effective. Also the typical examination oriented approach should be replaced by promoting dynamism, visionary zeal and motivational ethos in the classroom.

This course is designed to give basic inputs to students on Computers and their functioning and hands-on experience.

The awareness of the basic applications of computers as the tool for education, information and research is to be created and emphasized. The teaching learning process should include demonstrations and hands-on experience for all the students. Individuals, families and community.

OBJECTIVES:

The student will

1. become aware of the need, competencies and skills to be developed for empowerment and be motivated for self improvement/self -enhancement.
2. become aware of the role of empowerment of women from the perspectives of personal and national development;
3. become aware of the interdisciplinarity of Home Science education and its potential for personal and professional enhancement.
4. become sensitized to some pertinent contemporary issues that affect the quality of life of individuals, families and community.
5. know the basics of computers;
6. to be able to use computers for education, information and research.

NOTE :

Practical based and participatory teaching-learning methodology to be utilized : not conventional lectures. Dynamism on the part of the teacher is essential for successful outcome of the course.

THEORY

UNIT-I Personal Growth and Personality Development

(Through exercises, role play, discussions)

- a. The challenge : understanding and managing oneself : being aware of one's strengths and weaknesses.
- b. Personality Development: Factors and influences : emotional and motivational aspects; assertion vs. aggression.
- c. Peer pressures : Issues and management; group conformity and individualism as co-existing aspects.
- d. Conflicts and stresses, simple coping strategies.
- e. Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values)

UNIT-II Empowerment of Women

- a. Women and Development : The personal, familial, societal and national perspectives.
- b. Capacity building for women : Education, decision-making abilities and opportunities, awareness and information on legal and political issues.
- c. Women's organizations and collective strength : Women's action groups, women's participation in development initiatives.
- d. Study and discussion of life histories, case studies of illustrious Indian women from different walks of life (eg. Indira Gandhi, Jhansi ki Rani, Medha Patkar, Kiran Bedi, Vijayalaxmi Pandit, Sudha Chandran, Anutai Wagh, Ha Bhat, Bhanvari Devi)
Brief sketches/ profiles of women's organization and collective and activist efforts to improve the quality of life or tackle issues of concern (e.g. SEWA, Women's co-operatives, WIT).

Note : Students must be sensitized and made aware through assignments to identify and study the contributions of women in their own regional areas as also in the context of national perspectives. Cases of individual and collective / organized women's strengths must be discussed with examples from local / regional / levels. Each student may prepare profiles of one individual and one collective group.

UNIT-III Home Science Education as Empowerment

1. The interdisciplinarity of Home Science Education.
2. The role of Home Science Education for personal growth and professional development.
3. Home Science as holistic education with integration of goals for persons, enhancement and community development.

UNIT-IV Some Significant Contemporary Issues of Concern

- a. Gender issues: inequities and discriminations, biases and stereotypes; myths and facts.
- b. Substance abuse : Why and how to say no.
- c. Healthy Habits : In relation to physique, to studies, to heterosexual interests.
- d. AIDS : Awareness and education.

Note: Teachers/facilitators must be knowledgeable and equip themselves sufficiently; orientations/training sessions for facilitatory

UNIT-V Computer Fundamentals :

- a. Overview about computers
- b. Components of a computer
- c. Input/output devices

- d. Secondary storage devices
- e. Number Systems : Decimal, Binary, Octal, Hexadecimal
- f. Representation of information : BCD, EBCDIC, ASCII
- g. Representation of Data : Files, Records, Files
- h. File organization and access
- i. Security and safely of data.
- j. Introduction to Operating Systems.

PRACTICAL

COMPUTER BASICS

1.
 - a. Introduction
 - b. Exploring the Desktop
 - c. Running multiple programmes
 - d. Accessories
 - e. Control Panel
 - f. Managing Documents and Folders
2. **MS Word**
 - a. Starting MS-WORD
 - b. Creating and Formatting a document
 - c. Changing Fonts and Point Size
 - d. Table Creation and operations
 - e. Autocorrect, Auto Text, Spell Check, Thesaurus
 - f. Word Art, inserting objects
 - g. Mail merge, letter, label, envelope
 - h. Page set-up, Page preview
 - i. Printing a document
3. **MS-Excel**
 - a. Starting Excel
 - b. Work Sheet, Cell, Inserting Data into Rows/Columns
 - c. Alignment, Text-wrapping
 - d. Sorting data, Auto sum
 - e. Use of functions, referencing formula cells in other formulae
 - f. Naming cells and ranges, Goal seek
 - g. Generating graphs
 - h. integrating Worksheet, data and charts with WORD
 - i. Creating Hyperlink to a WORD document
 - j. Page set-up, Print Preview, Printing Worksheets.
4. **Internet**
 - a. Genesis and use of Internet
 - b. Software and hardware tequirments for Internet
 - c. Accessing the Internet, Web Page, Unsing a Search Engine, Accessing the Internet from MS-Office applications

REFERENCES:

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**B.Sc. (Home Science) PART- II
MARKING SCHEME**

S.No.	Paper No.	Subject	Theory M. Mark	Practical M. Mark	Total	Theory M. Mark	Practical M.Mark
Group I	(A)	Foundation Course Hindi Language-I English Language-II	75		75	26	
	(B)		75		75	26	
Group II	(A)	Clinical Nutrition & Dietetics Textiles and Fiber Science	50	25	75	33	09
	(B)		50	25	75		09
Group III	(A)	Human Physiology & Community Nutrition Communication Process	50	25	75	33	09
	(B)		50	25	75		09
Group IV	(A)	Life Span Development Consumer Economics	50	25	75	33	09
	(B)		50	25	75		09

DISTRIBUTION OF MARKS IN VARIOUS PRACTICALS

No.	Name of the Practical	Total Marks	Distribution			Marks
			Session	Viva	Practical	
Group – II A	Clinical Nutrition & Dietetics	25	05	05	Planning	08
					Cooking + Presentation	07
Group – II B	Textiles and Fiber Science	25	05	05	Stain Removal	05
					Tie & Dye	05
					Printing	05
Group – III A	Human Physiology & Community Nutrition	25	05	05	Spotting Blood Practicals	10 05
Group – III B	Communication Process	25	05	05	Preparation of Audio Visual Aids - 2	15
Group – IV A	Life Span Development	25	05	05	Practical	15
Group – IV B	Consumer Economics	25	05	05	Practical	15

B.Sc. (HOME-SCIENCE) PART II
Group –II
Paper - A
CLINICAL NUTRITION & DIETETICS

M. Marks: 50

Focus : The course encompasses the various stages of the life cycle and how nutrition is critical at various stages. It briefly familiarizes students with the role of nutrition in common elements.

Objectives: This course will enable to students to -

1. Understand the concept of an adequate diet and the importance of meal planning.
2. Know the factors affecting the nutrient needs during the life cycle and the RDA-for various age groups.
3. Gain knowledge about dietary management in common ailments.

THEORY

UNIT-I Definition of Health & Nutrition

Dimensions of Health (Physical, Psychological emotional & Spiritual)

Energy Requirements - Factors affecting energy requirements-BMR, Activity, age, climate, diet - induced thermogenesis (SDA physiological conditions.

Concept of nutritionally adequate diet and meal planning

- (a) Importance of meal planning
- (b) Factors affecting meal planning-Nutritional, Socio-cultural, Religious, Geographic, Economic Availability of time.

UNIT-II

Nutrition through the life cycle –

(At different activity and Social economic levels) requirements, nutritional problems, food selection.

- (a) Adulthood
- (b) Pregnancy
- (c) Lactation
- (d) Infancy
- (e) Pre-School . -
- (f) Adolescence
- (g) Old age

UNIT-III Principles of diet therapy

- (A) Modification of normal diet for therapeutic purposes, full diet, soft diet, Fluid diet, Bland diet.
- (B) Energy modification and Nutrition for weight management- Identifying the overweight and obese etiological factors contributing to. Obesity Prevention & treatment, low energy diets.
- (C) Under weight - etiology and assessment.
- (D) High energy diet, Diet for febrile (fever) conditions & surgical condition. Nutritional Anemia
- (E) Fevers – Typhoid

UNIT-IV

Etiology, Symptoms & diet management of the following -Diarrhea, Constipation, Peptic ulcer, Jaundice, Viral Hepatitis, Cirrhosis, musculoskeletal disease ,Arthritis, Gout.

UNIT-V

Diet in disease of the endocrine –

Pancreas - Diabetes mellitus - classification, symptoms, diagnosis, Dietary care & Nutritional, management of diabetes mellitus. Insulin therapy, Oral Hypoglycemic agents, special dietetic food, sweeteners & sugar substitutes, Diabetic coma, Juvenile Diabetes.

Diseases of the Cardio Vascular system –

Atherosclerosis Etiology & Risk Factors.

Hypertension - Etiology, prevalence Nutritional management & prevention.

Renal diseases - Etiology, characteristic, Symptoms & Dietary management of Glomerulonephritis- Acute & Chronic

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Group-II, Practical-A

1. **Planning- Preparation of Normal and Therapeutic diet in relation to special and nutrient requirements (Any 15)**
 - 1 Adult
 - 2 Pregnancy
 - 3 Lactation
 - 4 Constipation
 - 5 Diarrhea
 - 6 Obesity
 - 7 Underweight
 - 8 Peptic Ulcer
 - 9 Jaundice
 - 10 Viral Hepatitis
 - 11 Cirrhosis
 - 12 Acute glomerulonephritis
 - 13 Chronic glomerule nephritis
 - 14 Diabetes mellitus (**using food exchange list**)
 - (i) With Insulin
 - (ii) Without insulin
 - 15 Hypertension(Atherosclerosis)
 - 16 Anemia
2. **Standardization of recipes**

B.Sc. (HOME-SCIENCE) PART II
Group –II
Paper - B
TEXTILE AND FIBRE SCIENCE

M. Marks : 50

THEORY

Unit – I

1. Principles of laundry and its methods
2. Equipment for washing :
 - Washing equipment
 - Drying equipment
 - Finishing equipment
 - Storage equipment
3. Cleaning materials and Detergents :
 - Soap and detergent
 - Other cleaning agents
4. Water : Composition, Classification, Hardness of water, Methods of removal of hardness

Unit – II

1. Useful suggestions for laundering
2. Washing of different kinds of fabrics : Cotton ,wool ,silk & synthetic
3. Bleach agents and other reagents used in laundry
4. Starch : types and uses
5. Blue : types and uses

Unit – III

1. Dry Cleaning
2. Stain removal : classification and technique of stain removal
3. Disinfection of cloths
4. Care and Storage of fabrics
5. Consumer problems and protections

Unit – IV

1. Equipment and supplies used in clothing construction :
 - Measuring equipment
 - Cutting equipment
 - Stitching equipment
 - Finishing equipment
2. Sewing machine: its parts & function, maintenance of machine , problems faced and remedies.
3. Selection of fabric for dress according to Climate, Age, Occupation, Personality, Occasion, Figure Type, Fashion etc.
4. Wardrobe Planning

Unit – V

1. Tailoring
 - General Principles of clothing construction
 - Taking body measurement for different type of garments

- Interrelationship Of Needles, Thread, Stitch Length, & Fabric
 - Cloth Estimation For Different Garments
 - Drafting & Draping
2. Pattern Making
 - General Instructions For Pattern Making
 - Method
 - Types & Layout
 3. Fitting
 - Fundamentals Of Fitting
 - Problems Area In Fitting
 - Factors Affecting Good Fit

Group-II, Practical-B

Printing - Block, screen, tie & die, stencil printing. -.

1. Stain Removal
2. Laundering of cotton, rayon silk wool & synthetics etc.
3. Bleaching & whitening
4. Starching
5. Care of household linen
6. Simple dyeing of different fabric.
7. Tie and Dye techniques
8. Batik
9. Finishing of fabric before dyeing & printing, Scoring, bleaching, Desizing.

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Course: Introduction to Fashion Illustration

1. Tate, S.L., Edwards, M.S. 1987 : The complete Book of Fashion Illustration, New York, Harper & Row Publications, 2nd Edn.
2. Allen, Anne & Seaman, Julian : Fashion drawing : basic principles, B.T. Batsford, London, 1993, 108p.
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B.Sc. (HOME -SCIENCE) PART -II
Group –III
Paper - A
HUMAN PHYSIOLOGY & COMMUNITY NUTRITION

M. Marks: 50

THEORY

Unit – I An introduction of Physiology and Anatomy

1. Cell – Structure and functions of human cell.
2. Tissues – Classification and structure
3. Cardiovascular System –
 - (a) Blood – Composition & Functions
 - (b) Heart – Structure and Functions
 - (c) Vessels – Structure and Functions of Artery, Veins and Capillaries.

Unit – II Gastrointestinal System :

1. Structure and Functions of various organs of the gastrointestinal tract.
2. Digestion and absorption of food.
Nervous System :
 - (a) Elementary Anatomy of Nervous System
 - (b) Functions of different part of the brain and spinal cord.
 - (c) Autonomic, sympathetic & parasympathetic nervous system.

Unit – III Excretory System :

1. Structure and functions of kidney, bladder, formation of urine.
2. Structure and functions of skin.
3. Regulation of temperature of the body.

Respiratory System :

1. Structure of Lungs.
2. Mechanism of respiration and its regulation.
3. Transportation of Gases

Special Sense Organs :

1. Structure and functions of eye, Ear, Nose, Skin & tongue.

Unit – IV Musculo Skeletal System

1. Types of Muscles and its functions.
2. Skeletal System – Types of Bones.
Reproductive System –
Structure and functions of male & female reproductive organs.

Unit – V Concept and Scope of Community Nutrition :

1. Nutritional problems of the community & implications for public health.
Common Problems in India – Causes (Nutritional and Non Nutritional Problems)
Incidence of Nutritional problems, signs, symptoms & Treatment.
Protein-Energy Malnutrition (PEM)
2. Prophylaxis Programmes to Combat Nutritional Problems in India.

3. Food born disease-

- Food Poisoning
- Food Infections

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Group-III, Practical-A

1. Recording pulse rate.
2. Measurement of Blood Pressure.
3. Preparation of temperature chart.
4. Study of Histological slides of different organs.
5. Visit to one Anaganwadi centre and record the activities conducted by Anaganwadi.
6. Testing of adulterants in common foods (any five).
7. Making report of midday meal programme running at nearby school.

B.Sc. (HOME-SCIENCE) PART- II
Group –III
Paper - B
COMMUNICATION PROCESS

M. Marks: 50

Focus:

The course focuses on the process of communication, especially in development work in rural and urban areas.

Objectives: To enable students to –

1. Understand the process of communication in development work ;
2. Develop skills in the use of methods and media ; and
3. Be sensitive to the interests and needs of the people and the power of the media and methods in catering to these needs and interests.

THEORY

- UNIT-I** Concept of development communication
- Meaning and importance of communication in development
 - The purpose of communication
 - Existing patterns of communication
 - Factors that help or hinder communication
- UNIT-II** Communication Process
- One-way and two-way or interactive communication
 - Gaps in communication or distortions in transmission of message and their causes
 - Importance of two way communication
 - Basis for effective, interactive communication.
 - Attitude of 'respect for others
- UNIT-III** Methods of communication in Development Methods to reach individuals
- Personal conference
 - Interviews
 - House visits
 - Exhibits
 - Methods to reach small groups
 - Illustrated lecture
 - Group discussions
 - Co-operation
- UNIT-IV** Role Plays
- Demonstrations
 - Workshop
 - Camps
 - Radio announcements/programs
 - Newspaper stories
 - Posters
 - Videos, films
 - Television programmes
 - Letters, folders or pamphlets
 - Public meetings

- UNIT-V** Media for development communication
- Folk media Songs Stories Street-theatre
 - Games Arts
 - Puppet play Print media
 - Posters Pamphlets, leaflets
 - Newspapers - articles, stories
 - Periodicals - articles, stories, songs
 - Books
 - Cartoons
 - Audio/Visuals, Audio-Visual Media
 - Audio-tapes, radio broadcasts
 - Slides, pictures, drawings, photographs etc.
 - Videos, telecasts
 - Films-documentary, feature

Group-III, Practical-B

(ANY SIX)

1. Organising group discussion.
2. Organising group demonstration.
3. Preparation & Presentation of Audio visual aids, i.e. Posters, Charts, Cartoons, Models
Puppets.
4. Problem/need identification "of a community.
5. Planning an educational programme.
6. Evaluation of the effectiveness of methods and media.
7. Visit to Radio Station/T.V. Centre/Printing Press.
8. Preparation of Drama based on Social Development

B.Sc. (HOME-SCIENCE) PART- II
Group –IV
Paper - A
LIFE SPON DEVELOPMENT

M. Marks: 50

Focus :

This course covers the entire life span and traces the various developmental stages. Its encompasses in scope development in utero, infancy up to senescence identifying critical concerns in Socio-cultural perspectives.

To develop understanding of various methods and materials, which can be used-while working with children. The emphasis is on promoting creativity and use of different materials to allow for optimum development.

Objectives :

To become acquainted with developmental stages from birth to old age.

1. To develop awareness of important aspects of development during the whole life span.
2. To know the reqDon Welers (1974): uirement of infants and foddors and develop skills to create play materials and designing learning experiences.
3. To understand the significance of various creative activities and teachers role in implementry them.

Note : For each of the following stages of development, the-influence and inter-actions of sociocultural and environmental factors needs to be discussed.

THEORY

UNIT-I

1. Life Span development and need to study development through the life cycle. Inter-relationship between the aspects of development.
2. Childhood period (2 to 12 years) - Definition, Characteristics and Developmental tasks. "Review (2-6 yrs to 6-12 yrs) of different developmental areas (Physical, motor, Social, emotional, intellectual).

UNIT-II

Adolescence (13 to 18 years)

1. Definition, Developmental tasks.
2. Physical Development - Puberty, growth, spurts, Primary and Secondary sex characteristics, early and late maturing adolescents.
3. Identity - Definition, body image, positive and negative outcomes (Role confusion, ego-identity)
4. Heightened emotionality- Meaning causes, expression characteristics of emotional maturity, conflict with, authority coping up strategies.
5. Problems - Drug and alcohol abuse, psychological breakdown (Behaviour) STD and AIDS.

UNIT-III

Adulthood (19 to 60 years) and ageing- (Early adulthood 19 to 40 years) Definition and characteristics Development tasks, significance of the period, reponsibilities and adjustment - New family, parenthood, independence, financial matters.

1. Middle Adulthood (41 to 60' years), Definition, physical changes (senses, diseases- Transitation Period.
2. Menopause- Health issues.

3. Stresses in middle age, coping with stress to family.
4. Preparation for retirement.

Late Adulthood and Ageing – Definition.

1. Physiological changes, and health problems.
2. Retirement-effect of retirement on self family, society financial problems faced.
3. Recreational interest of the aged.
4. Issues- Old age homes, loneliness, living in joint family, prolonged illness. (Plan visit to old age homes.)

UNIT-IV

Infancy and Toddlerhood (Emotional Aspect)

1. Importance and ways of meeting child psychological needs to promote feeling of security, trust and acceptance.
Activities according to developments for various age groups
- (A) 0-6 months - Activities for simulating and sessions motor experiences with emphasis on seen, hearing, touching, feeling sensation and movements.
- (B) 7 to 12 months - Integration of experiences involving more than one sense to deeper sensory motor experiences promotic manipulation, concept formation, communication and perceptual divtiminsyion.
- (C) 13 to 24 months - Promotion of co-ordination and control of body movements, gross and fine motor skills. Strengthening concept formation, imagination and communication through language promotion of problem solving, environment to explore and satisfy curiosity and develop confidence.
- (D) 25-36 months - Improvement in body movement and communication skills, social skills concept formation.

UNIT-V

Creativity

- Concept of creativity and highlights of the role of creative expressions in overall development of children.
- Creative expressions, Meaning and definition of creativity expressions.
- Role of teacher in planning and fostering creative expressions.
- Creative expressions.
-

Art Activities

- Painting and graphics
 - (a) Painting with brush, drawing with crayons, chalk, rangoli on floor, finger painting. (Some special characteristics of this medium)
 - (b) Values, materials required, use of substituler from indeigenous materials.
 - (c) Teacher's role in conducting activities.
 - (d) Stages in child art.
- Tearing, cutting, pasting and collage, mural
 - (a) Values, materials requirred and Teacher's role in conducting activities.
 - (b) Development stages.
- Printing
 - (a) Types of printing i.e. block, vegetables, string, leaf, stencils, spray, crumpled paper, different textured surfaces.
 - (b) Values, materials required techniques.

BLOCKS :

- (a) Some special features of this medium.
- (b) Types of blocks : hollow large blocks, unit blocks and small blocks.
- (c) Stages in block play.
- (d) Values, materials and accessories for block play.
- (e) Teacher's role

Other materials

- Sand
 - (a) Characteristics of the medium.
 - (b) Values, materials required and teacher's role.
- Water.
 - (a) Characteristics of the medium.
 - (b) Values, materials required and teacher's role.

Group-IV, Practical-A (ANY TEN)

1. Infancy and Toddlerhood
 1. A file to be prepared to list activities appropriate for age groups - 0-6 months, 7-12 months, 13 to 20 months and 25 to 36 months.
 2. Students be encouraged to observe materials available in the locality, Different types of shops, tailor.
 3. Develop play materials suitable for each age group.
 4. List activities, which can be used for working with different age groups.
 - (a) 0 to 6 months.
 5. Prepare materials and design activities for seeing, hearing touching and feeling.
 6. Sensation and movement for soothing movements and exercises.
 - (b) 7 to 12 months.
 7. Prepare materials and design activities for touching and feeling sensation and movement, and manipulation.
 - (c) 13 to 14 months.
 8. Identify activities for gross motor development and prepare play materials available in the locality.
 9. Prepare play materials and list activities promote manipulation sensory experiences, concepts and language.
 10. Visit to old age homes.
- Art Activities**
 11. A few suggestions are given under each category as guideline students be encouraged to explore experiment with each media and understand the characteristics of each medium.

Samples of each be included in the resource file which each student is expected to maintain along with description of values materials and technique used.
 12. Difficulty level of each activity be considered and decide its suitability for different age groups.
 - Painting and graphics
 - Prepare a variety of brushes from different types of brooms, cotton, wool, strips of cloth, feather etc

Tearing cutting and pasting

13. 3-5 years
Tearing with all fingers, tearing with thumb and two fingers as used in holding pencil, tearing on straight line, curved line.
14. 6-8 years
Tearing circular rings starting from one corner of the page till centre of page, Making designs.
15. 3-5 cutting and pasting
Cutting a design, pasting, please of paper, cloth, sticks leaves collage, mosaic Printing

Printing

16. Printing with strings, leaf, vegetable blocks, stencil printing, thumb," finger, spray painting
17. Keeping coins, leaves with veins below paper and gently colouring with crayon.

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H.W. Mutter, J.D. & Kosmitzki 1998 : Lives Across Cultures, Oston, Allyn & Bacon.
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MC Graw Hill
5. Rice, F.P. 1965 : Human Development : A life. Span Approach, NJ : Prentice Hall.
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B.Sc. (HOME-SCIENCE) PART- II
Group –IV
Paper - B
Consumer Economics

M. Marks: 50

THEORY

- Unit – I** Consumer
- 1- Definition of consumer
 - 2- Consumer rights and responsibility
 - 3- Consumer buying habits convenience goods
 - 4- Factors affecting consumer decision
- Unit – II** Personal income
- (1) Types of income – real, money, psychic, national income, disposable income.
 - (2) Saving and investment
 - (3) Sources of investment
 - (4) Factors affecting savings
 - (5) Ways of selecting investment
- Unit – III** Consumer in the market
- (1) Market- Definition, types of market, functions, channels of distribution.
 - (2) Buying motives – Primary selective, rational emotional and totranages.
Types of Products
Advertisement, Sales, Promotion packing
 - (3) Consumer Buying Problems
 - (1) Adulteration- kinds and identification of adulteration.
 - (2) Faculty weights and measure
 - (3) Pricing
 - (4) Legal – guarantee and warrantee contracts, installment buying
 - (4) Buying process
- Unit – IV** Consumer Protection services
- (1) Organisations
 - (2) Legislation – import laws for consumer protection
 - (3) Consumer representation
Consumer and consumers problems- choice and buying problems of consumer
 - (4) Consumer protective services
 - (1) Indian Standard Institution
 - (2) Educational Institution
 - (3) Consumer Co-operatives
 - (4) Government Agencies Municipality
- Unit – V**
- (1) Consumer Decision making
 - (2) Factors effecting consumer decision in the market
 - (3) Good buy man ship
 - (4) Consumer aides for decision making

Group-IV, Practical- B

- 1- Test for adulteration
- 2- Filling of different types of form to protect consumer
- 3- Filling of form of investment services
- 4- Activity of educate consumer
- 5- Collection of samples of different symbols for helping consumer buying .
- 6- Project preparation in any relevant area.

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- Sales Management, 5th Edu., Cunniff Boiling, (Unit II, IV)
- Kotler Philip, Armstrong Gary (Principles of Marketing, 5 Edu. Prentice Hall of India, New Delhi, (Unit IV)
- David H. Bangs, Jr. : The Market Planning Guide, 3rd Edu., Galgotra Publications, (Unit IV, VII)
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- Beckman, T.R. Moyard.H.H. and Davidson, W.R. 1957 : Principles of Marketing, Ronald Press,. (Unit IV, VI)
- Gordon, L.J. and Lee. S.M. 1972 : Economics of Consumers, Dvan Vostrand, (Unit I, II, III)
- Cochrane, W.W. and Bell, C.S. 1958 : The Economics of Consumption, McGraw Hill.
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**B.Sc. (HOME-SCIENCE) PART III
MARKING SCHEME**

Group No.	Paper No.	Subject	Theory M. Mark	Practical M. Mark	Theory M. Mark	Practical M. Mark
I	(A)	Foundation Course Hindi Language	75		26	
	(B)	English Language	75		26	
II	(A)	Nutritional Biochemistry	50	25	33	09
	(B)	Food Preservation	50	25		09
III	(A)	Early Childhood Education	50	25	33	09
	(B)	Extension Education	50	25		09
IV	(A)	Foundation of Art and Design	50	25	33	09
	(B)	Apparel Making & Fashion Designing	50	25		09

DISTRIBUTION OF MARKS IN VARIOUS PRACTICAL

S.No.	Name of the Practical	Total Mark	Distribution			
			Sessi.	Viva		Marks
1	Nutritional Biochemistry	25	5	5	Titration, Identification of CHO, Blood	10 05
2	Food Preservation	25	5	5	Preparation Presentation	10 05
3	Early Childhood Education	25	5	5	Preparation Teaching	05 10
4	Extension Education	25	5	5	Practical – (2)	15
5	Foundation of Art & Design	25	5	5	Practical – (2)	15
6	Apparel Making	25	5	-	Stitching or Designing	10

B.Sc. (HOME-SCIENCE) PART- III
Group –II
Paper - A
NUTRITIONAL BIOCHEMISTRY

M. Marks: 50

THEORY

UNIT-I

- (A) Introduction to Biochemistry - definition, objectives, scope and interrelationship between Biochemistry and other biological sciences.
- (B) Carbohydrates - Definition, classifications functions and properties of
- Monosaccharides - Glucose, Fructose, Galactose
 - Disaccharides - Maltose, Lactose, Sucrose
 - Polysaccharides - Dextrin, Starch, Glycogen
- Glycolysis, Gluconeogenesis, Glycogenesis
Glycogenolysis, Citric acid Cycle.
Blood sugar regulation.

UNIT-II

- (A) Lipids – Definition, composition, importance and classification
Fatty acids - Functions, properties ,classification of MUFA and PUFA.
Significance of Acid value, Iodine value and saponification value.
Chemistry and function of Phospholipids, Glycolipids and sterols.
Metabolism - Beta Oxidation
- (B) Aspects of transport – Passive diffusion, Facilitated diffusion, Active transport

UNIT-III

- (A) Proteins - Definition composition function, and classification.
Amino acids - Essential and Nonessential
Metabolism - Urea cycle, Nitrogen balance, Amino acid pool
- (B) Enzymes - Definition, properties, classification, Mode of action of enzymes, factors affecting velocity of enzyme catalyzed reactions, coenzymes.

UNIT- IV

- (A) Harmones - Biological roles of harmones of Pituitary, Adrenal cortex and medull, Thyroid, Parathyroid, Pancreas, Sex glands.
- (B) Urine - Formation and Composition

UNIT-V

- (A) Blood – Blood composition & its Function, Blood Coagulation, Blood Groups
(B) Nucleic Acid and Nucleoproteins – Chemistry, composition, structure, functions

Practical

Nutritional biochemistry

1. Identification of Glucose, Fructose, Maltose, Lactose, Sucrose, Starch.
2. Colour and precipitation reactions of Protein.
3. Estimation of Glucose by Benedict's method.
4. Estimation of Haemoglobin by acid haemolysis method.
5. Estimation of Glycine by Titration.
6. Estimation of ascorbic acid by idometric method.
7. Visit to pathological lab (**compulsory**) to study the
 - Method of collection of sample
 - Application of latest techniques
 - Processing of sample
 - Use of reference values of blood and urine

B.Sc. (HOME-SCIENCE) PART -III
Group –II
Paper - B

FOOD PRESERVATION

M. Marks: 50

THEORY

UNIT- I

Food and its preservation.
Home and community level including commercial operations.
Principles of food Preservation
Causes of spoilage of food.

Unit - II

- Food Storage – Principles and Methods
 - Fresh Foods – Fruits & Vegetables
 - Dried Foods – Rice, Wheat & Pulses
- Canning of Foods**
- Definition and Principles of Canning
 - Nutritive value of Canned Foods

UNIT-III

Pasteurisation

Effect on food quality.
Storage of pasteurised food.

Drying & Dehydration

Methods used and effect on food quality. Types of driers. Storage and deterioration of dehydrated food products.

UNIT-IV

Use of low temperature

Refrigeration and freezing methods, principles and applications. Preparation of foods for freezing influence on food components and structure. Shelf life of frozen foods

Pickling and Fermentation

Pickles, chutneys, ketchups sauces. Fermentation - Types, products and method use
Establishment of a small scale industry / cottage industry.

UNIT-V

Chemical Preservatives

Preparation of Fruit, Juices, Squashes, Fruit Syrups, Cordials, Jam Jelly.

High Acid & High Sugar Products –

common defects, Preservation of crystallized and glazed fruits.

Nutritional Implications of food processing

Causes for loss of vitamins and minerals, Enrichment, Restoration and Fortification

REFERENCES :

1. Oser, B.L. 1965 : 14 Ed. Hawk's Physiological chemistry, Mc Graw Hill Book Co.
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8. Murray, R.K. Granner, D.K. Mayes, P.A. Nd Rodwell V.W. 1993 : 23rd Ed. Harper's Biochemistry, Large Medical Book.

Practical

1. Preparation of Jam, Jellies marmalades.
2. Preparation of Pickles & chutneys.
3. Dehydration of Vegetables & Fruits.
4. Preparation of Papad, Badi, Chips
5. Preparation of synthetic syrups & squashes.
6. Survey of market products and packaging

B.Sc. (HOME-SCIENCE) PART- III
Group –III
Paper - A
EARLY CHILDHOOD EDUCATION

M. Marks: 50

FOCUS-

The course focuses on need to provide various early childhood care and educational facilities through different programmes, for early childhood education. Types and present status of ECCE programmes are covered in this course. The recent policies affectionary young children are also included.

The course introduces students to the concept of curriculum for all round development of children. The main emphasis is on various components of curriculum to be included in daily program through medium of play. Method of learning by doing which forms the basis for understanding and knowledge is extended to the first two years of primary school.

OBJECTIVES :-

1. To know importance of early childhood care and significance of intervention programmes for early child development.
2. To understand major theoretical approaches and implication for early child development.
3. To become acquainted with current policies and programs in ECCE.
4. To meaning of curriculum and various components to be included in the daily programmes to promote all round development of children.
5. To recognize role of play in children's development.
6. To understand goals, principles, factors and approaches used in programme planning.
7. To recognize the advantages of project method and learn to use integrated approach in the development of daily programme.

THEORY

UNIT-I

Significance and objectives of early childhood care and education.

1. Significance of early childhood years in individuals development.
2. Meaning and need for intervention programmes for better growth and development.
3. Objectives of ECCE.
4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.

UNIT-II

Current Status and Expansion of Scope of ECE to ECCE

- Expansion from ECE to ECCE.
- Current Status of ECCE programme.
- Admission tests and effects on children.
- Effects of pressures on young children due to formal education.
- Need for ECCE programmes to provide quality care where mothers are at work.
- Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,
- ECE in India : Overview of pre.and post independence period.
- Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh.

Recent Developments : Policies, Institutions and contributions of NGOs

- National policy on children.

- National policy on education 1986.
- Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs.

UNIT-III

- Meaning of curriculum, Foundation of curriculum development.
 - Impact of play as means of development and learning.
 - Developmental stages of play.
 - Types of Play - Solitary play, parallel play, associative play and cooperatives play.
 - Functions of play - play as a means of assessing children's development.
 - Teachers Role in creating environment and Promoting play.
 - Classical theories of play - Surplus energy theory relaxation theory, Pre-exercise & recapitulation theory.
- Programme Planning**
- Approaches to learning : Incidental and planned learning.
 - Principles of programme planning :
 - from known to unknown, simple to complex, concrete to abstract.
 - Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.
 - Factors influencing programme planning.
 - Formal versus non-formal approach in education : advantages and disadvantages.

UNIT-IV Languages

- Goals of language teaching.
- Readiness for reading and writing. Meaning of readiness.
- Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.

Mathematics

- Importance of number and mathematics.
- Number as a language and history of its development.
- Abstract nature of number.
- Mathematical readiness.
- Analysis of prerequisite skill for number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.
- Operations and relevant rules and properties; subtraction, multiplication and division.
- Two and three dimension shapes, properties, characteristics.

Environmental studies

- Scope of environmental studies.
- Importance and goals of environmental studies.

UNIT-V Project method

- Introduction
- Meaning and advantages of using project method.
- Planning .

Alternative to Home Work

- Disadvantages of learning by role.
- Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.

Evaluation

- Need for evaluation.
- Formative and summative evaluation.
- Methods of evaluation : Observations.
- Evaluation of daily work, tools for evaluation
- Reporting to parents.

Practical (any four)

1. Plan three activities for children : list objectives, analyst tasks to achieve goals, select and organize instructional and learning materials, teacher's role, preparation of evaluation sheets i.e. check list, rating scale.
2. Prewriting activities.
3. (a) Mathematics
(b) Readiness
(c) Materials for classifying, comparing, seriations, patterning, counting shapes, fractions, list vocabulary related to mathematical concepts.
(d) Material for addition, subtraction, multiplication and divisions.
(e) Graphs.
(f) Experiences for understanding time distance weight, capacity and money.
4. Prepare a lesson for early childhood education.
5. Plan a project based on lessons of first and second standard, plan activities which children can do at home.
6. Visit to nursery school (**compulsory**).

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8. Khanna, S. 1992 : Khel Khoj : Ahmedabad : National Institute of Design.
9. Liebeck, P. How children learn mathematics. London : Penguin.
10. Lloyd L, Richardson, K. 1980 : A mathematics activity curriculum for early childhood and special education, New York : Mac Millan.
11. Maxim, G. 1985 : The very young. Belmont, California : Wadsworth Publishing Company.
12. Neumann, E. 1971 : The elements of play. In D. Sponseller, ed. Play as a learning medium Washington, DC, NAEYC..
13. Robinson, H. 1983 : Exploring teaching London : Allyn and Bacon.
14. Tarapore, F., Kettis, G., Benninger, C. 1993 ; Child's Right to play. Pune : SNDT College of Home Science.

B.Sc. (HOME-SCIENCE) PART III
Group –III
Paper - B
EXTENSION EDUCATION

M. Marks: 50

THEORY

UNIT-I

1. Concept of Education
 - (a) Meaning of Extension
 - (b) Origin of Extension
2. Extension Education Process
 - (a) Environment for learning
 - (b) Role of educator
 - (c) Role of the people participants
3. Home science extension and community development

UNIT-II

4. Concept of adult / non formal education
 - (a) Meaning
 - (b) Purpose
5. Five Year Plans
 - (a) History of planning in India.
 - (b) Five year plans and their focus.
6. Planning at different levels- National to Grass roots.

UNIT-III

7. Programmes to enhance food production
 - (a) national food production programmes.
8. Poverty alleviation efforts and food security
 - (a) Programmes for poverty alleviation for rural and urban areas.
 - (b) Current programmes for rural and urban poor

UNIT-IV

- 9 Programmes for women and children Women as target groups - specific measures for women and children such as DWCRA, ICDS, IMY. Current programmes for women as initiated and implemented by the different ministeries and departments.
- 10 PMKVY (Pradhan Mantri Kaushal Vikas Yojana).

11 Role of NGOs

Need for participation of Non-Governmental organizations in developmental efforts.
Encouragement given NGO's.

UNIT-V

Advertising Media

12. Different media for advertising.
13. Methods of Extension Education
14. Non-media advertising
15. Outdoor advertisement - Hoardings, Posters, Billboards, Bulletin Boards, Electronic sings, Letterbins, Aerial methods.
16. Transportation media (Mobile Vehicles)
17. Exhibition and Trade fair.

Practical

1. Visits to Radio / T.V. stations.
2. Script writing for Radio.
3. Visit to Extension Education Unit.
4. Write slogan about Adult-Education.
5. Designing an Advertisement for any product with relevant slogan at least two.
6. Study of programme for women as target group and children.

B.Sc. (HOME-SCIENCE) PART -III
Group –IV
Paper - A
Foundation of Art and Design

M. Marks: 50

THEORY

Unit – I Introduction to foundation of art

1. Design, Definition and types : Structural and Decorative
2. Elements of Design :-
 1. Line
 2. Size
 3. Form
 4. Structure
 5. Space
 6. Pattern
 7. Shape
 8. Light – Characteristics and Classifications
 9. Study of Colour – Classifications, Dimensions, Colour Schemes and effect.
3. Principles of design – definition and their characteristics and types :-
 1. Balance
 2. Harmony
 3. Scale
 4. Proportion
 5. Rhythm
 6. Emphasis

Unit – II **1. Indian, regional, traditional and contemporary arts and their use in :-**

1. Floor decoration
 2. Home decoration
 3. Accessories
- 2. Appreciation of art**
1. In terms of principles of art and design
 2. In terms of composition and aesthetic appeal
 3. Flower arrangement material and principles.

Unit – III 1. Family's Housing Needs

1. Protective, economic, affectional, social, standard of living, housing goals, style, function occupation.
2. Factors influencing selection and purchase of site to house building
 - 1- Legal aspects, location, physical feature, soil conditions, cost, services
3. House planning-
 - 1- Reading house plans
 - 2- Planning principles
Grouping of rooms, orientation, circulation, flexibility, privacy spaciousness, services, aestheriucs, economy, light and ventilation.
 - 3- Planning different rooms: living room, bedrooms, kitchen, store room, toilet, passage, staircase.
 - 4- Landscape planning-Principles and application.

UNIT-IV

1. **Financial Considerations :**
 1. Availability of funds for housing
 2. Housing Development finance corporation
 3. Cooperative Housing Society
 4. Life Insurance corporation
 5. Cooperative Banks
 6. Loan from provident fund
 7. Finance corporation of India
2. **Disability of owning versus renting.**
 1. Housing problems, causes and remedial measures.

UNIT-V

1. **Furniture**
 1. Styles of furniture - traditional contemporary and modern.
 2. Selection of furniture for comfort, rest and relaxation for work, for storage
 3. Arrangement of furniture for living. Sleeping, dining and multipurpose rooms.
 4. Upholstered furniture materials, techniques and designs.
2. **Furnishing fabrics**
 1. Types of curtains, draperies, floor coverings rugs and carpets, cushion covers
2. **Selection and use.**
 1. Accessories and their role in interiors.

Practical (Any Eight)

1. Freehand drawing : Memory drawing and sketching.
2. Scale drawing, solid geometry, orthographic.
3. Preparation of colour wheel and colour schemes.
4. Elements of design laws of field size, proportion, types of shadows.
5. Residential space planning - scale, lines, abbreviations, metric projections, defining space by shades, shadows.
6. Lettering.
7. Use of colour for wall/floor decoration and making accessories.
8. Application of design principles in flower arrangement, styles of flower arrangement, innovation of new styles.
9. Gift wrapping and preparing decorative articles of fibre, fabric, coir, bamboo, clay, metal etc.
10. Drawing houseplans with standard specification.
11. Furniture layout of living, dining. Kitchen and bedroom designs presentation with furniture layout, sectional elevation, views.
12. Development of designs and construction of any five of the under mentioned items -'. cushions, curtains, carpets, doormats, rugs, table mates.
13. Wall paintings, picture frame design.
14. Graphic designs.
15. Visit to Art and Craft exhibition

B.Sc. (HOME-SCIENCE) PART- III
Group –IV
Paper - B
APPAREL MAKING & FASHION DESIGNING

Marks : 50

THEORY

Unit – I

1. Anatomy Of Human Body
 - Skeleton & Muscular System
 - Joints Of Human Body
 1. Normal Body
 2. Abnormal Body
1. Figure Problems & Different Types Of Figure Defects
 - Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
2. Deformity
 1. Natural & Accidental
3. Principle of Figure Drawing
4. Sketching of Different Body Features

Unit – II

1. Drawing Of Human Form In Different Angles
 - Front
 - Back
 - Side
2. Figure Head Theories
 - 8 ½ (Average Figure)
 - 12 ½ (Fashion Figure)
3. Introduction to Elements of Design
 - Color / Line
 - Texture
 - Shapes / forms
4. Principles of Design
 - Proportion
 - Balance
 - Harmony
 - Rhythm
 - Emphasis
5. Different types of Textile design
 - Structural / Decorative
 - Realistic / Abstract
 - Stylized / Geometrical

- Scrawly / Traditional

Unit – III

1. study of colour

- Definition,
- characteristics and
- colour schemes

2. Color Theories

- Prang’s Color Theory
- Munshell’s Color Theory

3. Fashion

- Definition
- Theories
- Fashion Trends In India
- Terms Related To Fashion Industry
- Factors Affecting Fashion

4. Necklines

- Study of Different types of Necklines
- Variations of Necklines

5. Collars

- Study of Different types of Collars
- Collars above the Necklines (Band Collars)
- Collars below the Necklines (Flat Collars)

Unit – IV

1. Tucks : Different types of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
2. Pleats : Different types of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box)
3. Seam & seam finishes
4. Frills & Gathers
5. Yoke : Different types of Yokes (Body, Waist, Hip, Shoulder)
6. Sleeves : Different types of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
7. Silhouettes

Unit – V

1. Embroidery

- Fundamentals / Techniques
- Design / Color Combination
- Use Of Different Threads / Different Types of Stitches

2. Traditional Embroidery Of India

- Kashida Of Kashmir & Bihar
- Kantha Of Bengal
- Phulkari Of Punjab
- Chikenkari Of Lucknow
- Kasuti Of Karnataka

- Kutch & Kathiyawar Of Gujrat
 - Zari Embroidery
 - Applique Work
3. Entrepreneurship
 - Meaning, Definition, Nature & Types
 - Qualities of a Successful Entrepreneur
 - Factors Affecting the Development of Entrepreneurship
 4. Channels of Distribution : Meaning, Definition, Types & Functions
 5. Salesmanship : Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement.

REFERENCES -

1. Bane, A. 1974 ; Railoring, Magraw Hill.
2. Bane, A. 1979 : Flat pattern Design, Mcgraw Hill.
3. Brary Nathalie 1978 : Dress Pattern Designing London, Crosby Lockwood & Staples.
4. Gillelle, D.A. Berte, B. : Figure Types & Size Ranges, Fairchild Publication.
5. Goublourn M. 1971 : Introduction pattern cutting, Grading and Modelling, London, B.T. Batsford Lts.
6. Goldsworthy 1980 : Simple Dressmaking, Londown, Mills and Boon.altd.
7. Littman Connie 1977 : Pattern Making Design, Litton Educational Publishing Inc.
8. Muka A. 1979 : French Touch, Pittsburgh, Wolfson Publishing Co., Inc.

Practical

1. Average Figure (8 ½ Head Length)
2. Fashion Figure (12 ½ Head Length)
3. Sketching of different Body Features & Different Hair Styles
4. Preparation of Samples of different types of Necklines
5. Preparation of Samples of different types of Collars
6. Preparation of Samples of different types of Sleeves
7. Preparation of Samples of different types of Yokes
8. Preparation of Samples of different tucks and pleats
9. Construction of Ladies Garment With Different Patterns
 - Frock : A line / short body / long body
 - Petticoat / Blouse,
 - A-Line Kurti / Fitted Kurti / Flared Kurti
 - Simple Salwar / Salwar With Belt / Patiyala / Churidar
10. All samples of traditional embroidery fix in the file
11. Draw design with different colour schemes
12. Reducing and Enlarging a design
13. Draw an objects involving various Elements of design

प्रपत्र

विषय/संकाय/प्रश्न-पत्र का नाम- **B.Sc. Information Technology**

क्रमांक	कक्षा का नाम	वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
1.	1 st Year	FUNDAMENTAL OF I.T. COMPUTERS & PC SOFTWARE	FUNDAMENTAL OF IT, COMPUTER AND PC SOFTWARE	Updation Required
2.	1 st Year	PROGRAMMING CONCEPT USING C LANGUAGE	PROGRAMMING IN 'C' LANGUAGE	Updation Required
3.	1 st Year	PRACTICAL	PRACTICAL	Updation Required
4.	2 nd Year	DIGITAL CIRCUITS & COMPUTER H/W	DIGITAL CIRCUITS & COMPUTER H/W	No Change
5.	2 nd Year	PAPER-II (PAPER CODE - 0875)	PAPER-II (PAPER CODE - 0875)	No Change
6.	2 nd Year	PRACTICAL	PRACTICAL	No Change
7.	3 rd Year	AMPLIFIERS AND OSCILLATORS	AMPLIFIERS AND OSCILLATORS	No Change
8.	3 rd Year	FUNDAMENTAL DATA STRUCTURE	FUNDAMENTAL DATA STRUCTURE	No Change
9.	3 rd Year	PRACTICAL	PRACTICAL	No Change

केन्द्रीय अध्ययन मंडल के अध्यक्ष एवं सदस्यों का हस्ताक्षर

S.N.	Name	Designation/University/College	Signature with Date
1.	Dr. Sanjay Kumar	Head, S.o.S. in Computer Science & I.T., Pt. R.S. University, Raipur	 11-06-2018
2.	Mr. Hari Shankar Prasad Tonde	Head, Dept. of Computer Science, Sarguja University, Ambikapur	 11-06-18
3.	Dr. Anuj Kumar Dwivedi	Head, Dept. of Computer Science, Govt. V.B.S.D. Girls College, Jashpur Nagar, Jashpur	 11/6/18
4.	Mr. L.K. Gavel	Head, Dept. of Computer Science, Govt. G.S.G. P.G. College Balod	 11/06/18
5.	Dr. J. Durga Prasad Rao	Head, Dept. of Computer Science, Shri Sankracharya Mahavidyalaya, Bhilai	 11/6/18

B.Sc. IT
I year

B.Sc. Part - I
INFORMATION TECHNOLOGY
PAPER - I
FUNDAMENTAL OF IT, COMPUTER AND PC SOFTWARE
(PAPER CODE - 0824)

Max Marks: 50

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT - I INFORMATION TECHNOLOGY

Concepts of IT and Information System, Application of IT (in Business, Education, Medicine, Science, Governance and Agriculture), Impact of IT on society and industry, Legal and Ethical aspect of IT, Security and Threats in IT, M-Commerce, Virtual reality, Latest trend in IT, Future of IT.

UNIT - II COMPUTER NETWORK

BASIC CONCEPTS OF COMPUTER NETWORK: Internet concepts, LAN, MAN, WAN, Topology, Protocol, Transmission mode, communication process, Required elements of Data Communication.

WIRELESS COMMUNICATION: Mobile Internet, GPS, 3G, 4G, Wi-Fi, Bluetooth, infrared, radio frequency, microwave.

SOCIAL NETWORKING: Evolution of social network sites (YouTube, Facebook, LinkedIn, Twitter), Advantages and Disadvantages of social networking sites.

UNIT - III MS-WORD

Introduction, Word Processing (MS-WORD), Advantage of word processing, Introduction and Installation, Editing a file, using paragraph styles. Newspaper style columns, Using macros, Advance word processing, Headers and footers, Finding text, Setting up printer. Mail merge and other applications, Mathematical calculator, Table handling.

UNIT - IV MS-EXCEL

Introduction to spreadsheet (MS-EXCEL), Definition and advantage of electronic worksheet, Working on spread sheets, Range and related operations, Setting saving and retrieving worksheets, Inserting, Deleting, Coping and Moving of data cells, Inserting and deleting rows and column, Protecting cells, Printing a worksheet, Erasing a worksheet in Graphs creation, Types of graphs, Creating a chart sheet 3D, Columns charts, Moving and changing the size of chart, Printing the chart.

UNIT - V MS-POWER POINT AND MS-ACCESS

MS-POWER POINT: Presenting with Power point: Creating presentation, Working with slides, Different types of slides, Setting page layout, Selecting background and applying design, Adding graphics to slide, Adding sound and movie, Creating chart and graph, Playing a slide show, Slide transition, Advancing slides, Setting time, Rehearsing timing, Animating slide, Animating objects, Running the show from window.

MS-ACCESS: Creating tables in access, Defining data types, Manipulating records.

TEXT BOOKS:

1. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
2. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
3. Computer Networks, Forouzan, Tata McGraw-Hill, Second, Edition.
4. Microsoft Office 2007 fundamentals, L Story, D Walls.
5. MS Office, S. S. Shrivastava, Firewall Media

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Havi Meena
Prasad Pat...

B. Sc. PART - I
INFORMATION TECHNOLOGY
PAPER II
PROGRAMMING IN 'C' LANGUAGE

Max Marks: 50

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT-I

Fundamentals of C Programming: Overview of C: History of 'C', Structure of 'C' program. Keywords, Tokens, Data types, Constants, Literals and Variables, Operators and Expressions: Arithmetic operators, Relational operator, Logical operators, Expressions, Operator precedence and associativity, Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getchc(),getc(), putc(), putchar().

UNIT-II

Control Constructs: If-else, conditional operators, switch and break, nested conditional branching statements, loops: do while, while, for, Nested loops, break and continue, goto and label, exit function.

Functions: Definition, function components: Function arguments, return value, function call statement, function prototype, Types of function, Scope and lifetime of variable, Call by value and call by reference. Function using arrays, function with command line argument. User defined function: maths and character functions, Recursive function.

UNIT-III

Array: Array declaration, One and Two dimensional numeric and character arrays, Multidimensional arrays.

String: String declaration, initialization, string manipulation with/without using library function.

Structure, Union and Enum - Structure: Basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure, passing structure to function, function returning structure. **Union:** basics, declaring union and union variable, **Enum:** declaring enum and enum variable.

UNIT-IV

Pointer: Definition of pointer, Pointer declaration, Using & and * operators. Void pointer, Pointer to pointer, Pointer in math expression, Pointer arithmetic, Pointer comparison, Dynamic memory allocation functions – malloc, calloc, realloc and free, Pointer vs. Array, Array of pointer, Pointer to array, Pointers to function, Function returning pointer, Passing function as Argument to function, Pointer to structure, Dynamic array of structure through pointer to structure.

UNIT-V

File Handling and Miscellaneous Features: File handling: file pointer, File accessing functions: fopen, fclose, fputc, fgetc, fprintf, fscanf, fread, fwrite, eof, fflush, rewind, fseek, ferror. File handling through command line argument. Introduction to C preprocessor #include, #define, Conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.

TEXT BOOKS:

1. Programming in ANSI C, E Balagurusamy, Tata McGraw-Hill, Third Edition.
2. Let Us C, Yashwant Kanetkar, Infinity Science Press, Eighth Edition.
3. Mastering C, K R Venugopal, Tata McGraw-Hill.
4. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchie, Prentice Hall, Second Edition.
5. Applications Programming in ANSI C, R. Johnsonbaugh, Martin Kalin, Macmillan, Second Edition.
6. The Spirit of C, Mullish Cooper, Jaico publishing House.
7. How to solve it by Computer, R.G.Dromey, Pearson Education.

Suman
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Pranav
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(Dr. Jyoti Khosla)

Practical

- At least 20 Practical based on Syllabus of Paper-I and Paper-II.

Amey
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(Dr. Sanyal)

Amey
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(Dr. A.K. Praveedi)

Gaivel
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Amey
11/6/18
(Dr. J. Dange (Crossed Pen))

Amey
11-06-18
Heri Shanker Prasad Pande

INFORMATION TECHNOLOGY

PAPER - I

DIGITAL CIRCUITS & COMPUTER H/W

(Paper Code - 0874)

UNIT-I (A) Number Systems :

Octal and hexadecimal number, decimal rep., complements, addition, subtraction, multiplication, division, fixed point rep, floating point rep., other binary code-gray code, excess 3 gray, excess-3, 2421, etc. error detection code.

(B) Boolean Algebra :

Laws, demorgan's theorem, Simplification boolean expression & logic diagram, positive & negative logic, K-map and simplification of K-map.

UNIT-II Combinational circuits :

Half adder, full adder, flip-flop : SR, JK, D,T, sequential circuits : encoder, decoder, multiplexer, shift register, binary counters, BCD adder.

UNIT-III Multivibrator circuits :

Monostable, astable, bistable, smitt trigger, clocked RS, master-slave flip-flop, edge triggered flip-flop, latch.

Integrated circuits :

RTL, DTL, TTL, CMOS, MOS.

UNIT-IV (A) Central Processing Unit :

Introduction, register organisation, stack organisation, Instruction formats, Addressing modes.

(B) I/O organisation :

I/O interfaces, Data transfer, types and modes, interrupts, DMA, IOP.

UNIT-V Memory organisation :

Memory hierarchy, main memory, Auxiliary memory, Associative memory, cache memory, virtual memory, memory management techniques.

REFERENCE TEXT BOOK :

- | | | | |
|---|---|---|-------------------|
| 1 | Integrated Electronics | - | Millman & Halkias |
| 2 | Principle of Electronics | - | V.K. Mehta |
| 3 | Digital Electronics | - | R.P. Jain |
| 4 | Computer System Architecture | - | Morris Mano |
| 5 | Digital Electronics & Computer Hardware | - | Morris Mano |

PAPER - II

(Paper Code - 0875)

UNIT-I Introduction to OOP : Advantages of OOP, the Object oriented approach, characteristics of object oriented languages : object, classes, inheritance, reusability, polymorphism and C++.

B.Sc.-II

(54)

Suresh
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Harsh Thakur
Prasad Tandel

UNIT-II Function : function declaration, calling function, function definition, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.

UNIT-III Object and classes, using the classes, class constructor, class destructor, object as function argument, copy constructor, struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class derive class, access specifier, protected, member function.

UNIT-IV Pointers : & and * operator pointer variables, pointer to pointer, void pointer, pointer and array, pointer and functions, pointer and string, memory management, new and delete, pointer to object, this pointer, virtual function : virtual function, virtual member function, accesses with pointer, pure virtual function.

UNIT-V File and stream : C++ streams, C++ manipulators, Stream class, string I/O, char I/O; object I/O, I/O with multiple objects, disk I/O.

REFERENCE TEXT BOOKS :

- | | | |
|---------------------------------------|---|------------------|
| 1. Programming in C++ | - | E. Balaguruswami |
| 2. Mastering in C++ | - | Venu Gopal |
| 3. Object Oriented Programming in C++ | - | Robert Lafore |
| 4. Let us C++ | - | Y. Kanetkar |

PRACTICAL WORK

1. The sufficient Practical work should be done for understanding the paper 2.
2. At least five programs on each unit from unit 2 to unit 5 be prepared.
3. All practical works should be prepared in form of print outs and be valued while practical examination.

Suresh
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INFORMATION TECHNOLOGIES

PAPER - I

(Paper Code-0928)

AMPLIFIERS AND OSCILLATORS

- UNIT-I POWER AMPLIFIER : Classification of power amplifiers, requirement of power amplifiers, single ended class A power amplifier, and its efficiency, transformer coupled power amplifier, power dissipation curve, harmonic dissipation curve, harmonic distortion in pushpull power amplifier, power and efficiency calculation for pushpull for pushpull power amplifier, Distortion in pushpull power amplifier, Advantages of pushpull power amplifier.
- UNIT-II FEEDBACK AMPLIFIERS AND OSCILLATORS : Feedback in amplifiers, types of feedback positive, and negative feedback. Derivation of input and output impedance in voltage and current series feedback. Advantages of negative feedback. Positive feedback. Barkhausen criteria for sustained oscillator. RF oscillators-Hartley oscillator, Colpitts oscillators (Qualitative study) relaxation oscillators, Multivibrators- Astable, Monostable.
- UNIT-III OPERATIONAL AMPLIFIER AND POWER CONTROL DEVICES : Differential amplifier, operational amplifier, Characteristics of an ideal OPAMP, definition of input bias current input offset current, current drift, input offset, common mode rejection ratio, slew rate, universal biasing technique, Application of OP-Amp, as inverting, non-inverting amplifiers, differentiation, Integrator, scalar charger and voltage follower, Silicon controlled rectifier (SCR), Diac, Triac and UJT (Only qualitative study).
- UNIT-IV THE INTEL 8080/8085 MICROPROCESSOR : Introduction, the 8085 pin diagram and functions, The 8085 architecture, addressing modes, the 8080/8085 instruction set, the 8080/8085 data transfer instructions, the 8080/8085 arithmetic instructions, the 8080/8085 logical instructions the 8080/8085 stack, I/O and machine controlled instructions.
- UNIT-V PROGRAMMING THE MICROPROCESSOR : Machine and assembling languages simplified instruction set, Instruction set, arithmetic operation, Instructions set logical operations, instruction set data transfer operations, instruction set branch operations, instruction set-subroutine all and return operations, instruction set miscellaneous operations, writing a program, addressing modes, program branching, program looping using subroutines.

Programming the 8080/8085 microprocessor : Introduction straight-line programs looping programs, mathematical programs.

PAPER - II

(Paper Code-0929)

FUNDAMENTAL DATA STRUCTURE

- UNIT-I Introduction to Data Structure : The concept of data structure, Abstract data structure, Analysis of Algorithm, The concept of list.

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(Dr. J. Dey) (Praveen Kumar)
Han
11-06-18
Hani Shanta
Praveen Kumar

Stacks and Queues : Introduction to stack & primitive operation on stack, Stack as an abstract data type, Multiple Stack, Stacks application : infix, post fix, and Recursion, Introduction to queues, Primitive Operations on the Queues, Queue as an abstract data type, Circular Queue, Dequeue, Priority Queue.

UNIT-II Linked List : Introduction to the linked list of stacks, The linked list of queues, Header nodes, Doubly linked list, Circular linked list, Stacks & Queues as a Circular linked list, Application of linked list.

UNIT-III Trees: Basic Terminology, Binary Trees, Tree Representations as Array & Linked list, Binary tree representation, Traversal of binary trees : In order, Preorder & post order. Application of Binary tree, Threaded binary tree, B-Tree & Height balanced tree, representation of B⁺ & B* trees, Binary tree representation of trees, Counting binary trees, 2-3 Trees algorithm or manipulating 2-3 Trees.

UNIT-IV Searching & Sorting : Sequential Searching, Binary search, Insertion sort, Selection sort, Quick sort, Bubble sort, Heap sort, Comparison of sorting methods.

UNIT-V Tables & Graphs : Hash Table, Collision resolution Techniques, Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs. Graph Traversal Depth first & Breadth first search, Spanning Trees, minimum spanning Tree, The basic, Greedy Strategy for computing Algorithm of Kruskal and prims.

TEXT & REFERENCE BOOK :

Fundamentals of Data structure : By S. Sawhney & Horowitz

Data Structure : By Trembley & Sorrenson.

Data Structure Using Pascal : By Tannenbaum & Alugenstein

Data Structure : By lipschuists (Schaume's Outline Series McGraw Hill Publication)

Fundamentals of Computer Algorithm : By Ellis Horowitz and Sartaj Sawhney.

PRACTICAL WORK

1. The sufficient practical work should be done for understanding the data structure with C++.
2. The sufficient practical work must be performed on stacks queues linked list, trees etc.
3. All practical works should prepared in form of print outs and voluated while practical examination.

B.Sc.-III

Suman
11-06-2018

(Dr. Suresh Kumar)

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11/6/2018
(Dr. A.K. Dwivedi)

Praveen
11/06/18
(L.K. Gavel)

h/b (54)
11/6/18
(Dr. J. Dnyaneshwar)

YMD
Lanad
11-06-18
Hari Shankar
Prasad Tawli

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.Sc. Part-I (Mathematics)**

Paper-I (Algebra and Trigonometry)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-I Symmetric, Skew symmetric, Hermitian and skew hermitian, matrices. Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, Column rank and rank of a matrix. Equivalence of column and row ranks. Eigen values, Eigen vectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.	Unit-I Symmetric, Skew symmetric, Hermitian and skew hermitian, matrices. Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, Column rank and rank of a matrix. Equivalence of column and row ranks. Eigen values, Eigen vectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.	पाठ्यक्रम का वह भाग जो कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।

प्रश्नपत्र का शेष भाग यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.Sc. Part-I (Mathematics)**

Paper-II (Calculus)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-III Integration of irrational algebraic functions and transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.	Unit-III Integration of irrational algebraic functions and transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.	पाठ्यक्रम का वह भाग जो कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे
Unit-IV Degree and order of a differential equation. Equations of first order and first degree. Equations in which the variables are separable. Homogeneous equations. Linear equations and equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.	Unit-IV Degree and order of a differential equation. Equations of first order and first degree. Equations in which the variables are separable. Homogeneous equations. Linear equations and equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.	शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।

प्रश्नपत्र का शेष भाग यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

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S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.Sc. Part-I (Mathematics)**

Paper-III (VECTOR ANALYSIS AND GEOMETRY)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
Unit-IV Plane the Straight line and the plane. Sphere. Cone. Cylinder.	Unit-IV Plane the Straight line and the plane. Sphere. Cone. Cylinder.	कक्षा-11 एवं 12 वी के पाठ्यक्रम में सम्मिलित हो चुका है, उसे हटाया गया है। इससे शेष भाग का विस्तार से अध्यापन कराया जा सकेगा।
प्रश्नपत्र का शेष भाग यथावत है।		

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

प्रपत्र

विषय/संकाय/प्रश्नपत्र का नाम: **B.Sc. Part-II (Mathematics)**

Paper-I (ADVANCED CALCULUS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Paper-II (DIFFERENTIAL EQUATIONS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Paper-III (MECHANICS)

प्रश्नपत्र का पाठ्यक्रम यथावत है।

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

विषय/संकाय/प्रश्नपत्र का नाम: **B.Sc. Part-III (Mathematics)**

Paper-III (Optional Papers)

वर्तमान पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम	नवीन संशोधित पाठ्यक्रम का औचित्य
(I) PRINCIPLES OF COMPUTER SCIENCE (II) DISCRETE MATHEMATICS (III) APPLICATION OF MATHEMATICS IN FINANCE AND INSURANCE (IV) PROGRAMMING IN C AND NUMERICAL ANALYSIS (V) MATHEMATICAL MODELLING	(I) PRINCIPLES OF COMPUTER SCIENCE (II) DISCRETE MATHEMATICS APPLICATION OF MATHEMATICS IN FINANCE AND INSURANCE (III) PROGRAMMING IN C AND NUMERICAL ANALYSIS MATHEMATICAL MODELLING	पूर्व में प्रचलित 5 वैकल्पिक प्रश्नपत्रों में से दो को अलोकप्रिय होने के कारण विलोपित किया गया है। विगत 10 वर्षों में किसी भी छात्र/छात्रा द्वारा उक्त प्रश्नपत्रों का चयन नहीं किया गया है।
प्रश्नपत्र का पाठ्यक्रम यथावत है।		

Prof.H.K.Pathak

Prof.B.S.Thakur

Prof.M.A.Siddiqui

Dr.S.K.Bhatt

Dr.R.K.Mishra

Dr.A.K.Mishra

S.K.Gupta

Sangeeta Pandey

MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.Sc. Part-I MATHEMATICS

PAPER - I ALGEBRA AND TRIGONOMETRY

UNIT-I Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.

UNIT-II Application of matrices to a system of linear (both homogeneous and nonhomogeneous) equations. Theorems on consistency of a system of linear equations. Relation between the roots and coefficients of general polynomial equations in one variable. Transformation of equations. Descartes's rule of signs. Solutions of cubic equations (Cardon's method), Biquadratic equation.

UNIT-III Mappings, Equivalence relations and partitions. Congruence modulo n . Definition of a group with examples and simple properties. Subgroups, generation of groups, cyclic groups, coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems. Normal subgroups. Quotient group, Permutation groups. Even and odd permutations. The alternating groups A_n . Cayley's theorem.

UNIT-IV Homomorphism and Isomorphism of groups. The fundamental theorems of homomorphism. Introduction, properties and examples of rings, Subrings, Integral domain and fields Characteristic of a ring and Field.

TRIGONOMETRY :

UNIT-V De-Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of trigonometrical functions. Gregory's series. Summation of series.

TEXT BOOK :

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. K.B. Datta, Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd. New Delhi, 2000.
3. Chandrika Prasad, Text-Book on Algebra and Theory of equations, Pothishala Private Ltd., Allahabad.
4. S.L. Loney, Plane Trigonometry Part II, Macmillan and Company, London.

REFERENCES :

1. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, First Course in linear Algebra, Wiley Eastern, New Delhi, 1983.
2. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul, Basic Abstract Algebra (2 edition), Cambridge University Press, Indian Edition, 1997.
3. S.K. Jain, A. Gunawardena and P.B. Bhattacharya, Basic linear Algebra with MATLAB, Key College Publishing (Springer-Verlag), 2001.
4. H.S. Hall and S.R. Knight, Higher Algebra, H.M. Publications, 1994.
5. R.S. Verma and K.S. Shukla, Text Book on Trigonometry, Pothishala Pvt. Ltd., Allahabad.

B.Sc. Part-I
MATHEMATICS
PAPER - II
CALCULUS

DIFFERENTIAL CALCULUS :

UNIT-I $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of discontinuities. Differentiability. Successive differentiation. Leibnitz theorem. Maclaurin and Taylor series expansions.

UNIT-II Asymptotes. Curvature. Tests for concavity and convexity. Points of inflexion. Multiple points. Tracing of curves in cartesian and polar coordinates.

INTEGRAL CALCULUS:

UNIT-III Integration of transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.

ORDINARY DIFFERENTIAL EQUATIONS :

UNIT-IV Degree and order of a differential equation. Equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x , y , p . Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.

UNIT-V Linear differential equations of second order. Transformation of the equation by changing the dependent variable/the independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.

TEXT BOOK :

1. Gorakh Prasad, Differential Calculus, Pothishala Private Ltd. Allahabad.
2. Gorakh Prasad, Integral Calculus, Pothishala Private Ltd. Allahabad.
3. D.A. Murray Introductory Course in Differential Equations, Orient Longman (India), 1976.

REFERENCES :

1. Gabriel Klambauer, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum's outline series, Schaum Publishing Co. New York.
3. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
4. P.K. Jain and S.K. Kaushik, An Introduction to Real Analysis, S. Chand & Co. New Delhi, 2000.
5. G.F. Simmons, Differential Equations, Tata Mc Graw Hill, 1972.
6. E.A. Codington, An Introduction to Ordinary Differential Equations, Prentics Hall of India, 1961.
7. H.T.H. Piaggio, Elementary Treatise on Differential Equations and their Applications, C.B.S. Publishe & Distributors, Dehli, 1985.
8. W.E. Boyce and P.O. Dprima, Elementary Differential Equations and Boundary Value Problems, John Wiley, 1986.
12. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley and Sons, 1999.

B.Sc. Part-I
MATHEMATICS
PAPER - III
VECTOR ANALYSIS AND GEOMETRY

VECTOR ANALYSIS :

- UNIT-I** Scalar and vector product of three vectors. Product of four vectors. Reciprocal Vectors. Vector differentiation. Gradient, divergence and curl.
- UNIT-II** Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.
- UNIT-III** General equation of second degree. Tracing of conics. System of conics. Confocal conics. Polar equation of a conic.
- UNIT-IV** Sphere. Cone. Cylinder.
- UNIT-V** Central Conicoids. Paraboloids. Plane sections of conicoids. Generating lines. Confocal Conicoids. Reduction of second degree equations.

TEXT BOOKS :

1. N. Saran and S.N. Nigam, Introduction to vector Analysis, Pothishala Pvt. Ltd. Allahabad.
2. Gorakh Prasad and H.C. Gupta, Text Book on Coordinate Geometry, Pothishala Pvt. Ltd., Allahabad.
3. R.J.T. Bell, Elementary Treatise on Coordinate Geometry of three dimensions, Machmillan India Ltd. 1994.

REFERENCES :

1. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Company, New York.
2. Murray R. Spiegel, Vector Analysis, Schaum Publishing Company, New York.
3. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, 1999.
4. Shanti Narayan, A Text Book of Vector Calculus, S. Chand & Co., New Delhi.
5. S.L. Loney, The Elements of Coordinate Geometry, Macmillan and Company, London.
6. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of two Dimensions, Wiley Eastern Ltd., 1994.
7. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of three Dimensions, Wiley Eastern Ltd., 1999.
8. N. Saran and R.S. Gupta, Analytical Geometry of three Dimensions, Pothishala Pvt. Ltd. Allahabad.

MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.Sc. Part-II

Paper-I

ADVANCED CALCULUS

- UNIT-I Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison tests, Cauchy's integral test, Ratio tests, Raabe's, Logarithmic, De Morgan and Bertrand's tests. Alternating series, Leibnitz's theorem. Absolute and conditional convergence.
- UNIT-II Continuity, Sequential continuity, Properties of continuous functions, Uniform continuity, Chain rule of differentiability, Mean value theorems and their geometrical interpretations. Darboux's intermediate value theorem for derivatives, Taylor's theorem with various forms of remainders.
- UNIT-III Limit and continuity of functions of two variables. Partial differentiation. Change of variables. Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables. Jacobians.
- UNIT-IV Envelopes, evolutes. Maxima, minima and saddle points of functions of two variables. Lagrange's multiplier method.
- UNIT-V Beta and Gamma functions, Double and triple integrals, Dirichlet's integrals, Change of order of integration in double integrals.

REFERENCES :

1. Gabriel Klaumber, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. T.M. Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
3. R.R. Goldberg, Real Analysis, Oxford & I.B.H. Publishing Co., New Delhi, 1970.
4. D. Soma Sundaram and B. Choudhary, A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.
6. Gorakh Prasad, Differential Calculus, Pothishala Pvt. Ltd., Allahabad.
7. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Co., New York.
8. Gorakh Prasad, Integral Calculus, Pothishala Pvt. Ltd., Allahabad.
9. S.C. Malik, Mathematical Analysis, Wiley Eastern Ltd., New Delhi.
10. O.E. Stanaitis, An Introduction to Sequences, Series and Improper Integrals, Holden-Dey, Inc., San Francisco, California.
11. Earl D. Rainville, Infinite Series, The Macmillan Company, New York.
12. Chandrika Prasad, Text Book on Algebra and Theory of Equations, Pothishala Pvt. Ltd., Allahabad.
13. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
14. Shanti Narayan, A Course of Mathematical Analysis, S.Chand and Company, New Delhi.

B.Sc. Part-II
Paper-II
DIFFERENTIAL EQUATIONS

- UNIT-I Series solutions of differential equations- Power series method, Bessel and Legendre functions and their properties-convergence, recurrence and generating relations, Orthogonality of functions, Sturm-Liouville problem, Orthogonality of eigen-functions, Reality of eigen values, Orthogonality of Bessel functions and Legendre polynomials.
- UNIT-II Laplace Transformation- Linearity of the Laplace transformation, Existence theorem for Laplace transforms, Laplace transforms of derivatives and integrals, Shifting theorems. Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
- UNIT-III Partial differential equations of the first order. Lagrange's solution, Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
- UNIT-IV Partial differential equations of second and higher orders, Classification of linear partial differential equations of second order, Homogeneous and non-homogeneous equations with constant coefficients, Partial differential equations reducible to equations with constant coefficients, Monge's methods.
- UNIT-V Calculus of Variations- Variational problems with fixed boundaries- Euler's equation for functionals containing first order derivative and one independent variable, Extremals, Functionals dependent on higher order derivatives, Functionals dependent on more than one independent variable, Variational problems in parametric form, invariance of Euler's equation under coordinates transformation.
- Variational Problems with Moving Boundaries- Functionals dependent on one and two functions, One sided variations.
- Sufficient conditions for an Extremum- Jacobi and Legendre conditions, Second Variation. Variational principle of least action.

REFERENCES :

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, Inc., New York, 1999.
2. D.A. Murray, Introductory Course on Differential Equations, Orient Longman, (India), 1967.
3. A.R. Forsyth, A Treatise on Differential Equations, Macmillan and Co. Ltd., London.
4. Lan N. Sneddon, Elements of Partial Differential Equations, McGraw-Hill Book Company, 1988.
5. Francis B. Hilderbrand, Advanced Calculus for Applications, Prentice Hall of India Pvt. Ltd., New Delhi, 1977.
6. Jane Cronin, Differential equations, Marcel Dekkar, 1994.
7. Frank Ayres, Theory and Problems of Differential Equations, McGraw-Hill Book Company, 1972.
8. Richard Bronson, Theory and Problems of Differential Equations, McGraw-Hill, Inc., 1973.
9. A.S. Gupta, Calculus of variations with-Applications, Prentice-Hall of India, 1997.
10. R. Courant and D. Hilbert, Methods of Mathematical Physics, Vols. I & II, Wiley-Interscience, 1953.
11. I.M. Gelfand and S.V. Fomin, Calculus of Variations, Prentice-Hill, Englewood Cliffs (New Jersey), 1963.
12. A.M. Arthurs, Complementary Variational Principles, Clarendon Press, Oxford, 1970.
13. V. Kornkov, Variational Principles of Continuum Mechanics with Engineering Applications, Vol. I, Reidel Publ. : Dordrecht, Holland, 1985.
14. T. Oden and J.N. Reddy, Variational Methods in Theoretical Mechanics, Springer-Verlag, 1976.

B.Sc. Part-II
Paper-III
MECHANICS

STATICS

UNIT-I Analytical conditions of Equilibrium, Stable and unstable equilibrium. Virtual work, Catenary.

UNIT-II Forces in three dimensions, Poinsot's central axis, Null lines and planes.

DYNAMICS

UNIT-III Simple harmonic motion. Elastic strings. Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.

UNIT-IV Kepler's laws of motion, velocities and acceleration in tangential and normal directions, motion on smooth and rough plane curves.

UNIT-V Motion in a resisting medium, motion of particles of varying mass, motion of a particle in three dimensions, acceleration in terms of different co-ordinate systems.

REFERENCES :

1. S.L. Loney, Statics, Macmillan and Company, London.
2. R.S. Verma, A Text Book on Statics, Pothishala Pvt. Ltd., Allahabad.
3. S.L. Loney, An Elementary Treatise on the Dynamics of a particle and of rigid bodies, Cambridge University Press, 1956.

MATHEMATICS

There shall be three theory papers. Two compulsory and one optional. Each paper carrying 50 marks is divided into five units and each unit carry equal marks.

B.Sc. Part-III PAPER - I ANALYSIS

REAL ANALYSIS

UNIT-I Series of arbitrary terms. Convergence, divergence and oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real-valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.

UNIT-II Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of integral calculus. Mean value theorems of integral calculus. Improper integrals and their convergence. Comparison tests. Abel's and Dirichlet' tests. Frullani's integral. Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.

COMPLEX ANALYSIS

UNIT-III Complex numbers as ordered pairs. Geometrical representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions. Cauchy-Riemann equations. Harmonic functions. Elementary functions. Mapping by elementary functions. Mobius transformations. Fixed points, Cross ratio. Inverse points and critical mappings. Conformal mappings.

METRIC SPACES

UNIT-IV Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences, Completeness, Cantor's intersection theorem. Contraction principle, construction of real numbers as the completion of the incomplete metric space of rationals. Real numbers as a complete ordered field.

UNIT-V Dense subsets. Baire Category theorem. Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity, isometry and homeomorphism. Equivalent metrics. Compactness, sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and Compact sets, Connectedness, Components, Continuous functions and Connected sets.

REFERENCES :

1. T.M. Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
2. R.R. Goldberg, Real Analysis, Oxford & IBH publishing Co., New Delhi, 1970.
3. S. Lang, Undergraduate Analysis, Springer-Verlag, New York, 1983.
4. D. Somasundaram and B. Choudhary, A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. Shanti Narayan, A Course of Mathematical Analysis, S. Chand & Co. New Delhi.
6. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.
7. R.V. Churchill and J.W. Brown, Complex Variables and Applications, 5th Edition, McGraw- Hill, New York, 1990.
8. Mark J. Ablowitz and A.S. Fokas, Complex Variables : Introduction and Applications, Cambridge University Press, South Asian Edition, 1998.
9. Shanti Narayan, Theory of Functions of a Complex Variable, S. Chand & Co., New Delhi.
10. E.T. Copson, Metric Spaces, Cambridge University Press, 1968.
11. P.K. Jain and K. Ahmad, Metric Spaces, Narosa Publishing House, New Delhi, 1996.
12. G.F. Simmons, Introduction to Topology and Modern Analysis, McGraw-Hill, 1963.

B.Sc. Part-III
PART - II
ABSTRACT ALGEBRA

- UNIT-I** Group-Automorphisms, inner automorphism. Automorphism of groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for Group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow subgroup, Structure theorem for finite Abelian groups.
- UNIT-II** Ring theory-Ring homomorphism. Ideals and quotient rings. Field of quotients of an integral domain, Euclidean rings, polynomial rings, Polynomials over the rational field. The Eisenstein criterion, polynomial rings over commutative rings, Unique factorization domain. R unique factorisation domain implies so is $R[x_1, x_2, \dots, x_n]$. Modules, Submodules, Quotient modules, Homomorphism and Isomorphism theorems.
- UNIT-III** Definition and examples of vector spaces. Subspaces. Sum and direct sum of subspaces. Linear span, Linear dependence, independence and their basic properties. Basis. Finite dimensional vector spaces. Existence theorem for bases. Invariance of the number of elements of a basis set. Dimension. Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
- UNIT-IV** Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space. Bidual space and natural isomorphism. Adjoint of a linear transformation. Eigenvalues and eigenvectors of a linear transformation. Diagonalisation. Annihilator of a subspace. Bilinear, Quadratic and Hermitian forms.
- UNIT-V** Inner Product Spaces-Cauchy-Schwarz inequality. Orthogonal vectors. Orthogonal Complements. Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces. Gram-Schmidt Orthogonalization process.

REFERENCES :

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975.
2. N. Jacobson, Basic Algebra, Vols. I & II. W.H. Freeman, 1980 (also published by Hindustan Publishing Company).
3. Shanti Narayan, A Text Book of Modern Abstract Algebra, S.Chand & Co. New Delhi.
4. K.B. Datta, Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd., New Delhi, 2000.
5. P.B. Bhattacharya, S.K. Jain and S.R. Nagpal, Basic Abstract Algebra (2nd Edition) Cambridge University Press, Indian Edition, 1997.
6. K. Hoffman and R. Kunze, Linear Algebra, (2nd Edition), Prentice Hall. Englewood Cliffs, New Jersey, 1971.
7. S.K. Jain, A. Gunawardena and P.B. Bhattacharya, Basic Linear Algebra with MATLAB. Key College Publishing (Springer-Verlag) 2001.
8. S. Kumaresan, Linear Algebra, A Geometric Approach, Prentice-Hall of India, 2000.
9. Vivek Sahai and Vikas Bist, Algebra, Narosa Publishing House, 1997.
10. I.S. Luther and I.B.S.Passi, Algebra, Vol. I-Groups, Vol. II-Rings. Narosa Publishing House (Vol. I-1996, Vol. II-1999)
11. D.S. Malik, J.N. Mordeson, and M.K. Sen, Fundamentals of Abstract Algebra, McGraw- Hill International Edition, 1997.

B.Sc. Part-III
PAPER - III - (OPTIONAL)
(I) PRINCIPLES OF COMPUTER SCIENCE

- UNIT-I** **Data Storage** - Storage of bits. Main Memory. Mass Storage. Coding Information of Storage. The Binary System. Storing integers, storing fractions, communication errors.
Data Manipulation - The Central Processing Unit. The Stored-Program Concept. Programme Execution. Other Architectures. Arithmetic/Logic Instructions. Computer- Peripheral Communication.
- UNIT-II** **Operating System and Networks** - The Evolution of Operating System. Operating System Architecture. Coordinating the Machine's Activities. Handling Competition Among Process. Networks. Networks Protocol.
Software Engineering - The Software Engineering Discipline. The Software Life Cycle. Modularity. Development Tools and Techniques. Documentation. Software Ownership and Liability.
- UNIT-III** **Algorithms** - The Concept of an Algorithm, Algorithm Representation. Algorithm Discovery. Iterative Structures. Recursive Structures. Efficiency and Correctness. (Algorithms to be implemented in C++).
Programming Languages - Historical Perspective. Traditional Programming Concepts, Program Units. Language Implementation. Parallel Computing. Declarative Computing.
- UNIT-IV** **Data Structures** - Arrays. Lists. Stacks. Queues. Trees. Customised Data Types. Object Oriented Programming.
File Structure - Sequential Files. Text Files. Indexed Files. Hashed Files. The Role of the Operating System.
Database Structure - General Issues. The Layered Approach to Database Implementation. The Relational Model. Object-Oriented Database. Maintaining Database Integrity. E-R models
- UNIT-V** **Artificial Intelligence** - Some Philosophical Issues. Image Analysis. Reasoning, Control System Activities. Using Heuristics. Artificial Neural Networks. Application of Artificial Intelligence.
Theory of Computation - Turing Machines. Computable functions. A Non computable Function. Complexity and its Measures. Problem Classification.

REFERENCES :

1. J. Glen Brookshear, Computer Science : An Overview, Addition -Wesley.
2. Stanley B. Lippman, Josee Lojoie, C++ Primer (3rd Edition), Addison-Wesley.

B.Sc. Part-III
PAPER - III - (OPTIONAL)
(II) DISCRETE MATHEMATICS

UNIT-I **Sets and Propositions** - Cardinality. Mathematical Induction, Principle of inclusion and exclusion.
Computability and Formal Languages - Ordered Sets. Languages. Phrase Structure Grammars.
Types of Grammars and Languages. Permutations. Combinations and Discrete Probability.

UNIT-II **Relations and Functions** - Binary Relations, Equivalence Relations and Partitions. Partial Order
Relations and Lattices. Chains and Antichains. Pigeon Hole Principle.

Graphs and Planar Graphs - Basic Terminology. Multigraphs. Weighted Graphs. Paths and
Circuits. Shortest Paths. Eulerian Paths and Circuits. Travelling Salesman Problem. Planner Graphs.
Trees.

UNIT-III **Finite State Machines** - Equivalent Machines. Finite State Machines as Language Recognizers.
Analysis of Algorithms - Time Complexity. Complexity of Problems. Discrete Numeric Functions
and Generating Functions.

UNIT-IV **Recurrence Relations and Recursive Algorithms** - Linear Recurrence Relations with constant
coefficients. Homogeneous Solutions. Particular Solution. Total Solution. Solution by the Method of
Generating Functions. Brief review of Groups and Rings.

UNIT-V **Boolean Algebras** - Lattices and Algebraic Structures. Duality, Distributive and Complemented
Lattices. Boolean Lattices and Boolean Algebras. Boolean Functions and Expressions. Propositional
Calculus. Design and Implementation of Digital Networks. Switching Circuits.

REFERENCES :

1. C.L. Liu, Elements of Discrete Mathematics, (Second Edition), McGraw Hill, International Edition, Computer Science Series, 1986

B.Sc. Part-III
PAPER - III - (OPTIONAL)
(III) PROGRAMMING IN C AND NUMERICAL ANALYSIS
(Theory & Practical)

Theory component will have maximum marks 30.

Practical component will have maximum marks 20.

UNIT-I Programmer's model of a computer. Algorithms. Flow Charts. Data Types. Arithmetic and input/output instructions. Decisions control structures. Decision statements. Logical and Conditional operators. Loop. Case control structures. Functions. Recursions. Preprocessors. Arrays. Puppeting of strings. Structures. Pointers. File formatting.

Numerical Analysis

UNIT-II **Solution of Equations:** Bisection, Secant, Regula Falsi, Newton's Method, Roots of Polynomials. **Interpolation:** Lagrange and Hermite Interpolation, Divided Differences, Difference Schemes, Interpolation Formulas using Differences. Numerical Differentiation. Numerical Quadrature: Newton-Cote's Formulas. Gauss Quadrature Formulas, Chebychev's Formulas.

UNIT-III **Linear Equations:** Direct Methods for Solving Systems of Linear Equations (Gauss Elimination, LU Decomposition, Cholesky Decomposition), Iterative Methods (Jacobi, GaussSeidel, Relaxation Methods).
The Algebraic Eigenvalue problem: Jacobi's Method, Givens' Method, Householder's Method, Power Method, QR Method, Lanczos' Method.

UNIT-IV **Ordinary Differential Equations:** Euler Method, Single-step Methods, Runge-Kutta's Method, Multi-step Methods, Milne-Simpson Method, Methods Based on Numerical Integration, Methods Based on Numerical Differentiation, Boundary Value Problems, Eigenvalue Problems.
Approximation: Different Types of Approximation, Least Square Polynomial Approximation, Polynomial Approximation using Orthogonal Polynomials, Approximation with Trigonometric Functions, Exponential Functions, Chebychev Polynomials, Rational Functions.

Monte Carlo Methods

Unit-V Random number generation, congruential generators, statistical tests of pseudo-random numbers. Random variate generation, inverse transform method, composition method, acceptance rejection method, generation of exponential, normal variates, binomial and Poisson variates. Monte Carlo integration, hit or miss Monte Carlo integration, Monte Carlo integration for improper integrals, error analysis for Monte Carlo integration.

REFERENCES :

1. Henry Mullish and Herbert L. Cooper, Spirit of C: An Introduction to Modern Programming, Jaico Publishers, Bombay.
2. B.W. Kernighan and D.M. Ritchie. The C Programming Language 2nd Edition, (ANSI features) Prentice Hall, 1989.
3. Peter A Darnel and Philip E. Margolis, C : A Software Engineering Approach, Narosa Publishing House, 1993.
4. Robert C. Hutehison and Steven B. Just, Programming using C Language, McGraw Hill, 1988.
5. Les Hancock and Morris Krieger, The C Primer, McGraw Hill, 1988.
6. V. Rajaraman, Programming in C, Prentice Hall of India, 1994.
7. Byron S. Gottfried, Theory and Problems of Programming with C, Tata McGraw-Hill Publishing Co. Ltd., 1998.
8. C.E. Froberg, Introduction to Numerical Analysis, (Second Edition), Addison-Wesley, 1979.
9. James B. Scarborough, Numerical Mathematical Analysis, Oxford and IBHPublishing Co. Pvt. Ltd. 1966.

10. Melvin J. Maron, Numerical Analysis A Practical Approach, Macmillan publishing Co., Inc. New York, 1982.
11. M.K. Jain, S.R.K. Iyengar, R.K. Jain, Numerical Methods Problems and Solutions, New Age International (P) Ltd., 1996.
12. M.K. Jain, S.R.K. Iyengar, R.K. Jain, Numerical Methods for Scientific and Engineering Computation, New Age International (P) Ltd., 1999.
13. R.Y. Rubistein, Simulation and the Monte Carlo Methods, John Wiley, 1981.
14. D.J. Yakowitz, Computational Probability and Simulation, Addison-Wesley, 1977.

PAPER - III - (OPTIONAL)
(IV) PRACTICAL
PROGRAMMING IN C AND NUMERICAL ANALYSIS

LIST OF PRACTICAL TO BE CONDUCTED...

1. Write a program in C to find out the largest number of three integer numbers.
2. Write a program in C to accept monthly salary from the user, find and display income tax with the help of following rules :

Monthly Salary	Income Tax
9000 or more	40% of monthly salary
7500 or more	30% of monthly salary
7499 or less	20% of monthly salary

3. Write a program in C that reads a year and determine whether it is a leap year or not.
4. Write a program in C to calculate and print the first n terms of fibonacci series using looping statement.
5. Write a program in C that reads in a number and single digit. It determines whether the first number contains the digit or not.
6. Write a program in C to computes the roots of a quadratic equation using case statement.
7. Write a program in C to find out the largest number of four numbers using function.
8. Write a program in C to find the sum of all the digits of a given number using recursion.
9. Write a program in C to calculate the factorial of a given number using recursion.
10. Write a program in C to calculate and print the multiplication of given 2D matrices.
11. Write a program in C to check that whether given string palindrome or not.
12. Write a Program in C to calculate the sum of series:

$$1 + x + \frac{1}{2!}x^2 + \frac{1}{3!}x^3 + \dots + \frac{1}{n!}x^n$$

13. Write a program in C to determine the grade of all students in the class using Structure. Where structure having following members - name, age, roll, sub1, sub2, sub3, sub4 and total.
14. Write a program in C to copy one string to another using pointer. (Without using standard library functions).
15. Write a program in C to store the data of five students permanently in a data file using file handling.

Zoology
B.Sc. Part I 2018-19
Paper I
(Cell Biology and Non-chordata)

Unit:I

1. The cell (Prokaryotic and Eukaryotic)
2. Organization of Cell: Extra-nuclear and nuclear
Plasma membrane, Mitochondria, Endoplasmic reticulum, Golgi body, Ribosome and Lysosome).
3. Nucleus, Chromosomes, DNA and RNA

Unit:II

1. Cell division (Mitosis and Meiosis).
2. An elementary idea of Cancer cells And Cell transformation.
3. An elementary idea of Immunity: Innate & Acquired Immunity, Lymphoid organs, Cells of Immune System, Antigen, antibody and their interactions

Unit:III

- General characters and classification of Phylum Protozoa, Porifera, and Coelenterata up to order.
- 2. Protozoa: Type study - Paramecium,
- 2. Porifera: Type study - Sycon.
- 3. Coelenterata: Type study - Obelia

Unit: IV

- General characters and classification of Phylum Platyhelminthes, Nematelminthes, Annelida and Arthropoda up to order.
- 2. Platyhelminthes and Nematelminthes: Type Study – Fasciola, Ascaris
- 3. Annelida: Type Study - Pheretima.
- 4. Arthropoda: Type Study - Palaemone.

Unit:V

- General characters and classification of Phylum Mollusca and Echinodermata up to order.
- 2. Mollusca: Type Study - Pila.
- 3. Echinodermata- Type Study- Asterias (Starfish).

Zoology
B.Sc. Part I 2018-19
Paper II
(Chordata and Embryology)

Unit:I

1. Classification of Hemichordata
2. Hemichordata- Type study-Balanoglossus
3. Classification of Chordates upto orders..
4. Protochordata-Type study - Amphioxus.
5. A comparative account of Petromyzon and Myxine.

Unit-II

1. Fishes-Skin & Scales, migration in fishes, Parental care in fish.
2. Amphibia-Parental care and Neoteny.
3. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles

Unit-:III

1. Birds- Flight Adaptation, Migration, and Perching mechanism, Discuss-Birds are glorified reptiles.
2. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities.
3. Aquatic Mammals and their adaptations.

Unit:IV

1. Fertilization

2. Gametogenesis, Structure of gamete and Types of eggs
3. Cleavage
4. Development of Frog up to formation of three germ layers.
5. Parthenogenesis

Unit:V

1. Embryonic induction, Differentiation and Regeneration.
2. Development of Chick (a) up to formation of three germ layers, (2) Extra-embryonic membranes.
3. Placenta in mammals.

Zoology
B.Sc. Part I 2018-19
Practical

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show knowledge of the following:-

- Dissection of Earthworm, Cockroach, Palaemon and Pila
- Minor dissection—appendages of Prawn & hastate plate, mouth parts of insects, radulla of Pila.

(Alternative methods: By Clay/Thermacol/drawing/Model etc.)

- Adaptive characters of Aquatic, terrestrial, aerial and desert animals.
- Museum specimen invertebrate
- Slides- Invertebrates, frog embryology, Chick embryology and cytology,

Scheme of Practical Exam

Time: 3hrs

1. Major Dissection	10 Marks
2. Minor Dissection	05 Marks
3. Comments on Excercise based on Adaptation	04 Marks
4. Cytological Preparation	05 Marks
5. Spots-8 (Slides-4, Specimens-4)	16 Marks
6. Sessional	10 Marks

Zoology
B.Sc. Part – II 2018-19
Paper – I
(Anatomy and Physiology)

Comparative Anatomy of various organ systems of vertebrates:

Unit: I

- Integument and its derivatives: structure of scales, hair and feathers
- Alimentary canal and digestive glands in vertebrates
- Respiratory organs : Gills and lung , air-sac in birds

Unit: II

- Endoskeleton: (a) Axial Skeleton- Skull and Vertebrae, (b) Appendicular Skeleton
Limbs and girdles
- Circulatory System: Evolution of heart and aortic arches
- Urinogenital System: Kidney and excretory ducts

Unit: III

- Nervous System: General plan of brain and spinal cord
- Ear and Eye: structure and function
- Gonads and genital ducts

Unit: IV

- Digestion and absorption of dietary components
- Physiology of heart, cardiac cycle and ECG
- Blood Coagulation
- Respiration: mechanism and control of breathing

Unit: V

- Excretion: Physiology of excretion, osmoregulation
- Physiology of muscle contraction
- Physiology of nerve impulse, Synaptic transmission

Zoology
B.Sc. Part – II 2018-19

Paper-II

VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY

Unit: I

- Structure and function of Endocrine glands
- Hormone receptor
- Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones
- Endocrine disorder of pituitary, thyroid, adrenal and pancreas

Unit:II

- Reproductive cycle in vertebrates
- Menstruation, lactation and pregnancy
- Mechanism of parturition
- Hormonal regulation of gametogenesis

Unit: III

- Evidences of organic evolution.
- Theories of organic evolution.
- Variation, Mutation, Isolation and Natural selection.
- Evolution of Horse

Unit:IV

- Introduction to Ethology: Branches and concept of ethology.
- Patterns of Behaviour, Taxes, Reflexes, Drives and Stereotyped behaviour.
- Reproductive behavioural patterns.
- Drugs and behavior, Hormones and behaviour

Unit:V

- Prawn Culture
- Sericulture
- Apiculture
- Pisciculture
- Poultry keeping
- Elements of Pest Control: Chemical & Biological Control

Zoology
B.Sc. Part II 2018-19
Practical

The practical work in general shall be based on the syllabus prescribed and the students will be required to show the knowledge of the following:

- Study of the representative examples of the different chordates (Classified characters).
- Dissection of various systems of scoliodon-Afferent and Efferent branchial cranial nerves, internal ear.

Alternative methods: By Clay/Thermacol/ Drawing/ Model etc.)

- Simple microscopic technique through unstained or stained permanent mount.
- Study of prepared slides histological, as per theory papers.
- Study of limb girdles and vertebrae of Frog, Varanus, Fowl and Rabbit.
- Identification of species and individual of honey bee.
- Life cycle of honey bee and silkworm.
- Exercise based on Evolution and Animal behavior.

Scheme of Practical Exam

Time: 3:30hrs

• Major dissection (Cranial nerves/efferent branchial vessel)	10
• Exercise based on evolution	05
• Exercise based on applied zoology	05
• Exercise based on animal behavior	04
• Spotting-8 (slides-4,bones-2,specimen-2)	16
• Viva	05
• Sessional marks.	05

Zoology
B.Sc. Part III 2018-19
Paper-I

**ECOLOGY, ENVIRONMENTAL BIOLOGY: TOXICOLOGY,
MICROBIOLOGY AND MEDICAL ZOOLOGY**

Unit: I (Ecology)

- Aims and scopes of ecology
- Major ecosystems of the world-Brief introduction
- Population- Characteristics and regulation of densities
- Communities and ecosystem
- Bio-geo chemical cycles
- Air & water pollution
- Ecological succession

Unit: II (Environmental Biology)

- Laws of limiting factor
- Food chain in fresh water ecosystem
- Energy flow in ecosystem- Trophic levels
- Conservation of natural resources
- Environmental impact assessment

Unit: III (Toxicology)

- Definition and classification of Toxicants
- Basic Concept of toxicology
- Principal of systematic toxicology
- Heavy metal Toxicity (Arsenic, Mercury, Lead, Cadmium)
- Animal poisons- snake venom, scorpion & bee poisoning
- Food poisoning

Unit: IV (Microbiology)

- General and applied microbiology
- Microbiology of domestic water and sewage
- Microbiology of milk & milk products
- Industrial microbiology: fermentation process, production of penicillin, alcoholic beverages, bioleaching.

Unit: V (Medical Zoology)

- Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes, AIDS and Typhoid
- Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment
- Pathogenic protozoan's- Entamoeba, Trypanosome & Plasmodium
- Pathogenic helminthes- Schistosoma
- Nematode pathogenic parasites of man
- Vector insects

Zoology
B.Sc. Part III 2018-19
Paper II

GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND BIOTECHNIQUES

Unit: I (Genetics)

- Linkage & linkage maps, Sex Determination and Sex Linkage
- Gene interaction- Incomplete dominance & Codominance, Supplementary gene, Complementary gene, Epistasis Lethal gene, Pleiotropic gene and multiple alleles.
- Mutation: Gene and chromosomal mutation
- Human genetics: chromosomal alteration: Down, Edward, Patau, Turner and Klinefelter Syndrome Single gene disorders: Alkaptonuria, Phenylketonuria, Sickle cell anemia, albinism and colour blindness

Unit: II (Cell Physiology)

- General idea about pH & buffer
- Transport across membrane: Diffusion and Osmosis
- Active transport in mitochondria & endoplasmic reticulum
- Enzymes-classification and Action

Unit: III (Biochemistry)

- Amino acids & peptides- Basic structure & biological function
- Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cose-cycle
- Lipid metabolism- Oxidation of glycerol; Oxidation of fatty acids
- Protein Catabolism- Deamination, transamination, transmethylation

Unit: IV (Biotechnology)

- Application of Biotechnology
- Recombinant DNA & Gene cloning
- Cloned genes & other tools of biotechnology (Tissue culture, Hybridoma, Transgenic Animals and Gene library)

Unit: V (Biotechniques)

1. Principles & techniques about the following:
 - (i) pH meter
 - (ii) Colorimeter
 - (iii) Microscopy- Light microscopes: Compound, Phase contrast & Electron microscopes
 - (iv) Centrifuge
 - (v) Separation of biomolecules by chromatography & electrophoresis

B. Sc. Part III 2018-19

Zoology Practical

The practical work in general shall be based on syllabus prescribed in theory.

The candidates will be required to show knowledge of the following:

- Estimation of population density, percentage frequency, relative density.
- Analysis of producers and consumers in grassland.
- Detection of gram-negative and gram-positive bacteria.
- Blood group detection (A,B,AB,O)
- R. B. C. and W.B.C count
- Blood coagulation time
- Preparation of hematin crystals from blood of rat
- Observation of Drosophila, wild and mutant.
- Chromatography-Paper or gel.
- Colorimetric estimation of Protein.
- Mitosis in onion root tip.
- Biochemical detection of Carbohydrate, Protein and Lipid.
- Study of permanent slides of parasites, based on theory paper.
- Working principles of pH meter, colorimeter, centrifuge and microscope.

Scheme of marks distribution

Time: 3:30hrs

• Hematological Experiment	08
• Ecological Experiment: Grassland Ecosystem/ Population Density/Frequency/relative density	06
• Bacterial staining	05
• Biochemical experiment	06
• Practical based on Instrumentation (Chromatography/ pH meter/microscope/centrifuge.	05
• Spotting (5 spots)	10
7 Viva	05
8. Sessional	05

Proposed Syllabus and Structure

For

B.Sc. with Botany

Pt. Ravishankar Shukla University,

Raipur

B.Sc.- I (BOTANY) PAPER-I

BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE

UNIT-I

VIRUSES: General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.

UNIT –II

BACTERIA: General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, *Rhizobium*, *Azotobactor*, *Anabena*.

UNIT-III

FUNGI: General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi. Life cycles of *Saprolegnia*, *Albugo*, *Aspergillus*, *Peziza*, *Agaricus*, *Ustilago*, *Puccinia*, *Alternaria* and *Cercospora*. VAM Fungi

UNIT-IV

ALGAE: Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : *Nostoc*, *Gloeocapsa*, *Volvox*, *Oedogonium*, *Vaucheria*, *Chara*, *Ectocarpus*, *Polysiphonia*.

UNIT –V

Lichens- General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology

Books Recommended:

Dubey R.C. and Maheshwari D.K. *A text book of Microbiology*, S. Chand Publishing, New Delhi

Presscott, L. Harley, J. and Klein, D. *Microbiology*, 7th edition, Tata Mc Graw-Hill Co. New Delhi.

Sharma P.D., *Microbiology and Plant pathology*, Rastogi Publication. New Delhi.

Alexopolous, C.J. Mims, C.W. and Blackwell, MM. *Introduction to Mycology*, John Wiley & Sons.

Dubey H.C. *An Introduction to Fungi*, Vikas Publishing, New Delhi

Mehrotra R.S. & Agrawal A., *Plant Pathology*, Tata McGraw, New Delhi

Sharma P.D. *Plant Pathology*, Rastogi Publishers, Meeruth.

Sristava, H.N. *Fungi*, Pradeep Publications, Jalandhar

Webster, J. & Weber, R. *Introduction to Fungi*, Cambridge University Press, Cambridge

Kumar H.D. *Introduction to phycology*, Aff. East-west Press, New Delhi

Lee RE, *Phycology*, Cambridge University Press U.K.

Srivastava, H.N., *Algae*, Pradeep Publications, Jalandhar

Pandey S.K. Quick *Concept of Botany*, Lambert Academic publishing, Germany

Pandey S.N., Mishra S.P. & Trivedi P.S. *A Text Book of Botany* (Vol.-I), Vikas Publishing, New Delhi

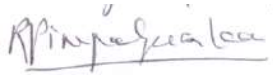
Singh, Pandey and Jain, *A Text book of Botany*, Rastogi Publication, Meerut.



(Dr. J.N. Verma)

Proff. & Head

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Raipur, (C.G.)



(Dr. Rekha Pimpalgaonkar)

Proff. & Head

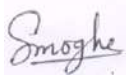
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(Dr.Ranjana Shrivastava)

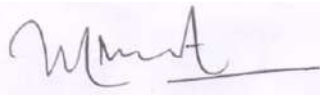
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(Mrs. Sanchal Moghe)

Govt. Bilasa Girls College, Bilaspur



(Mr. Shivakant Mishra)

(Mr Sudheer Tiwari)

B.Sc.-I (BOTANY) PAPER –II
(BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND
PALAEOBOTANY)

UNIT –I

BRYOPHYTA: General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in *Riccia*, *Marchantia*, *Pellia*, *Anthoceros*, *Funaria*. Vegetative reproduction in Bryophytes, Evolution of sporophytes.

UNIT-II

PTERIDOPHYTES: General characteristics, affinities, economic importance and classification, Heterospory and seed habit, stellar system in Pteridophytes, Aposory and apogamy, Telome theory, *Azolla* as Biofertilizer.

UNIT-III

Systematic position, occurrence. Morphology, anatomy and reproductive structure of *Psilotum*, *Lycopodium*, *selaginella*, *Equisetum*, *Marsilea*.

UNIT-IV

Gymnosperm: General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in *Cycas*, *Pinus* and *Ephedra*.

UNIT-V

PALAEOBOTANY: Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. *Lygenopteris*

Books Recommended:

Parihar, N.S. *The Biology and Morphology of Pteridophytes*, Central Book Depot, Allahabad.

Parihar, N.S. *An introduction to Bryophyta Vol.I: Bryophytes* Central Book Depot, Allahabad.

Sambamurty, AVSS, *A textbook of Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany*, IK International Publishers.

Pandey SN, Mishra SP and Trivedi PS *A text Book of Botany (Vol.II)*, Vikas Publishing, New Delhi

Bhatanagar, SP and Moitra, A. *Gymnosperm*, New Age International (P) Ltd., Publishers, New Delhi

Biswas C. and Johri BM, *The Gymnosperms*, Springer-Verlag, Germany.

Srivastava, HN, *Palaeobotany*, Pradeep Publications Jalandhar

Srivastava, HN, Bryophyta, Pradeep Publications Jalandhar

Singh, Pandey and Jain, *A Text Book of Botany*, Rastogi Publication, Meerut

Srivastava, HN, *Fundamentals of Pteridophytes*, Pradeep Publications, Jalandhar

B.Sc. I (BOTANY)

PRACTICAL

Study of external (Morphological) and internal (microscopic/anatomical) features of representative genera given in the theory.

1. Algae: Gloeocapsa, Scytonema, Gloeotrichia, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus, Sargassum, Batrachospermum
2. Gram staining
3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria and Cercospora
4. Bryophyta: Riccia, Marchantia, Pellia, Anthoceros, Sphagnum, Funaria
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.
6. Gymnosperm: Cycas, Pinus, Ephedra.

PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1. Algae/Fungi/Gram Staining	10
2. Bryophyta/Pteridophyta	10
3. Gymnosperm	10
4. Spotting	10
5. Viva-Voce	05
6. Sessional	05

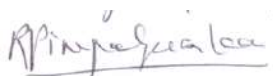


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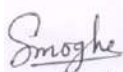


(Dr. Ranjana Shrivastava)

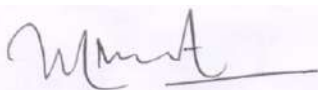
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(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)

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B.Sc.–II (BOTANY) PAPER-I

(PLANT TAXONOMY, ECONOMIC BOTANY, PLANT ANATOMY AND EMBRYOLOGY)

UNIT-I

Bentham and Hooker system of classification. Binomial Nomenclature, International Code of Nomenclature for Algae, Fungi, and plants (IUCN), Typification, numerical Taxonomy and chemotaxonomy. Preservation of Plant material and Herbarium techniques. Important botanical gardens and herbaria of India, Kew Botanical garden, England.

UNIT-II

Systematic position, distinguishing characters and economic importance of the following families, Ranunculaceae, Magnoliaceae, Brassicaceae, Rosaceae, Papaveraceae, Caryophyllaceae, Rutaceae, Cucurbitaceae, Apiaceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Malvaceae, Convolvulaceae, Orchidaceae, Acanthaceae, verbenaceae, Lamiaceae, Asteraceae, Fabaceae, Euphorbiaceae, Poaceae and Liliaceae.

UNIT-III

Economic Botany: Botanical name, family, part used and uses of the following economically important plants, fiber yielding plants; Cotton, jute, sun, hemp, coir. Timber yielding plants: Sal, Teak, Shisham and Pine. Medicinal plants: Kalmegh, Ashwagandha, Ghritkumari, Giloy, Brahmi, sarpgandha, ---of medicinal plants of C.G. Food plants: Pearl millet, Buck of wheat, Sorghum, Soyabean, gram, Ground nut, Sugarcane and Potato. Fruit plants: Pear, Peach, Litchi. Spices: Cinnamon, Turmeric, Ginger, Asafoetida and Cumin. Beverages : Tea, Coffee Rubber Cultivation of important flowers: Chrysanthemum, Dahelia, Biodiesel plants Jatropha, Pongamia Ethnobotany in context of Chhattisgarh.

UNIT-IV

Plant Anatomy: Root and shoot apical meristems theories of root and shoot apex organization, permanent tissues, anatomy of root, stem and leaf of dicot and monocot, secondary growth in root and stem, Anatomical anomalies in the primary structure of stems (Nyctanthes, Boerhaavia, Casuarina), Anamolous secondary growth in Dracaena, Bignonia, Laptadenia.

UNIT-V

Embryology: Flower as a reproductive organ, anther, microsporogenesis, types of ovules, megasporogenesis, development of male and female gametophyte, pollination, mechanisms, self incompatibility, fertilization, endosperm, embryo, polyembryony, apomixes and parthenocarpy.

Books Recommended:

Singh, Pandey, Jain. *Diversity and Systematics of Seed Plants*, Rastogi Publications Merrut

Sharma OP, *Plant Taxonomy*, Tata Mc Graw Hill, New Delhi

Pandey BP, *Taxonomy of Angiosperms*, S. Chand Publishing, New Delhi

Pandey, BP, *Plant Anatomy*, S.Chand Publishing, New Delhi

Pandey, BP, *Economic Botany*, S.Chand Publishing, New Delhi

Bhojwani, SS and Bhatanagar SP, *Embryology of Angiosperm*, Vikas Publication House, New Delhi

Singh, Pandey, Jain, *Embryology of Angiosperms*, Rastogi Publication, Meerut

Sharma, V, Alum, A. *Ethnobotany*, Rastogi Publications, Meerut

Tayal, MS *Plant Anatomy*, Rastogi Publication, Meerut

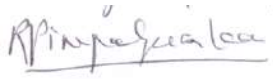


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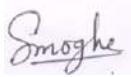


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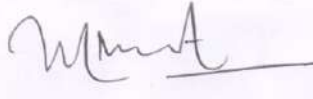
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B.Sc.-II (BOTANY) PAPER-II
(ECOLOGY AND PLANT PHYSIOLOGY)

UNIT-I

Introduction and scope of ecology, environmental and ecological factors, Soil formation and soil profile, Liebig's law of minimum, Shelford's law of tolerance, morphological and anatomical adaptations in hydrophytes, xerophytes and epiphytes.

UNIT-II

Population and community characteristics, Raunkiaer's life forms, population interactions (e.g. Symbiosis, Amensalism etc.), succession, ecotone and edge effect, ecological niches, ecotypes, keystone species

Concept of ecosystem, trophic levels, flow of energy in ecosystem, food chain and food web, concept of ecological pyramids

Biogeochemical cycles: carbon cycle, nitrogen cycle and phosphorus cycle

UNIT-III

Plant water relations: Diffusion, permeability, osmosis, imbibitions, plasmolysis, osmotic potential and water potential, Types of soil water, water holding capacity, wilting, Absorption of water, theories of Ascent of sap, Mineral nutrition and absorption, Deficiency symptoms, Transpiration, stomatal movement, significance of transpiration, Factors affecting transpiration, guttation.

UNIT-IV

Photosynthesis: Photosynthetic apparatus and pigments, light reaction mechanism of ATP synthesis. C₃, C₄ CAM pathway of carbon reduction, photorespiration, factors affecting photosynthesis.

Respiration: Aerobic and anaerobic respiration, Glycolysis, Krebs's cycle, factors affecting respiration, R.Q.

UNIT-V

Plant growth hormones: Auxin, Gibberellin, Cytokinin, Ethylene and Abscisic acid. Physiology of flowering, Florigen concept, Photoperiodism and Vernalization. Seed dormancy and germination, plant movement.

Books Recommended:

Koromondy, E.J. *Concepts of Ecology*, Prentice Hall, USA

Singh, JS Singh SP and Gupta SR. *Ecology and Environmental Science and Conservation*, S. Chand Publishing, New Delhi

Sharma, PD. *Ecology and Environment*, Rastogi Publications, Meerut

Hopkins, WG and Huner, PA. *Introduction to Plant Physiology*, John Wiley and Sons.

Pandey SN and Sinha BK, *Plant Physiology*, Vikas Publishing, New Delhi

Taiz, L and Zeiger. E. *Plant Physiology*, 5th edition, Sinauer Associates Inc. M.A, USA

Srivastava, HS *Plant Physiology and Biotechnology*, Rastogi Publications, Meerut

B.Sc. II (BOTANY)

Practical

1. Taxonomy: Detailed description and identification of locally available plants of the families as prescribed in the theory paper.
2. Economic Botany: Identification and comment on the plants and plant products belonging to different economic use categories
3. Preparation of Herbarium of local wild plants.
4. Quantitative vegetation analysis of a grassland ecosystem.
5. Anatomical characteristics of hydrophytes and xerophytes.
6. Demonstration of root pressure.
7. Demonstration of transpiration.
8. Demonstration of evolution of O₂ in photosynthesis, factors affecting of photosynthesis.
9. Comparison of R.Q. of different respiratory substrates.
10. Demonstration of fermentation.
11. Determination of BOD of a water body.
12. Demonstration of mitosis.

PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1.	Anatomy	08
2.	Economic Botany	04
3.	Physiology	08
4.	Ecology	10
5.	Spotting	10
6.	Viva-Voce	05
7.	Project Work/ Field Study	10

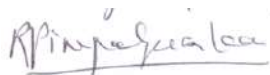


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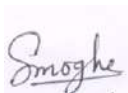


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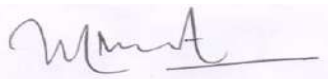
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(Mr Sudheer Tiwari)

B.SC.-III (BOTANY) PAPER –I
**(ANALYTICAL TECHNOLOGY PLANT PATHOLOGY,
EXPERIMENTAL EMBRYOLOGY, ELEMENTARY BIOSTATISTICS,
ENVIRONMENTAL POLLUTION AND CONSERVATION)**

UNIT-I

Structure, Principle and applications of analytical instrumentation.

Chromatography technique, Oven, Incubator, Autoclave, Centrifuge, Spectrophotometer

UNIT-II

Plant Tissue culture techniques, growth media, totipotency, protoplast culture, somatic hybrids and cybrids, micropropagation, somaclonal variations, haploid culture.

Analytical techniques: Microscopy-Light microscope, Electron microscope

UNIT-III

General principles of plant pathology, general symptoms of fungal, bacterial and viral diseases, mode of infection, diseases resistance and control measures, plant quarantine. A study of epidemiology and etiology of following plant diseases.

Rust diseases of wheat, Tikka diseases of ground nut, Red rot of sugar cane, Bacterial blight of rice, Yellow vein mosaic of bhindi, Little leaf of brinjal.

UNIT-IV

Introduction to pollution, green house gases, Ozone depletion, Dissolved oxygen, B.O.D., C.O.D.

Bio magnification, Eutrophication, Acid precipitation, Phytoremediation, Plant indicators, Biogeographical Zones of India, Concept of biodiversity, CBD, MAB, National parks and

biodiversity Hot spots, Conservation strategies, Red Data Book, IUCN threat categories, invasive species, endemic species, concept of sustainable development.

UNIT-V

ELEMENTARY BIOSTATISTICS:

Introduction and application of Biostatics, measure of central tendency-Mean, Median, Mode, measures of dispersal-Standard deviation, standard error.

Books Recommended:

Singh, RS, *Plant Diseases*, Oxford & IBH, New Delhi.

Pandey, BP, *Plant Pathology*, S.Chand Publishing, New Delhi

Sharma, PD, *Microbiology and Plant pathology*, Rastogi Publications, Meerut

Sharma PD, *Mycology and Phytopathology*, Rastogi Publications, Meerut

Singh JS, Singh SP and Gupta, SR, *Ecology Environmental Science and Conservation*, S. Chand Publishing, New Delhi

Sharma, PD. *Ecology and Environment*, Rastogi Publications, Meerut

Bhojwani, SS and Razdan, MK, *Plant Tissue Culture:Theory and Practices*, Elsevier

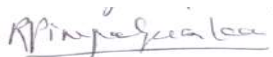
Sharma AK, *Text book of Biostatistics*, Discovery Publishing House Pvt. Ltd.



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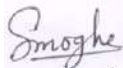
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(Mr Sudheer Tiwari)

B.Sc.-III (BOTANY) PAPER –II
(GENETICS, MOLECULAR BIOLOGY, BIOTECHNOLOGY AND
BIOCHEMISTRY)

UNIT-I

Cell and cell organelles, organization and morphology of chromosomes, giant chromosomes, cell division, Mendel's laws, gene interactions, linkage and crossing over, chromosomal aberration, polyploidy, sex linked inheritance, sex determination, cytoplasmic inheritance, gene concept: cistron, muton, recon.

UNIT-II

Nucleic acids, structure and forms of DNA and RNA, DNA/RNA as genetic material, replication of DNA, biochemical and molecular basis of mutation, genetic code and its properties, mechanism of transcription and translation in prokaryotes, regulation of gene expression, Operon model.

UNIT-III

Recombinant DNA, Enzymes in recombinant DNA technology, cloning vectors (Plasmid, Bacteriophages, Cosmids, Phagemids), gene cloning, PCR, Application of Biotechnology; G.M.Plants, Monoclonal antibodies, DNA finger printing

UNIT-IV

Protein: Chemical composition, primary, secondary and tertiary structure of Proteins.

Carbohydrate: general account of monosaccharides, disaccharids and Polysaccharides

Fat: Structure and properties of fats and fatty acids, synthesis and breakdown.

UNIT-V

ENZYMES: Nomenclature and classification, components of enzyme, theories of enzyme action, enzyme kinetics (Michaelis-Menten constant), allosteric enzymes, isozymes, Abzymes. Ribozymes, factors affecting enzyme activity.

Books Recommended:

Nelson, DL, Cox, MM, Lehninger *Principles of Biochemistry*, W.H. freeman and Company, New York, USA.

Cooper, GM, *The Cell: A Molecular Approach*, ASM Press & Sunderland, Washington, D.C. Sinauer Associates, MA.

Singh BD, *Fundamental of Genetics*, Kalyani Publication

Singh BD, *Genetics*, Kalyani Publication

Gupta, PK, *Cell and Molecular Biology*, Rastogi Publications, Meerut

Singh, BD, *Biotechnology: Expanding Horizons*, Kalyani publications

Gupta, PK, *Elements of Plant Biotechnology*, Rastogi Publications, Meerut

Gupta, SN, *Concepts of Biochemistry*, Rastogi Publications, Meeru

Jain, JL., Jain S, Jain, N, *Fundamentals of Biochemistry*, S Chand Publishing, New Delhi

B.Sc.-III (Botany)**Practical**

1. Study of host parasite relationship pf plant diseases listed above.
2. Demonstration of preparation of Czapek's Dox medium and Potato dextrose agar medium, sterilization of culture medium and pouring.
3. Inoculation in culture tubes and petriplates.
4. Gram Staining.
5. Microscopic examination of Curd.
6. Study of plant diseases as listed in the theory paper.
7. Biochemical test of carbohydrate and protein.
8. Instrumentation techniques

PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1.	Plant Disease/Symptoms	10
2.	Instrumentation techniques	05
3.	Staining of Microbes	05
4.	Tissue Culture techniques	05
5.	Spotting	10
6.	Project Work/ Field Study	05
5.	Viva-Voce	05
6.	Sessional	05

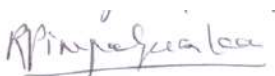


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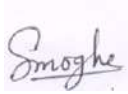


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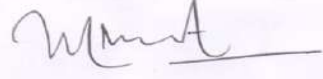
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SYLLABUS

B.COM. PART-I

GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
i) Environmental Studies	75	100	33
Field Work	25		
A. Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
B. Three Compulsory Groups			
Group-I			
I. Financial Accounting	75	150	50
II. Business Communication	75		
Group-II			
I. Business Mathematics	75	150	50
II. Business Reg. Framework	75		
Group-III			
I. Business Environment	75	150	50
II. Business Economics	75		

B.Com Part- I Compulsory

Group – I Paper – I - Financial Accounting

OBJECTIVE – To Impart basic accounting knowledge as applicable to business.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Meaning and Scope of Accounting : Need, development and definition, objectives of accounting, difference between Book-keeping and accounting; Branches of accounting; Accounting Principles. Accounting Standard : International Accounting Standard only outlines, Accounting Standard in India. Accounting Transaction : Accounting Cycles Journal Rules of debit & Credit. Compound Journal Entry opening Entry Relationship between Journal & ledger, Capital & Revenue: Classification of Income & Expenditure entries.</p> <p>UNIT –II Final Accounts; Trial balance; Manufacturing account; Trading account; Profit & loss account; Balance sheet; Adjustment entries. Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.</p> <p>UNIT –III Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Methods of recording depreciation; Methods for providing depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy; as per Indian accounting Standard : provisions and Reserves. Accounts of Non-Trading Institutions.</p>	<p>UNIT –I Accounting :An Introduction: Development, Definition, Needs, objectives; Branches of accounting; Basic Accounting Principles, Concepts & Conventions. Accounting Standard : International Accounting Standard only outlines, Accounting Standard in India.. Accounting Transaction : Concept of Double Entry System, Concept of Capital & Revenue , Book of original records : Journal; Ledger; Sub-Division of Journal : Cashbook.</p> <p>UNIT –II Final Accounts; Trial balance; Manufacturing account; Trading account; Profit & loss account; Balance sheet; Adjustment entries. Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.</p> <p>UNIT –III Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Methods of recording depreciation; Methods for providing depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy; as per Indian accounting Standard : provisions and Reserves. Accounts of Non-Trading Institutions.</p>	<p>Addition of Sub Division of journal</p> <p>No Change</p> <p>No Change</p>

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –IV Special Accounting Areas : Branch Account : Dependent Branch : Debtors system, stock and debtor system ; Hire-purchase and installment purchase system ; Meaning of hire-purchase contract, Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods for small values ; Installment purchase system ; After sales Service.</p> <p>UNIT –V a. Partnership Account : Essential characteristics of partnership: Partnership deed; Final accounts; Adjustment after closing the accounts ; Fixed fluctuating capital ; Goodwill ; AS- 10 ; Joint Life Policy ; Change in Profit Sharing Ratio. b. Reconstitution of a partnership firm-Admission of a partner ; Retirement of a partner ; Death of a partner; Dissolution of a firm ; Accounting entries; Insolvency of partnership firm-Modes of dissolution of a firm; Accounting entries ; Insolvency of partners distribution.</p>	<p>UNIT –IV Special Accounting Areas : Hire-purchase and installment purchase system : Meaning of hire-purchase contract, Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods for small values ; Installment purchase system ; After sales Service.</p> <p>UNIT –V Partnership Account : Dissolution of a Partnership Firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.</p>	<p>Ommission of Branch Accounting</p> <p>Ommission of Fundamental of Partnership, Admission, Retirement and Death of partner.</p> <p>Addition of Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.</p>

बी,कॉम. भाग – एक
अनिवार्य
समूह-1 प्रश्नपत्र – 1 – वित्तीय लेखांकन

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 लेखांकन का अर्थ एवं क्षेत्र : आवश्यकता, विकास एवं परिभाषा, लेखांकन के उद्देश्य , पुस्तपालन एवं लेखांकन में अन्तर , लेखांकन की शाखाएं। लेखांकन सिद्धांत , लेखांकन मानक : अन्तर्राष्ट्रीय लेखांकन मानक (सिर्फ रूपरेखा) : भारत में लेखांकन मानक। लेखांकन व्यवहार : लेखांकन चक्र : पंजी (जर्नल) : डेबिट (विकलन) एवं क्रेडिट (समाकलन) के नियम, संयुक्त पंजी (जर्नल) प्रविष्टि, प्रारम्भिक प्रविष्टि : जर्नल एवं खाताबाही में सम्बन्ध, पूँजी एवं आगम : आय , व्यय एवं प्राप्तियों का वर्गीकरण।</p> <p>इकाई – 2 तलपट , अन्तिम खाते : निर्माणी खाता, व्यापार खाता, लाभ-हानि खाता, चिट्ठा एवं समायोजन प्रविष्टियाँ। अशुद्धियों का सुधार या संशोधन, अशुद्धियों का वर्गीकरण, अशुद्धियों की स्थिति, अशुद्धियों का सुधार, उचंत खाता लाभ पर प्रभाव।</p> <p>इकाई – 3 मूल्य ह्रास (अवक्षयण), आयोजन एवं संचय ;ह्रास की अवधारणा , ह्रास के कारण, ह्रास रिक्तता, अपलेखन ह्रास लेखांकन, ह्रास अभिलेखन की विधियाँ; विभिन्न सम्पत्तियों पर ह्रास आयोजन की विधियाँ; प्रतिस्थापन लागत पर ह्रास , भारतीय लेखांकन मानक के अनुसार लेखांकन नीतियाँ, आयोजन एवं संचय ;गैर-व्यापारिक संस्थाओं के खाते।</p> <p>इकाई – 4 विशेष लेखांकन क्षेत्र: (क) शाखा खाते : आश्रित शाखा, देनदार पद्धति , स्कन्ध एवं देनदार पद्धति। (ख) किराया क्रय एवं किस्त क्रय पद्धति : किराया क्रय अनुबन्ध का अर्थ, किराया क्रय अनुबन्ध संबंधित प्रॉवधान, अधिक मूल्य की वस्तुओं के लिए लेखांकन अभिलेख , किस्त क्रय पद्धति एवं क्रय पश्चात् सेवा।</p>	<p>इकाई – 1 लेखांकन का परिचय : विकास, परिभाषा, आवश्यकता, उद्देश्य , लेखांकन की शाखाएं ;लेखांकन के सिद्धांत , अवधारणा एवं परंपराएं। लेखांकन मानक : अन्तर्राष्ट्रीय लेखांकन मानक (सिर्फ रूपरेखा) : भारत में लेखांकन मानक। लेखांकन व्यवहार ;दोहरी प्रविष्टि प्रणाली की अवधारणा। पूँजी एवं आगम की अवधारणा, मूल प्रविष्टि की पुस्तकें: जर्नल, खाताबाही, जर्नल का विभाजन : रोकड़ पुस्तक।</p> <p>इकाई – 2 तलपट , अन्तिम खाते : निर्माणी खाता, व्यापार खाता, लाभ-हानि खाता, चिट्ठा एवं समायोजन प्रविष्टियाँ। अशुद्धियों का सुधार या संशोधन, अशुद्धियों का वर्गीकरण, अशुद्धियों की स्थिति, अशुद्धियों का सुधार, उचंत खाता लाभ पर प्रभाव।</p> <p>इकाई – 3 मूल्य ह्रास (अवक्षयण), आयोजन एवं संचय ;ह्रास की अवधारणा , ह्रास के कारण, ह्रास रिक्तता, अपलेखन ह्रास लेखांकन, ह्रास अभिलेखन की विधियाँ; विभिन्न सम्पत्तियों पर ह्रास आयोजन की विधियाँ; प्रतिस्थापन लागत पर ह्रास , भारतीय लेखांकन मानक के अनुसार लेखांकन नीतियाँ, आयोजन एवं संचय ;गैर-व्यापारिक संस्थाओं के खाते।</p> <p>इकाई – 4 विशेष लेखांकन क्षेत्र: किराया क्रय एवं किस्त क्रय पद्धति : किराया क्रय अनुबन्ध का अर्थ, किराया क्रय अनुबन्ध संबंधित प्रॉवधान, अधिक मूल्य की वस्तुओं के लिए लेखांकन अभिलेख , किस्त क्रय पद्धति एवं क्रय पश्चात् सेवा।</p> <p>इकाई – 5 साझेदारी खाते : साझेदारी फर्म का विघटन, साझेदारी फर्मों का एकीकरण, साझेदारी</p>

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 5</p> <p>(क) साझेदारी खाते : साझेदारी की सारभूत विशेषताएँ, साझेदारी संलेख ; अन्तिम खाते , खाते बंद होने के पश्चात् समायोजन; स्थिर एवं परिवर्तनशील पूँजी, ख्याति-लेखांकन मानक 10 संयुक्त जीवन बीमा पॉलिसी, लाभ विभाजन अनुपात में परिवर्तन, (ख) साझेदारी फर्म का पुननिर्माण ;फर्म में साझेदार का प्रवेश; साझेदार का अवकाश ग्रहण;साझेदार की मृत्यु, फर्म का विघटन, लेखांकन प्रविष्टियाँ, साझेदारी फर्म का दिवालिया होना, फर्म के विघटन की विधियाँ, लेखांकन प्रविष्टियाँ, साझेदार का दिवालिया होना, वितरण ।</p>	<p>फर्म की संयुक्त स्कन्ध प्रमण्डल में परिवर्तन।</p>

Suggested Readings:

1. Gupta, R.L. and Radhaswamy. M; Financial Accounting ; Sultan Chand and Sons, New Delhi. (Both Hindi and English medium)
2. Monga J.R. Ahuja Girish, and Sehgal Ashok : Financial Accounting ; Mayur Paper Back, Noida.
3. Shukla. M.C., Grewal T.S. and Gupta, S.C. : Advanced Accounts; S. Chand & Co.. New delhi.
4. Singh B.K. ; Financial Accounting; Wisdom Publishing House, Varanasi.
5. S.M. Shukla; Financial Accounting ; Sahitya Bhawan Publication ; Agra. (Both Hindi and English medium)
6. Karim & Khanuja ; Financial Accounting ; SBPD Publishing House ; Agra. (Both Hindi and English medium)
7. Agrawal & Mangal ; Financial Accounting; Universal Publication. (Both Hindi and English medium)

B.Com Part- I

Compulsory

Group – II Paper – I - Business Mathematics

OBJECTIVE – To enable the students to have such minimum knowledge of mathematics as is applicable to business and economic situations.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Calculus (problems and theorems involving trigonometrical ratios are not to be done) Differentiation : Partial derivatives up to second order ; Homogeneity of functions and Euler’s theorem. Maxima And Minima; Cases of one variable involving second or higher order derivatives: logarithm’s</p> <p>UNIT –II Matrices and Determinants : Definition of a matrix ; Type of a matrices ; Algebra of matrices ; Properties of determinants ; Calculation of values of determinants upto third order ; Adjoint of a matrix, elementary of row or column operations; Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.</p> <p>UNIT –III Linear Programming –Formulation of LLP : Graphical method of solution ; Problems relating to two variables including the case of mixed constraints ; Cases having no solution, multiple solutions : unbounded solutions and redundant constraints. Transportation Problem , Ratio & Proportion.</p> <p>UNIT –IV Compound interest and Annuities : Certain different types of interest rates ; Concept of present value and amount of a sum ; Types of annuities ; Present value and amount of an annuity, including the case of continuous compounding ; Valuation of simple loans and debentures; Problems relating to sinking funds.</p> <p>UNIT –V Average, Percentages, Commission Brokerage, Profit and loss.</p>	<p>UNIT –I Simultaneous Equations– Meaning, Characteristics, Methods of Solving Equations in Two Variables– Graphical, Substitution, Elimination and Cross Multiplication. Linear Programming –Formulation of LLP : Graphical method of solution ; Problems relating to two variables including the case of mixed constraints .</p> <p>UNIT –II Matrices and Determinants : Definition of a matrix ; Type of a matrices ; Algebra of matrices ; Properties of determinants ; Calculation of values of determinants upto third order ; Logarithm’s & Antilogarithm’s.</p> <p>UNIT –III Simple interest and Compound Interest . Annuities : Types of annuities ; Present value and amount of an annuity, including the case of continuous compounding ; Valuation of simple loans and debentures; Problems relating to sinking funds.</p> <p>UNIT –IV Ratio & Proportion. Average, Percentage.</p> <p>UNIT –V Commission, Brokerage, Discount, Profit and loss.</p>	<p>Omission of Calculus - Differentiation .</p> <p>Addition of Chapter Simultaneous Equation.</p> <p>Omission of Adjoint, elementary of row or column operations; inverse of a matrix.</p>

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समूह-2 प्रश्नपत्र – 1 – व्यावसायिक गणित

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 कलन : अवकलन : आंशिक अवकलज— द्वितीय क्रम तक, फलनो की समघातीयता एवं यूलर प्रमेय, उच्चिष्ठ एवं निम्निष्ठ – एक चर के द्वितीय या उच्च क्रम से जुड़े सवाल । लघुगणक ।</p> <p>इकाई – 2 आव्यूह एवं सारणिक : आव्यूह की परिभाषा , आव्यूह के प्रकार, आव्यूह बीजगणित, सारणिक के गुण, तृतीयक्रम के सारणिकों के मान की गणना, आव्यूह का सहखण्डज , पंक्ति या स्तम्भ मूल क्रियाएं, मूल पंक्ति या स्तम्भ क्रियाओं द्वारा आव्यूह का व्युत्क्रम ज्ञात करना , अद्वितीय हल रखने वाली तथा तीन से अधिक चर न रखने वाली युगपत् समीकरणों का हल ।</p> <p>इकाई – 3 रेखीय प्रक्रमन : रेखीय प्रक्रमन समस्या को गणितीय रूप में लिखना : ग्राफीक विधि से हल, समस्या का कोई सम्भव हल नहीं, अनेक हल, असीम समस्या का हल, व्यर्थ निबाध । परिवहन समस्या , अनुपात एवं समानुपात ।</p> <p>इकाई – 4 चक्रवृद्धि ब्याज एवं वार्षिकी : विभिन्न प्रकार की ब्याज दरें, वर्तमान मूल्य एवं मिश्रधन की गणना, वार्षिकी के प्रकार , वार्षिकी का वर्तमान मूल्य एवं मिश्रधन, ब्याज का सतत संयोजन, साधारण ऋण एवं ऋणपत्र का मूल्यांकन , शोधन निधि के प्रश्न ।</p> <p>इकाई – 5 औसत, प्रतिशतता, कमीशन एवं दलाली, लाभ एवं हानि</p>	<p>इकाई – 1 – युगपद् समीकरण – अर्थ, विशेषताएं, दो चर वाले समीकरण को हल करने की विधियाँ – रेखीय विधि,प्रतिस्थापन विधि, विलोपन विधि, वज्रगुणन विधि । रेखीय प्रक्रमन : रेखीय प्रक्रमन समस्या को गणितीय रूप में लिखना : ग्राफीक विधि से हल, द्विचर से संबंधित मिश्रित निबाध समस्याएं ।</p> <p>इकाई – 2 आव्यूह एवं सारणिक : आव्यूह की परिभाषा , आव्यूह के प्रकार, आव्यूह बीजगणित, सारणिक के गुण, तृतीयक्रम के सारणिकों के मान की गणना । लघुगणक एवं प्रतिलघुगणक ।</p> <p>इकाई – 3 साधारण ब्याज एवं चक्रवृद्धि ब्याज । वार्षिकी : वार्षिकी के प्रकार , वार्षिकी का वर्तमान मूल्य एवं मिश्रधन, ब्याज का सतत संयोजन, साधारण ऋण एवं ऋणपत्र का मूल्यांकन , शोधन निधि के प्रश्न ।</p> <p>इकाई – 4 अनुपात एवं समानुपात । औसत : साधारण, भारित एवं सांख्यिकीय औसत (समान्तर माध्य) । प्रतिशतता ।</p> <p>इकाई – 5 कमीशन, दलाली, बट्टा, लाभ एवं हानि । परिवहन समस्या ।</p>

Suggested Readings:

1. Dr. Amarnath Dikshit, Dr. Jinendra Kumar Jain; Business Mathematics ;Himalaya Publishing House, Mumbai. (Both Hindi and English medium)
2. N.K. Nag : Business Mathematics; Kalyani publication, New Delhi. .
3. Dr. V.K. Shukla. : Business Mathematics; Madhya Pradesh hindi Granth Academy: Bhopal.
4. S.M. Shukla; Business Mathematics; Sahitya Bhawan Publication ; Agra. (Both Hindi and English medium)
5. Dr. Karim & Agrawal ; Business Mathematics; SBPD Publishing House ; Agra. (Both Hindi and English medium)
6. Dr. Ramesh Mangal; Business Mathematics; Satish Printer and Publishers, Indore.

B.Com Part- I

Compulsory

Group – I Paper – II - BUSINESS COMMUNICATION

OBJECTIVE – To develop effective business communication skills among the students.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Introducing Business Communication : Definitions, concept and Significance of communication, Basic forms of communicating ; Communication models and process principles of effective communication; Theories of communication; Audience analysis. Self Development and Communication ; Development of positive personal attitudes, SWOT analysis; Vote’s model of interdependence ; Whole Communication.</p> <p>UNIT –II Corporate Communication : Formal and Informal communication networks; Grapevine; Miscommunication (Barriers) ; improving communication Practices in business communication ; Group discussions ; Mock interviews, Seminars; Effective listening exercises, Individual and group presentations and report writing.</p> <p>UNIT –III Writing skill : Planning business messages; Rewriting and editing; The first draft; Reconstructing the final draft; Business letters and memo formats; Appearance request letters; Good news and bad new letters; Persuasive letters; Sales letters; Collection letters; Office memorandum.</p> <p>UNIT –IV Report Writing : Introduction to a proposal, Short report and formal report , report preparation. Oral Presentation : Principles of oral presentation, factor affecting presentation, sales presentation, training presentation, conducting surveys, speeches to motivate, presentation skill.</p>	<p>UNIT –I Introducing Business Communication : Definitions, concept and Significance of communication, Basic forms of communicating ; Communication models and process; principles of effective communication; Theories of communication; Self-Development and Communication ; Development of positive personal attitudes, SWOT analysis;</p> <p>UNIT –II Corporate Communication : Formal and Informal communication networks; Grapevine; Miscommunication (Barriers) ; improving communication. Practices in business communication ; Group discussions ; Seminars; Effective Listening : Principles of effective listening; Factor affective listening exercises; Oral, Written, and video session, Audience analysis and feedback.</p> <p>UNIT –III Writing skill : Business letters – Defination, concepts ,structure, advantages disadvantage, need and kinds of business letter ,Essentials of effective business letter. Good news and bad new letters; Office memorandum. Writing Resume and Letter of Job Application.</p> <p>UNIT –IV Report Writing : Introduction to a proposal, Short report and formal report , report preparation. Oral Presentation : Principles of oral presentation, factor affecting presentation, sales presentation, training presentation, conducting surveys, speeches to motivate, presentation skill.</p>	<p>Omission of Vote’s model of interdependence.</p> <p>Balancing of Syllabus and omitted repeatation .</p>

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –V Non-Verbal Aspects of Communicating. Body Language : Kinesics, Proxemics, Para Language. Effective listening : Principles of effective listening; Factor affective listening exercises; Oral, Written, and video session. Interviewing skills : Appearing in interviews; Conducting interviews; writing resume and letter of application . Modern Forms of Communicating : Fax; E-Mail; video conferencing; etc. International Communication ; Cultural sensitiveness and cultural context ; Writing and presenting in international situations; Inter cultural factors in interactions; Adapting to Global business.</p>	<p>UNIT –V Non-Verbal Aspects of Communicating. Body Language : Kinesics, Proxemics, Para Language. Interviewing skills : Appearing in interviews; Conducting interviews; mock interview. Modern Forms of Communicating : Fax; E-Mail; video conferencing; etc. International Communication for global business.</p>	

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समूह-1 प्रश्नपत्र – 2 – व्यावसायिक संचार

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 व्यावसायिक संचार परिचय : परिभाषा , अवधारणाएं एवं संचार का महत्व, संचार के आधारभूत प्रकार एवं मॉडल एवं प्रभावी संचार के सिद्धांत , प्रक्रिया , श्रोता विश्लेषण। आत्म विकास एवं संचार , सकारात्मक व्यक्तिगत दृष्टिकोण का विकास , स्वीट विश्लेषण , मतों की परस्पर निर्भरता का प्रतिरूप।</p> <p>इकाई – 2 व्यावसायिक संस्था का संचार तंत्र :- औपचारिक एवं अनौपचारिक संचार तंत्र, अंगूरी लता संचार, संचार की बाधाएं एवं सुधार। व्यवहार में व्यावसायिक संचार :- सामूहिक परिचर्चा, साक्षात्कार, संगोष्ठी , प्रभावपूर्ण सूनना , व्यक्तिगत एवं सामूहिक प्रस्तुतीकरण एवं रिपोर्ट लेखन।</p> <p>इकाई – 3 लेखन कुशलता : व्यावसायिक संदेश की योजना एवं उसे संशोधित करना, प्रथम मसौदा, अंतिम मसौदा का पुनर्निर्माण , व्यावसायिक पत्र एवं ज्ञापन, प्रारूप : निवेदन पत्र , अनुकूल एवं प्रतिकूल संवाद पत्र, प्रेरक पत्र, विक्रय संबंधी पत्र, तकादे का पत्र या संग्रहण पत्र ,कार्यालयीन ज्ञापन व पत्र ।</p> <p>इकाई – 4 रिपोर्ट लेखन – एक प्रस्ताव का परिचय , लघु रिपोर्ट एवं औपचारिक रिपोर्ट ,रिपोर्ट लेखन की तैयारी। मौखिक प्रस्तुती : मौखिक प्रस्तुती के सिद्धांत , प्रस्तुतीकरण को प्रभावित करने वाले कारक, विक्रय प्रस्तुतीकरण , प्रशिक्षण प्रस्तुतीकरण, सर्वेक्षण आयोजित करना, प्रेरक भाषण, प्रभावी प्रस्तुती कौशल।</p>	<p>इकाई – 1 व्यावसायिक संचार परिचय : परिभाषा , अवधारणाएं एवं संचार का महत्व, संचार के आधारभूत प्रकार एवं मॉडल, प्रक्रिया एवं प्रभावी संचार के सिद्धांत । आत्म विकास एवं संचार , सकारात्मक व्यक्तिगत दृष्टिकोण का विकास , स्वीट विश्लेषण ।</p> <p>इकाई – 2 व्यावसायिक संस्था का संचार तंत्र :- औपचारिक एवं अनौपचारिक संचार तंत्र, अंगूरी लता संचार, संचार की बाधाएं एवं सुधार। व्यवहार में व्यावसायिक संचार :- सामूहिक परिचर्चा, संगोष्ठी , प्रभावपूर्ण सूनना : प्रभावपूर्ण सूनने के सिद्धांत, प्रभावपूर्ण सूनने के कारक, मौखिक , लिखित एवं विडियो सत्र का व्यवहारिक अध्ययन, श्रोता विश्लेषण एवं प्रतिपुष्टी।</p> <p>इकाई – 3 लेखन कुशलता : व्यावसायिक पत्र – परिभाषा, अवधारणा, संरचना, गुण दोष , आवश्यकता एवं विभिन्न प्रकार के व्यावसायिक पत्र , प्रभावी व्यापारिक पत्र व्यवहार के मूल तत्व। अनुकूल एवं प्रतिकूल संवाद पत्र, कार्यालयीन ज्ञापन व पत्र । जीवनवृत्त लेखन एवं नौकरी के लिए आवेदन पत्र।</p> <p>इकाई – 4 रिपोर्ट लेखन – एक प्रस्ताव का परिचय , लघु रिपोर्ट एवं औपचारिक रिपोर्ट ,रिपोर्ट लेखन की तैयारी। मौखिक प्रस्तुती : मौखिक प्रस्तुती के सिद्धांत , प्रस्तुतीकरण को प्रभावित करने वाले कारक, विक्रय प्रस्तुतीकरण , प्रशिक्षण प्रस्तुतीकरण, सर्वेक्षण आयोजित करना, प्रेरक भाषण, प्रभावी प्रस्तुती कौशल।</p>

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 5 अशाब्दिक संचार के पहलू – दैहिक भाषा : समय एवं पार्श्व भाषा , प्रभावपूर्ण सूचना : प्रभावपूर्ण सूचने के सिद्धांत, प्रभावपूर्ण सूचने के कारक, मौखिक , लिखित एवं विडियो सत्र का व्यवहारिक अध्ययन। साक्षात्कार कुशलता : साक्षात्कार में शामिल होना, साक्षात्कार का आयोजन, जीवनवृत्त – सारांश लेखन एवं आवेदन पत्र। संचार के आधुनिक रूप – फ़ैक्स , ई मेल, वीडियो कॉन्फ़ेसिंग आदि अंतरराष्ट्रीय संचार : सांस्कृतिक संवेदनशीलता एवं सांस्कृतिक संदर्भ , अंतरराष्ट्रीय स्थितियों में लेखन और प्रस्तुतीकरण करना : अंतरराष्ट्रीय क्रियाओं में अंतरराष्ट्रीय सांस्कृतिक कारक , वैश्विक व्यापार के संदर्भ में।</p>	<p>इकाई – 5 अशाब्दिक संचार के पहलू – दैहिक भाषा , समय एवं पार्श्व भाषा , साक्षात्कार कुशलता : साक्षात्कार में शामिल होना, साक्षात्कार का आयोजन, मॉक साक्षात्कार। संचार के आधुनिक रूप – फ़ैक्स , ई मेल, वीडियो कॉन्फ़ेसिंग आदि अंतरराष्ट्रीय संचार : सांस्कृतिक संवेदनशीलता एवं सांस्कृतिक संदर्भ , भूमण्डलीय व्यावसाय के लिए अंतरराष्ट्रीय संप्रेषण।</p>

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7. Dr. Mishra , Shukla & Patel ; Business Communication ; SBPD Publishing House, Agra. (Both Hindi and English medium)

B.Com Part- I

Compulsory

Group – II Paper – II – BUSINESS REGULATORY FRAMEWORK

OBJECTIVE – To provide a brief idea about the framework of Indian business laws.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Law of Contract (1872) : Nature of contract ; Classification ; Offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void; Performance of contract; Discharge of contract; Remedies for breach of contract.</p> <p>UNIT –II Special contracts; Indemnity ; Guarantee; Bailment and pledge; Agency.</p> <p>UNIT –III Sale of Goods Act (1930) ;Formation of contracts of sale ;Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sales; Unpaid seller and his rights; sale by auction; Hire purchase agreement.</p> <p>UNIT –IV Negotiable Instrument Act (1881) : Definition of negotiable instrument; Feature; Promissory note; Bill of exchange & cheque; Holder and holder in the due course; Crossing of a cheque, types of crossing; Negotiation; Dishonor and discharge of negotiable instrument.</p> <p>UNIT –V The Consumer Protection Act 1986 : Salient features; Definition of consumer ; Grievance redressal machinery; Foreign Exchange Management Act 2000 : Definition and main provisions, Right to Information Act 2005(Main Provision)</p>	<p>UNIT –I Law of Contract (1872) –I : Nature of contract ; Classification ; Offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void.</p> <p>UNIT –II Law of Contract (1872) - II : Performance of contract, Discharge of contract; Remedies for breach of contract. Special contracts; Indemnity ; Guarantee; Bailment and pledge; Agency.</p> <p>UNIT –III Sale of Goods Act (1930) ;Formation of contracts of sale ;Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sales; Unpaid seller and his rights; sale by auction; Hire purchase agreement.</p> <p>UNIT –IV Negotiable Instrument Act (1881) : Definition of negotiable instrument; Feature; Promissory note; Bill of exchange & cheque; Holder and holder in the due course; Crossing of a cheque, types of crossing; Negotiation; Dishonor and discharge of negotiable instrument.</p> <p>UNIT –V The Consumer Protection Act 1986 : Main Provision, Definition of consumer ,Consumer Disputes , Grievance redressal machinery ; Indian Partnership Act 1932. Limited Liabilities Partnership Act 2008. Introduction of Intellectual Property Right Act – Copyright, Patent & Trademark.</p>	<p style="text-align: center; background-color: yellow;">Balancing of Syllabus</p> <p>Replaced FEMA & RTI with Partnership act, LLP Act 2008 and Intellectual property right act.</p>

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समूह-2 प्रश्नपत्र – 2 – व्यावसायिक नियमन रूपरेखा

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 भारतीय अनुबंध अधिनियम (1872) : अनुबंध की प्रकृति : वर्गीकरण , प्रस्ताव तथा स्वीकृति, अनुबंध के योग्य पक्षकार , पक्षकारों की स्वतंत्र सहमति , प्रतिफल, उद्देश्य की वैधता , व्यर्थ घोषित ठहराव : अनुबंध का निष्पादन , अनुबंधों की समाप्ति , अनुबंध भंग के उपाय एवं परिणाम।</p> <p>इकाई – 2 विशिष्ट अनुबंध : क्षतिपूर्ति , प्रतिभूति, निक्षेप, गिरवी अनुबंध, एजेंसी।</p> <p>इकाई – 3 वस्तु विक्रय अधिनियम (1930) : वस्तु विक्रय अनुबंध का निर्माण , माल का वर्गीकरण , कीमत, शर्तें और आश्वासन , माल के स्वामित्व का हस्तांतरण, विक्रय अनुबंध का निष्पादन , अदत्त विक्रेता के अधिकार , नीलाम द्वारा विक्रय , किराया क्रय ठहराव।</p> <p>इकाई – 4 विनिमय साध्य विलेख अधिनियम (1881) : परिभाषाएं, विशेषताएं , प्रतिज्ञा पत्र, विनिमय विपत्र और धनादेश (चैक) : धारक तथा यथाविधिधारी , रेखांकित चैक, रेखांकन के प्रकार, परक्रामण, विनिमय साध्य विलेख का अनदारण व मुक्ति।</p> <p>इकाई – 5 उपभोक्ता संरक्षण अधिनियम (1986) : मुख्य विशेषताएं , उपभोक्ता की परिभाषा , उपभोक्ता विवाद निवारण अभिकरण। मुख्य प्रावधान , सूचना का अधिकार अधिनियम (2005) – मुख्य प्रावधान।</p>	<p>इकाई – 1 भारतीय अनुबंध अधिनियम (1872) : अनुबंध की प्रकृति : वर्गीकरण , प्रस्ताव तथा स्वीकृति, अनुबंध के योग्य पक्षकार , पक्षकारों की स्वतंत्र सहमति , प्रतिफल, उद्देश्य की वैधता , व्यर्थ घोषित ठहराव।</p> <p>इकाई – 2 अनुबंध का निष्पादन ; अनुबंधों की समाप्ति , अनुबंध भंग के उपाय एवं परिणाम। विशिष्ट अनुबंध : क्षतिपूर्ति , प्रतिभूति, निक्षेप , गिरवी अनुबंध, एजेंसी।</p> <p>इकाई – 3 वस्तु विक्रय अधिनियम (1930) : वस्तु विक्रय अनुबंध का निर्माण , माल का वर्गीकरण , कीमत, शर्तें और आश्वासन , माल के स्वामित्व का हस्तांतरण, विक्रय अनुबंध का निष्पादन , अदत्त विक्रेता के अधिकार , नीलाम द्वारा विक्रय , किराया क्रय ठहराव।</p> <p>इकाई – 4 विनिमय साध्य विलेख अधिनियम (1881) : परिभाषाएं, विशेषताएं , प्रतिज्ञा पत्र, विनिमय विपत्र और धनादेश (चैक) : धारक तथा यथाविधिधारी , रेखांकित चैक, रेखांकन के प्रकार, परक्रामण, विनिमय साध्य विलेख का अनदारण व मुक्ति।</p> <p>इकाई – 5 उपभोक्ता संरक्षण अधिनियम (1986) : मुख्य विशेषताएं , उपभोक्ता की परिभाषा , उपभोक्ता विवाद निवारण अभिकरण। भारतीय साझेदारी अधिनियम 1932। सीमित दायित्व वाली साझेदारी अधिनियम 2008। बौद्धिक संपदा अधिकार अधिनियम का परिचय – कॉपीराइट, पेटेंट एवं ट्रेडमार्क।</p>

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5. Prof. R. C. Agrawal; Business Regulatory Framework; SBPD Publishing House, Agra. (Hindi medium)
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7. R.L. Navlakha; Business Law; Ramesh Book depot, Jaipur. (Both Hindi and English medium)
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B.Com Part- I Compulsory

Group – III Paper – I– BUSINESS ENVIRONMENT

OBJECTIVE – To acquainting the students with the emerging issues in business at the national and international level in the light of the policies of liberalization and globalization.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Indian Business Environment : Concept, components and importance Economic Trends (overview) : Income : Saving and investment ; industry; Trade and balance of payment, Money ; Finance ; Prices.</p> <p>UNIT –II Problems of Growth : Unemployment ; Poverty ; Regional imbalances ; social injustice; Inflation ; Parallel economy ; Industrial sickness.</p> <p>UNIT –III Role of Government ; Monetary and fiscal policy ; Industrial policy ; Industrial licensing. Privatization ; Devaluation; Export-Import policy; Regulation of foreign investment; Collaborations in the light of recent changes.</p> <p>UNIT –IV Review of Previous Plans, the current five year Plan, major policy, Resources Allocation.</p> <p>UNIT –V International Environment ; international trading environment (overview); Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings ; International economic institutions – GATT. WTO World Bank. IMF; FDI; Counter trade.</p>	<p>UNIT –I Business Environment : Concept, Components and Importance ,Economic Trends (overview) : Income : Saving and investment ; Trade and balance of payment, Money and Finance .</p> <p>UNIT –II Problems of Growth : Unemployment ; Poverty ; Regional imbalances ; Social Injustice;Inflation ; Parallel economy ; Industrial sickness.</p> <p>UNIT –III Role of Government ; Monetary and fiscal policy ; Industrial policy ; Industrial licensing. Privatization ; Liberalisation, Globalisation Devaluation; Demonitisation; Export-Import policy.</p> <p>UNIT –IV Economic Planning in India : Need, objectives, Strategy; Review of Previous Plans, Planning Commission. Foreign Exchange Management Act 2000 : Basic Concept and Main Provisions.</p> <p>UNIT –V International Environment ; Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings – GATT. ,WTO ,UNCTAD, World Bank, IMF; FDI.</p>	<p>Addition of Liberalization, Globalization and Demonitisation.</p> <p>Addition of Planning Commission and omitted current five year plan.</p> <p>Addition of UNCTAD and omitted international trading environment.</p>

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समूह-3 प्रश्नपत्र – 1 – व्यावसायिक पर्यावरण

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 भारतीय व्यावसायिक पर्यावरण : अवधारणा, संघटक व महत्व। आर्थिक प्रवृत्तियाँ : आय, बचत एवं विनियोग, औद्योगिक प्रवृत्तियाँ; व्यापार एवं भुगतान सन्तुलन, मुद्रा , वित्त तथा कीमत।</p> <p>इकाई – 2 विकास की समस्याएँ : बेरोजगारी ,निर्धनता एवं क्षेत्रीय असन्तुलन, सामाजिक अन्याय, मुद्रास्फीति, समान्तर अर्थव्यवस्था , औद्योगिक रुग्णता।</p> <p>इकाई – 3 शासन की भूमिका : मौद्रिक एवं राजकोषीय नीति, औद्योगिक नीति, औद्योगिक लाइसेंसिंग नीति ,निजीकरण , अवमूल्यन, निर्यात-आयात नीति, विदेशी विनियोग का नियमन।</p> <p>इकाई – 4 पुर्व योजनाओं की समीक्षा , चालू पंचवर्षीय योजना : मुख्य रणनीति, संसाधनों आबंटन।</p> <p>इकाई – 5 अंतराष्ट्रीय पर्यावरण : अंतराष्ट्रीय व्यापारिक पर्यावरण , विश्व व्यापार की प्रवृत्ति एवं विकासशील देशों की समस्याएँ, विदेशी व्यापार एवं आर्थिक विकास , अंतराष्ट्रीय आर्थिक समूह- अंतराष्ट्रीय अर्थव्यवस्था की संस्थाये, विश्व व्यापार संगठन , व्यापार एवं प्रशुल्क एवं व्यापार संबंधि सामान्य समझौता (गैट) , विश्व बैंक , अंतराष्ट्रीय मुद्रा कोष , अंतराष्ट्रीय पुनर्निमाण एवं विकास बैंक, प्रति व्यापार , एफ. डी. आई.।</p>	<p>इकाई – 1 व्यावसायिक पर्यावरण : अवधारणा, संघटक व महत्व, आर्थिक प्रवृत्तियाँ : आय, बचत एवं विनियोग; व्यापार एवं भुगतान सन्तुलन, मुद्रा एवं वित्त।</p> <p>इकाई – 2 विकास की समस्याएँ : बेरोजगारी ,निर्धनता एवं क्षेत्रीय असन्तुलन, सामाजिक अन्याय, मुद्रास्फीति, समान्तर अर्थव्यवस्था , औद्योगिक रुग्णता।</p> <p>इकाई – 3 शासन की भूमिका (वर्तमान परिदृश्य में) : मौद्रिक एवं राजकोषीय नीति, औद्योगिक नीति, औद्योगिक लाइसेंसिंग नीति ,निजीकरण , उदारीकरण, भूमण्डलीकरण, अवमूल्यन, विमुद्रिकरण निर्यात-आयात नीति, विदेशी विनियोग का नियमन।</p> <p>इकाई – 4 भारत में आर्थिक नियोजन : आवश्यकता , उद्देश्य एवं व्यूहरचना, पुर्व पंचवर्षीय योजनाओं की समीक्षा , चालू पंचवर्षीय योजना। विदेशी विनिमय प्रबंध अधिनियम 2000 : अवधारणा एवं मुख्य प्रवधान।</p> <p>इकाई – 5 अंतराष्ट्रीय पर्यावरण : विश्व व्यापार की प्रवृत्ति एवं विकासशील देशों की समस्याएँ, विदेशी व्यापार एवं आर्थिक विकास , अंतराष्ट्रीय आर्थिक समूह- प्रशुल्क एवं व्यापार संबंधि सामान्य समझौता (गैट) , विश्व व्यापार संगठन, विश्व बैंक , अंतराष्ट्रीय मुद्रा कोष ,प्रत्यक्ष विदेशी निवेश, संयुक्त राष्ट्र व्यापार एवं विकास संगठन (अंकटाड)।</p>

Suggested Readings:

1. Agarwal A. N. : Indian Economy, Vikas Publishing House Delhi. (English medium)
2. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
3. Dutt R. and Sundharam K. Pm. ; Indian Economy; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. Dr. V.C. Sinha; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)
6. Dr. J. K. Jain; Business Environment; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Gupta & Pathak; Business Environment; Ram Prasad & Sons, Raipur. (Hindi medium)
8. S.K. Singh; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)

B.Com Part- I Compulsory

Group – III – Business Economics

Paper – II– BUSINESS ECONOMICS

OBJECTIVE – To acquaint the students with the principles of Business Economics as are applicable in business.

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –I Introduction : Basic problems of an economy ; Working of price mechanism. Elasticity of Demand ; Concept and measurement of elasticity of demand ; Price, income and cross elasticity ; Average revenue , marginal revenue, and elasticity of demand; Determinates of elasticity of demand; Importance of elasticity of demand.</p> <p>UNIT –II Production Function ; Law of variable proportions ; Iso-quants; Expansion path; Returns to scale; Internal and external economies and diseconomies.</p> <p>UNIT –III Theory of Costs : Short-run and long-run cost curves – traditional and modern approaches. Market Structures 1 Market structures and business decisions ; Objectives of a business firm. (a) Perfect Competition ; Profit maximization and equilibrium of firm and industry; Short-run and long-run supply curves; Price and output determination, Practical applications. (b) Monopoly : Determination of price under monopoly ; Equilibrium of a firm ; Comparison between perfect competition and monopoly; Multi-plant monopoly ; Price Discrimination. Practical applications.</p>	<p>UNIT –I Introduction : Definition ,Nature and Scope of Economics, Difference Between Micro and Macro Economics, Method of Economic Study : Inductive and Deductive Methods. Basic problem of Economy, Working of Price Mechanism. Utility Analysis: Measurements of Utility, Law of Diminishing Marginal Utility, Law of Equi-Marginal Utility.</p> <p>UNIT-II Law of demand: Meaning and Definitions, Effecting Factors, Types ; Exception of Law of demand. Elasticity of Demand : Concept, Definitions, Importance, Types and Measurement of Elasticity of Demand, Factors affecting the Elasticity of Demand.</p> <p>UNIT –III Production : Factors of Production ,their characteristics and importance. Production Functions : Law of Variable Proportions, Return to scale and Equal Product Curve Analysis. Internal and external economies and diseconomies.</p>	<p>Addition of Introduction of Economics, Method of Economic study & Utility Analysis.</p> <p>Addition of Law of Demand.</p> <p>Addition of Factor of Production.</p>

Present Syllabus	Proposed Syllabus	Remark
<p>UNIT –IV Market Structure</p> <p>(a) Monopolistic competition : Meaning and Characteristics; Price and output determination under monopolistic competition ; Product differentiations; Selling costs; Comparison with perfect competition; Excess capacity under monopolistic competition.</p> <p>(b) Oligopoly : Characteristics, indeterminate pricing and output Classical models of oligopoly ; Price leadership ; Collusive oligopoly.</p> <p>UNIT –V Factor Pricing-1 : Marginal Productivity theory and demand for factors; Nature of supply of factor inputs; Determination of wage rates under perfect competition and monopoly; Exploitation of labour. Factor pricing-II : Rent concept, Ricardian and modern theories of Rent quasirent. Interests concept and theories of interest ; Profit-nature , concept and theories of profit.</p>	<p>UNIT –IV Market Structure – Concept , Characteristics, Classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.</p> <p>UNIT –V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.</p>	

बी,कॉम. भाग – एक
अनिवार्य

समूह-3 प्रश्नपत्र – 2 – व्यावसायिक अर्थशास्त्र

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 परिचय : अर्थशास्त्र की मुख्य समस्याएं , कीमत संयंत्र के कार्य, मांग की लोच , मांग की लोच मापने की विधियां एवं अवधारणाएं : कीमत , आय तथा आडी लोच, औसत आगम, सीमान्त आगम एवं मांग की लोच , मांग की लोच का निर्धारण तथा मांग की लोच का महत्व।</p> <p>इकाई – 2 उत्पादन फलन, परिवर्तन अनुपात का नियम , समोत्पाद , विस्तार पथ, पैमाने के प्रतिफल , आंतरिक एवं बाह्य मितव्ययिता एवं अपमितव्ययिता।</p> <p>इकाई – 3 लागत अवधारणाएं , अल्पकालीन एवं दीर्घकालीन लागत वक्र, परम्परागत एवं आधुनिक विचारधारा। बाजार संरचना तथा व्यावसायिक निर्णयन, व्यावसायिक फर्म के उद्देश्य। (अ) पूर्ण प्रतियोगिता , लाभ अधिकतमीकरण तथा फर्म का साम्य , औद्योगिक अल्पकालीन एवं दीर्घकालीन पूर्ति वक्र, कीमत एवं उत्पाद निर्धारण। (ब) एकाधिकार : एकाधिकार में मूल्य निर्धारण , फर्म का साम्य , पूर्ण प्रतियोगिता एवं एकाधिकार में अन्तर ,एकाधिकार के अंतर्गत कीमत विभेद।</p> <p>इकाई – 4 बाजार संरचना: (अ)एकाधिकृत प्रतियोगिता : आशय एवं विशेषताएं , कीमत एवं उत्पाद निर्धारण , उत्पाद विभेद , विक्रय लागत, पूर्ण प्रतिस्पर्धा से तुलना , अतिरिक्त क्षमता सिद्धांत। (ब) अल्पाधिकार : विशेषताएं , कीमत एवं उत्पाद निर्धारण , परंपरागत मॉडल, कीमत नेतृत्व , कपटपूर्ण अल्पाधिकार।</p>	<p>इकाई – 1 परिचय: अर्थशास्त्र की परिभाषा, प्रकृति एवं क्षेत्र, व्यष्टि एवं समष्टि अर्थशास्त्र में भेद, आर्थिक अध्ययन की प्रणालियां : निगमन एवं आगमन। अर्थव्यवस्था की मूल समस्याएं, कीमत संयंत्र का कार्यकरण। उपयोगिता विश्लेषण – उपयोगिता की माप, सीमांत उपयोगिता ह्रास नियम , समसीमांत उपयोगिता नियम।</p> <p>इकाई – 2 मांग का नियम : अर्थ, परिभाषा , प्रभावित करने वाले घटक, मांग के रूप, मांग के नियम के अपवाद। मांग की लोच : अवधारणा, परिभाषा, महत्व, प्रकार एवं मापन की विधियां, मांग की लोच को प्रभावित करने वाले घटक।</p> <p>इकाई – 3 उत्पादन : उत्पादन के कारक ,उनकी विशेषताएं एवं महत्व। उत्पादन फलन : परिवर्तनशील अनुपातों का नियम , पैमाने का प्रतिफल ,समोत्पाद वक्र विश्लेषण। आंतरिक एवं बाह्य मितव्ययिता एवं अपमितव्ययिता।</p> <p>इकाई – 4 बाजार संरचना: अवधारणा, परिभाषाएं, विशेषताएं एवं वर्गीकरण। पूर्ण प्रतियोगिता, अपूर्ण प्रतियोगिता, एकाधिकारी प्रतियोगिता, एकाधिकृत प्रतियोगिता ,अल्पाधिकार एवं द्वयाधिकार में कीमत निर्धारण।</p> <p>इकाई – 5</p>

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 5 कीमत कारक– I सीमान्त उत्पादकता सिद्धांत तथा मांग कारक, पूर्ति की प्रकृति, पूर्ण प्रतियोगिता एवं एकाधिकार में मजदूरी दर का निर्धारण ,श्रम का शोषण। कीमत कारक – II – लगान अवधारणा , रिकार्डों का लगान सिद्धांत तथा लगान का आधुनिक सिद्धांत , ब्याज अवधारणा तथा ब्याज का सिद्धांत लाभ की प्रकृति , अवधारणा तथा लाभ के सिद्धांत।</p>	<p>वितरण का सिद्धांत : सीमान्त उत्पादकता का सिद्धांत , मजदूरी, लगान, ब्याज एवं लाभ की अवधारणा एवं सिद्धांत ।</p>

Suggested Readings:

1. John P. Gould, Jr. and Edward P. Lazear: Micro economic theory; All India Traveller, Delhi. (English medium)
2. Koutsoyianni A. : Modern Microeconomics: Macmillan, New Delhi. (English medium)
3. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. M. L. Jhingan : Micro Economics, Vrinda publication, Delhi. (Both English and Hindi medium)
6. Dr. J. K. Jain; Business Economics; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Dr. V.C. Sinha; Business Economics; SBPD Publishing House, Agra. (Both English and Hindi medium)
8. Dr. Jai Prakash Misra; Business Economics; Sahitya Bhawan Publication, Agra. (Hindi medium)

**SYLLABUS
B.COM. PART-II**

GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
A. Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
B. Three Compulsory Groups			
Group-I			
I. Corporate Accounting	75 }	150	50
II. Company Law	75 }		
Group-II			
I. Cost Accounting	75 }	150	50
II. Principles of Bus. Management	75 }		
Group-III			
I. Business Statistics	75 }	150	50
II. Fundamental of Entrepreneurship	75 }		

B.Com.II year

COMPULSORY

Group - I PAPER - I (CORPORATE ACCOUNTING)

OBJECTIVE

This course enable the students to develop awareness about corporate accounting in conformity with the provisions of companies Act.

(As per company act 2013)

Current Syllabus	Proposed Syllabus	Remark
UNIT-I Issue, Forfeiture, and Re-issue of Shares : Redemption of preference shares; Issue and redemption of debentures.	UNIT-I Issue, Forfeiture, and Re-issue of Shares : Redemption of preference shares; Issue and redemption of debentures.	
UNIT-II Final Accounts; Excluding computation of managerial remuneration, and disposal of profit, Liquidation of Company.	UNIT-II Final Accounts (as per company act 2013) Liquidation of Company.	Ommission of managerial remuneration, and disposal of profit
UNIT-III Valuation of Goodwill and Shares.	UNIT-III Valuation of Goodwill and Shares.	
UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard 14; Accounting for internal reconstruction - excluding intercompany holdings and re-construction schemes.	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard 14; Accounting for internal reconstruction - excluding intercompany holdings and re-construction schemes.	
UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only. <u>Final Account of Banking Companies.</u>	UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only.	Ommission Final Account of Banking Companies.

SUGGESTED READINGS :

1. Dr. S.M. Shukla, Sahitya Bhawan Agra.
2. Dr. Mangal Mehta & Agrawal Published - Indore.
3. Dr. Karim Khanuja - Published - Agra.
4. Gupta R.L., Radhaswamy M; Company Accounts; Sultan Chand & Sons, New Delhi.

Group - II PAPER - I (COST ACCOUNT)

OBJECTIVE

This course exposes the students to the basic concepts and the tools used in cost accounting.

Current Syllabus	Proposed Syllabus	Remark
<p>UNIT-I Introduction : Nature and scope of cost accounting ; Cost concepts and classification; Methods and techniques; Installation of costing system; Concept of cost audit. Accounting for Material : Material Control; Concept and techniques; Pricing of material issues; Treatment of material losses.</p>	<p>UNIT-I Introduction : Nature and scope of cost accounting ; Cost concepts and classification; Methods and techniques; Installation of costing system; Concept of cost audit. Accounting for Material : Material Control; Concept and techniques; Pricing of material issues; Treatment of material losses.</p>	
<p>UNIT-II Accounting for Labour : Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment - time and piece rates; Incentive schemes. Accounting for overheads; Classification and departmentalization; Absorption of overheads; Determination of overhead rates; Under and over absorption, and its treatment.</p>	<p>UNIT-II Accounting for Labour : Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment - time and piece rates; Incentive schemes. Accounting for overheads; Classification and departmentalization; Absorption of overheads; Determination of overhead rates; Under and over absorption, and its treatment.</p>	
<p>UNIT-III Cost Ascertainment : Unit costing; Job, batch and contract costing.</p>	<p>UNIT-III Cost Ascertainment : Unit costing; Job, batch and contract costing.</p>	
<p>UNIT-IV Operating costing; Process Costing - excluding inter - process profits, and joint and by - products.</p>	<p>UNIT-IV Operating costing; Process Costing - excluding inter - process profits, and joint and by - products.</p>	
<p>UNIT-V Cost Records : Intergal and non - integral system; Reconciliation of cost and financial accounts; Break Even Point.</p>	<p>UNIT-V Cost Records : Intergal and non - integral system; Reconciliation of cost and financial accounts; Break Even Point.</p>	

SUGGESTED READINGS :

1. M.L. Agrawal : Sahitya Bhawan Agra.
2. Maheshwari S.N. : Advanced Problems and Solutions in Cost Accounting; Sultan Chand, New Delhi.
3. Arora M.N. : Cost Accounting - Principles and Practice; Vikas, New Delhi.
4. Jain S.P. and Narang K.L. : Cost Accounting; Kalyani New Delhi.

Group - II - PAPER - II
PRINCIPLES OF BUSINESS MANAGEMENT

OBJECTIVE

This Course familiarizes the students with the basics of principles of management.

Current Syllabus	Proposed Syllabus	Remark
UNIT-I Introduction : Concept, nature, process, and significance of management; management roles (Mintzberg); An overview of functional areas of management; Development management thought; Classical and neo-classical systems; Concept approaches.	UNIT-I Introduction : Concept, nature, process, and significance of management; management roles (Mintzberg); An overview of functional areas of management; Development management thought; Classical and neo-classical systems; Concept approaches.	
UNIT-II Planning : Concept, process and types. Decision making - concept and Bounded rationality; Management by objectives; Corporate planning; Environment analysis and diagnosis; Strategy formulation.	UNIT-II Planning : Concept, process and types. Decision making - concept and Bounded rationality; Management by objectives; Corporate planning; Environment analysis and diagnosis; Strategy formulation.	
UNIT-III Organizing : Concept, nature, process and significance; Authority and resident relationships; Centralization and decentralization; Departmentation; Organization structure - forms and contingency factors.	UNIT-III Organizing : Concept, nature, process and significance; Authority and resident relationships; Centralization and decentralization; Departmentation; Organization structure - forms and contingency factors.	
UNIT-IV Motivating and Leading People at work : Motivation - concept; Theories Herzberg, McGregor, and Ouchi; Financial and non-financial incentives. Leadership - concept and leadership styles; Leadership theories (Tannenb Schmidt.); Likert's System Management; Communication - nature, process, networks, and barriers, Effective Communication.	UNIT-IV Motivating and Leading People at work : Motivation - concept; Theories Herzberg, McGregor, and Ouchi; Financial and non-financial incentives. Leadership - concept and leadership styles; Leadership theories (Tannenb Schmidt.); Likert's System Management; Communication - nature, process, networks, and barriers, Effective Communication.	
UNIT-V Managerial Control : Concept and process; Effective control system; Technical control - traditional and modern. Management of Change : Concept, nature, and process of planned Resistance to change; Emerging horizons of management in a environment.	UNIT-V Managerial Control : Concept and process; Effective control system; Technical control - traditional and modern. Management of Change : Concept, nature, and process of planned Resistance to change; Emerging horizons of management in a environment.	

SUGGESTED READINGS :

1. Dr. R.C. Agrawal, Agra.
2. Dr. S.C. Saxena, Agra.
3. Wehrich and Koontz, et al : Essentials of Management; Tata McGraw Hill, New Delhi.

Group - I - PAPER - II
COMPANY LAW

OBJECTIVE

This objective of this course is to provide basic knowledge of the provisions Companies Act. 2013, along with relevant case law.

Current Syllabus	Proposed Syllabus	Remark
UNIT-I Corporate personalities; Kinds of Companies, Nature & Scope, promotion on and incorporation of companies.	UNIT-I Corporate personalities; Kinds of Companies, Nature & Scope, promotion on and incorporation of companies.	
UNIT-II Memorandum of Association; Articles of Association; Prospectus, Shares; share capital - transfer and transmission.	UNIT-II Memorandum of Association; Articles of Association; Prospectus, Shares; share capital - transfer and transmission.	
UNIT-III Capital management - borrowing powers, mortgages and charges, debentures. Directors - Managing Director, whole time director, Appointment, Remuneration, and duties.	UNIT-III Capital management - borrowing powers, mortgages and charges, debentures. Directors - Managing Director, whole time director, Appointment, Remuneration, and duties.	
UNIT-IV Company meetings - kinds, Notice, quorum, voting, proxy, resolutions, minutes.	UNIT-IV Company meetings - kinds, Notice, quorum, voting, proxy, resolutions, minutes.	
UNIT-V majority powers and minority rights; Prevention of oppression and mismanagement. Winding up - kinds and conduct.	UNIT-V majority powers and minority rights; Prevention of oppression and mismanagement. Winding up - kinds and conduct.	

SUGGESTED READINGS :

1. Singh Avtar : Company Law; Eastern Book Co., Lucknow.
2. Dr. S.M. Shukla, Shahitya Bhawan Agra.
3. Dr. R.C. Agrawal, Shahitya Bhawan Agra.
4. Kapoor N.D. : Company Law - Incorporating the Provisions of the companies Amendment Act, 2013 Chand & Sons, New Delhi.

Group - III - PAPER - I

BUSINESS STATISTICS

OBJECTIVE

It enable the students to gain understanding of statistical techniques as are applicable to business.

Current Syllabus	Proposed Syllabus	Remark
UNIT-I Introduction : Statistics as a subject; Descriptive Statistics - compared to Inferential Statistics; Types of data; Summation operation; Rules of Sigma E operations, Analysis of University Data; Construction of a frequency distribution; Concept of central tendency.	UNIT-I Introduction : Statistics as a subject; Descriptive Statistics - compared to Inferential Statistics; Types of data; Summation operation; Rules of Sigma E operations, Analysis of University Data; Construction of a frequency distribution; Concept of central tendency.	
UNIT-II Dispersion - and their measures; Partition values; Moments; Skewness and measures; Kurtosis and measures.	UNIT-II Dispersion - and their measures; Partition values; Skewness and measures;	Omission of movements & Kurtosis
UNIT-III Analysis of Bivariate Data : Linear regression two variables and correlation.	UNIT-III Analysis of Bivariate Data : Linear regression two variables and correlation.	
UNIT-IV Index Number; Meaning, types, and uses; Methods of Constructing price and quantity indices (simple and aggregate); Tests of adequacy; Chain - base index numbers; Base shifting, splicing and deflating; Problems in constructing index numbers; Consumer price index. Analysis of Time Series : Cause of Variation in time series data; Components of a time series; Decomposition - Additive and Multiplicative models; Determination of trend - Moving Averages Method and method of least squares (including linear, second degree, parabolic, and exponential trend); Computation of seasonal indices by simple averages, ratio - to - trend, ratio - to - moving average, and link relative methods.	UNIT-IV Index Number; Meaning, types, and uses; Methods of Constructing price and quantity indices (simple and aggregate); Tests of adequacy; Chain - base index numbers; Base shifting, splicing and deflating; Problems in constructing index numbers; Consumer price index. Analysis of Time Series : Cause of Variation in time series data; Components of a time series; Decomposition - Additive and Multiplicative models; Determination of trend - Moving Averages Method and method of least squares (including linear, second degree, parabolic, and exponential trend); Computation of seasonal indices by simple averages, ratio - to - trend, ratio - to - moving average, and link relative methods.	
UNIT-V Forecasting and Methods : Forecasting - concept, types and importance; General approach to forecasting; Methods of forecasting; demand; Industry Vs Company sales forecast; Factors affecting company sales. Theory of Probability : as a concept; The three approaches to defining probability; Addition and multiplication laws of probability; Conditional Probability; Bayes' Theorem; Expectation and Variance of a random variable.	UNIT-V Forecasting and Methods : Forecasting - concept, types and importance; General approach to forecasting; Methods of forecasting; demand; Industry Vs Company sales forecast; Factors affecting company sales. Theory of Probability : as a concept; The three approaches to defining probability; Addition and multiplication laws of probability; Conditional Probability; Bayes' Theorem; Expectation and Variance of a random variable.	

SUGGESTED READINGS :

1. S.M.Shukla, Shahitya Bhawan, Agara.
2. Statistical Analysis, Dr. Rajesh Shukla and J.B. Agrawal

Group - III PAPER - II

FUNDAMENTALS OF ENTREPRENEURSHIP

OBJECTIVE

It Provides exposure to the students to the entrepreneurial culture and industrial growth so as to preparing them to set up and manage their own small units.

Current Syllabus	Proposed Syllabus	Remark
UNIT-I Introduction : The entrepreneur; Definition; Emergence of entrepreneurial class; Theories of entrepreneurship; Role of socio - economic environment; Characteri-stics.	UNIT-I Introduction : The entrepreneur; Definition; Emergence of entrepreneurial class; Theories of entrepreneurship; Role of socio - economic environment; Characteri-stics.	
UNIT-II Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social and technological; Competitive factors; Legal requirements for establishment of a new unit, and raising of funds; Venture capital sources and documentation required.	UNIT-II Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social and technological; Competitive factors; Legal requirements for establishment of a new unit, and raising of funds; Venture capital sources and documentation required.	
UNIT-III Entrepreneurial Behavior : Innovation and entrepreneur; Entrepreneurial behavior and Psycho - Theories, Social responsibility.	UNIT-III Entrepreneurial Behavior : Innovation and entrepreneur; Entrepreneurial behavior and Psycho - Theories, Social responsibility.	
UNIT-IV Entrepreneurial Development Programs (EDP) : EDP, their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.	UNIT-IV Entrepreneurial Development Programs (EDP) : EDP, their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.	
UNIT-V Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth, bringing about social stability and balanced regional development of industries; Role in export promotion and import substitution, forex earnings, and augmenting and meeting local demand.	UNIT-V Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth, bringing about social stability and balanced regional development of industries; Role in export promotion and import substitution, forex earnings, and augmenting and meeting local demand.	

SUGGESTED READINGS :

3. Srivastava S.B. : A Practical Guide to industrial Entrepreneurs; Sultan Chand and Sons, New Delhi.
4. Tandon B.C. : Environment and Entrepreneur; Chugh Publications, Allahabad.
5. Prasanna Chandra : Project Preparation, Appraisal, Implementation; Tata McGrow Hill, New Delhi.

COMPUTER APPLICATION
MARKS DISTRIBUTION PAPER - I
INTERNET APPLICATION & E-COMMERCE

Current Syllabus	Proposed Syllabus	Remark
<p>UNIT - I Introduction to HTML</p> <p style="text-align: center;">Introduction to Internet & World Wide Web</p> <p>Internet- Indian and the Internet, Profile of Indian Surfer, History of the Internet, Indian Internet History, Technological Foundation of Internet, Application in Internet Environment, Movement of files/data between two computers, TCP/IP, IP Addresses, Domain Name System, Domain Name Services, allocation of second level domains in India, Internet & India.</p> <p>World Wide Web (WWW) - WWW consortium browsing and Information retrieval, exploring the WWW, address : URL.</p>	<p>UNIT - I Introduction to HTML</p> <p style="text-align: center;">Introduction to Internet & World Wide Web</p> <p>Internet- Indian and the Internet, Profile of Indian Surfer, History of the Internet, Indian Internet History, Technological Foundation of Internet, Application in Internet Environment, Movement of files/data between two computers, TCP/IP, IP Addresses, Domain Name System, Domain Name Services, allocation of second level domains in India, Internet & India.</p> <p>World Wide Web (WWW) - WWW consortium browsing and Information retrieval, exploring the WWW, address : URL.</p>	
<p>UNIT - II</p> <p style="text-align: center;">Introduction to HTML & Designing Web Page</p> <p>Concept to Website, Web standards, What is HTML, HTML documents / file, HTML Editor, Explanation of the structure of Homepage, Elements in HTML Documents, HTML Elements, HTML Tags & Basic HTML Tags, viewing the source of web page & downloading the web page source, Extensible HTML, CSS, XML, XSL.</p> <p>HTML Document Structure - Head Section</p> <p>IIIustration of Document Structure, Mark-up elements within the Head : BASE, ISINDEX, LINK, META, TITLE, SCRIPT.</p>	<p>UNIT - II</p> <p style="text-align: center;">Introduction to HTML & Designing Web Page</p> <p>Concept to Website, Web standards, What is HTML, HTML documents / file, HTML Editor, Explanation of the structure of Homepage, Elements in HTML Documents, HTML Elements, HTML Tags & Basic HTML Tags, viewing the source of web page & downloading the web page source, Extensible HTML, CSS, XML, XSL.</p> <p>HTML Document Structure - Head Section</p> <p>IIIustration of Document Structure, Mark-up elements within the Head : BASE, ISINDEX, LINK, META, TITLE, SCRIPT.</p>	
<p>UNIT - III</p> <p style="text-align: center;">HTML Document Structure & HTML Forms</p> <p>Body Section - IIIustration, Body elements,</p>	<p>UNIT - III</p> <p style="text-align: center;">HTML Document Structure & HTML Forms</p> <p>Body Section - IIIustration, Body</p>	

<p>Background, TEXT BODY element, ADDRESS, BLOCKQUOTE, TABLE, COMMENTS, CHARACTER Emphasis modes, Logical styles, Physical Styles, FONT, BASEFONT and CENTER.</p> <p>Image, Internal and External Linking Between Web Pages - IMG Elements, HEIGHT, WIDTH, ALT, ALLIGN, Illustration of IMG elements, Hypertext Anchors, NAME attribute in Anchor.</p> <p>HTML Forms - Forms, Form tag, Form Structure, Input types, Drop down menu or select menu tags, image buttons.</p>	<p>elements, Background, TEXT BODY element, ADDRESS, BLOCKQUOTE, TABLE, COMMENTS, CHARACTER Emphasis modes, Logical styles, Physical Styles, FONT, BASEFONT and CENTER.</p> <p>Image, Internal and External Linking Between Web Pages - IMG Elements, HEIGHT, WIDTH, ALT, ALLIGN, Illustration of IMG elements, Hypertext Anchors, NAME attribute in Anchor.</p> <p>HTML Forms - Forms, Form tag, Form Structure, Input types, Drop down menu or select menu tags, image buttons.</p>	
<p>UNIT - IV</p> <p>Introduction to E-Commerce & Business Strategy in Electronic Age</p> <p>E-Commerce - Scope & definition of language, E-commerce & Trade cycle, E-markets, E-Data Interchange, Internet Commerce, E-commerce in Perspective.</p> <p>Business Strategy - The value chain, competitive advantage, business strategy, Case-Study : e-commerce in Passenger Air Transport.</p>	<p>UNIT - IV</p> <p>Introduction to E-Commerce & Business Strategy in Electronic Age</p> <p>E-Commerce - Scope & definition of language, E-commerce & Trade cycle, E-markets, E-Data Interchange, Internet Commerce, E-commerce in Perspective.</p> <p>Business Strategy - The value chain, competitive advantage, business strategy, Case-Study : e-commerce in Passenger Air Transport.</p>	
<p>UNIT - V</p> <p>B to B e-Commerce & B to C e-Commerce</p> <p>Business to Business e-Commerce - Inter-organisational Transactions, Electronic markets, Electronic Data Interchange (EDI) - the nuts and bolts, EDI and business, Inter roganizational e-Commerce.</p> <p>Business to Consumer e-Commerce - Consumer trade transactions.</p> <p>The elements of e-Commerce - elements, e-visibility, e-shop online payments, delivering the goods, after sales service, Internet e-Commerce Security A web site evaluation model.</p> <p>e-Business - Introduction, Internet Bookshops, Software Supplies & support, e-newspapers, internet banking, virtual auctions, online share dealing, gambling on net, e-diversity.</p>	<p>UNIT - V</p> <p>B to B e-Commerce & B to C e-Commerce</p> <p>Business to Business e-Commerce - Inter-organisational Transactions, Electronic markets, Electronic Data Interchange (EDI) - the nuts and bolts, EDI and business, Inter roganizational e-Commerce.</p> <p>Business to Consumer e-Commerce - Consumer trade transactions.</p> <p>The elements of e-Commerce - elements, e-visibility, e-shop online payments, delivering the goods, after sales service, Internet e-Commerce Security A web site evaluation model.</p> <p>e-Business - Introduction, Internet Bookshops, Software Supplies & support, e-newspapers, internet banking, virtual auctions, online share dealing, gambling on net, e-diversity.</p>	

COMPUTER APPLICATION
PAPER - II
RELATIONAL DATABASE MANAGEMENT SYSTEM

Current Syllabus	Proposed Syllabus	Remark
<p>UNIT - I</p> <p>DATABASE SYSTEM CONCEPT & ENTITY RELATIONSHIP MODEL :</p> <p>Operational data, why database, data independence, an Architecture for a Data base system, DDL & DML, Data Dictionary, Data Structures and Corresponding Operators, Data Models, The Relational approach, The Network approach, DBMS storage structure and access method. Entity-Relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; strong and weak entities Generatization; Specialization and aggregation. Converting and ER-model into relational.</p>	<p>UNIT - I</p> <p>DATABASE SYSTEM CONCEPT & ENTITY RELATIONSHIP MODEL :</p> <p>Operational data, why database, data independence, an Architecture for a Data base system, DDL & DML, Data Dictionary, Data Structures and Corresponding Operators, Data Models, The Relational approach, The Network approach, DBMS storage structure and access method. Entity-Relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; strong and weak entities Generatization; Specialization and aggregation. Converting and ER-model into relational.</p>	
<p>UNIT - II</p> <p>Relational Database Management System</p> <p>Relational Model : Structure to Relational Database, Relational Algebra, The Domain Relational, Calculus, Extended Relational- Algebra Operation, Modification of database, Views. Relational Database Design :- Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization : INF, 2NF, BCNF, 3NF, 4NF, 5NF operations not involving cursors, Operations involving cursors, dynamic statements, security & intergrity security specification in SQL.</p>	<p>UNIT - II</p> <p>Relational Database Management System</p> <p>Relational Model : Structure to Relational Database, Relational Algebra, The Domain Relational, Calculus, Extended Relational- Algebra Operation, Modification of database, Views. Relational Database Design :- Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization : INF, 2NF, BCNF, 3NF, 4NF, 5NF operations not involving cursors, Operations involving cursors, dynamic statements, security & intergrity security specification in SQL.</p>	

<p>UNIT - III</p> <p>RELATIONAL DATABASE DESIGN :</p> <p>Relational Algebra, Traditional Set Operations, Attributes Names for Derived Relations, special relational operations, further normalization, functional dependence. First, second and third normal forms, BCNF Forms, relations with more than one candidate key, Good and bad decompositions, fourth normal form, fifth normal form, De-normalization.</p>	<p>UNIT - III</p> <p>RELATIONAL DATABASE DESIGN :</p> <p>Relational Algebra, Traditional Set Operations, Attributes Names for Derived Relations, special relational operations, further normalization, functional dependence. First, second and third normal forms, BCNF Forms, relations with more than one candidate key, Good and bad decompositions, fourth normal form, fifth normal form, De-normalization.</p>	
<p>UNIT - IV</p> <p>Introduction to RDBMS Software - Oracle</p> <p>(a) Introduction : Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL * PLUS.</p> <p>(b) DDL and DML : Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views : What is Views, Create, Drop and Retrieving data from views.</p>	<p>UNIT - IV</p> <p>Introduction to RDBMS Software - Oracle</p> <p>(a) Introduction : Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL * PLUS.</p> <p>(b) DDL and DML : Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views : What is Views, Create, Drop and Retrieving data from views.</p>	
<p>UNIT - V</p> <p>(a) Security : Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.</p> <p>(b) PL/SQL : Block Structure in PL/SQL, Variable and constants, Running PL/SQL in the SQL*PLUS, Data base Access with PL/SQL, Exception Handling, Record Data type in PL/S!L, Triggers in PL/SQL.</p>	<p>UNIT - V</p> <p>(a) Security : Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.</p> <p>(b) PL/SQL : Block Structure in PL/SQL, Variable and constants, Running PL/SQL in the SQL*PLUS, Data base Access with PL/SQL, Exception Handling, Record Data type in PL/S!L, Triggers in PL/SQL.</p>	

**SYLLABUS
B.COM. PART-III**

**GROUPING OF SUBJECTS AND SCHEME OF
EXAMINATION**

Subject		Max.	Min.
Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
Compulsory Groups			
Group-I			
I. Income Tax	75	} 150	50
II. Auditing	75		
Group-II			
I. Indirect Taxes	75	} 150	50
II. Management Accounting	75		
Group-III Optional			
Option Group A (Finance Area)			
I. Financial Management	75	} 150	50
II. Financial Market Operations	75		
Option Group B (Marketing Area)			
I. Principles of Marketing	75	} 150	50
II. International Marketing	75		
Option Group C (Commercial Area)			
I. Information Technology and its Applications in Business	75	} 150	50
II. Essential of e-Commerce	75		
Option Group D (Money Banking & Insurance Area)			
I. Fundamental of Insurance	75	} 150	50
II. Money & Banking System	75		

B.COM PART III

COMPULSORY CORE COURSE

TITLE OF PAPER - Group-I - PAPER – I - INCOME TAX

OBJECTIVE

It enables the students to know the basics of Income Tax Act and its implications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Basic Concepts : Income, agricultural Income, casual income, assessment year, previous year, gross total income, total income, person. Basis of charge : Scope of total income, residence and tax liability, income which does not form part of total income.	UNIT-I Basic Concepts : Income, agricultural Income, casual income, assessment year, previous year, gross total income, total income, person. Basis of charge : Scope of total income, residence and tax liability, income which does not form part of total income.	No change
UNIT-II Heads of Income : Salaries; Income from house property.	UNIT-II Heads of Income : Salaries; Income from house property.	No change
UNIT-III Profit and gains of business or profession, including provisions relating to specific business; Capital gains, Income from other sources.	UNIT-III Profit and gains of business or profession, including provisions relating to specific business; Capital gains, Income from other sources.	No change
UNIT-IV Computation of Tax Liability : Set-off and carry forward of losses; Deduction from gross total income. Aggregation of income; Computation of total income and tax liability of and individual, H.U.F., and firm.	UNIT-IV Computation of Tax Liability : Set-off and carry forward of losses; Deduction from gross total income. Aggregation of income; Computation of total income and tax liability of individual and & HUF,	Omitted firm.
UNIT-V Tax Management : Tax deduction at source; Advance payment of tax; Assessment procedures; Tax planning for individuals. Tax evasion, Tax Avoidance and Tax planning. Tax	UNIT-V Tax Management : Tax deduction at source; Advance payment of tax; Assessment procedures; Tax planning for individuals. Tax evasion, Tax Avoidance and Tax planning. Tax	Addition of practical work relating important

Administration : Authorities, appeals, penalties.	Administration : Authorities, appeals, penalties. Preparation of return of income -Manually and on line	forms.
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Suggested Reading :

1. Singhanian V.K. : Students Guide to Income Tax; Taxmann, Delhi.
2. Prasad, Bhagwati : Income Tax Law & Practice; Wily Publication, New Delhi.
3. Mehrotra H.C. : Income Tax Law & Accounts : Sahitya Bhawan, Agra.
4. Girish Ahuja and Ravi Gupta : Systematic approach to income tax : Sahitya Bhawan Publications, New Delhi.
5. Chandra Mahesh and Shukla D.C. : Income Tax Law and Practice; Pragati Publications, New Delhi.
6. R.K. Jain : Income Tax & Law (Hindi & English) Sahitya Bhawan, Publication, Agra

B.COM PART III

COMPULSORY CORE COURSE

PAPER – II

Group-II - PAPER – I - **INDIRECT TAXES WITH GST**

OBJECTIVE

This course aims at imparting basic knowlege about GST and apply the provisions of GST law to various situations.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Central Excise : Nature and scope of Central Excise; Important terms and definitions under the Central Excise Act; General procedures of central excise; Clearance and excisable goods; Concession to small scale industry under Central Excise Act.	UNIT-I Customs : Role of customs in international trade; Important terms and definitions goods; Duty; Exporter; Foreign going vessel; Aircraft goods; Import; Import Manifest; Importer; Prohibited goods; Shipping bill; Store; Bill of lading; Export manifest; Letter of credit; Kinds of duties - basic, auxillary, additional or coutervailing; Basics of levyadvalorem,specific duties; Prohibition of export and import of goods, and provisions regarding notified & specified goods; Import of goods - Free import and restricted import; Type of import - import of cargo, import of personal baggage, import ofstores.Clearance Procedure - For home consumption, for warehousing for re-export; Clearance procedure for import by post; Prohibited exports; Canalised exports; Export against licensing; Type of exports export of cargo, export of baggage; Export of cargo by land, sea, and air routes.	Due to – Constitutional amendment (change in tax structure)
UNIT-II State Excise, CENVAT. Detail study of State Excise during calculation of Tax.	UNIT-II State Excise, CENVAT. Detail study of State Excise during calculation of Tax.	
UNIT-III Customs : Role of customs in international	UNIT-III INTRODUCTION TO GOODS AND	

<p>trade; Important terms and definitions goods; Duty; Exporter; Foreign going vessel; Aircraft goods; Import; Import Manifest; Importer; Prohibited goods; Shipping bill; Store; Bill of lading; Export manifest; Letter of credit; Kinds of duties - basic, auxiliary, additional or countervailing; Basics of levy ad valorem, specific duties; Prohibition of export and import of goods, and provisions regarding notified & specified goods; Import of goods - Free import and restricted import; Type of import - import of cargo, import of personal baggage, import of stores. Clearance Procedure - For home consumption, for warehousing for re-export; Clearance procedure for import by post; Prohibited exports; Canalised exports; Export against licensing; Type of exports export of cargo, export of baggage; Export of cargo by land, sea, and air routes.</p>	<p>SERVICES TAX (GST) -Objectives and basic scheme of GST, Meaning – Salient features of GST – Subsuming of taxes –Benefits of implementing GST , Structure of GST (Dual Model) – Central GST – State / Union Territory GST – Integrated GST GST Council: Structures Power and Functions. Provisions for amendments.</p>	
<p>UNIT-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act 1956 - Dealer, declared good, place of business, sale, sale price, turnover, year, appropriate authority ; Nature and scope of Central Sales Tax Act; Provisions relating to inter-state sales; Sales in side a state; Sales/purchase in the course of imports and exports out of India. Registration of dealers and procedure thereof; Rate of tax; Exemption of subsequent sales; Determination of</p>	<p>UNIT-IV Registration under GST: Procedure for registration, Persons liable for registration, Persons not liable for registration, Compulsory registration. Exempted goods and services - Rates of GST. Procedure relating to Levy: (CGST & SGST): Scope of supply, Tax liability on Mixed and Composite supply, Time of supply of goods and services, Value of taxable supply. Way-Billing</p>	

turnover.		
UNIT-V State Commercial Tax (Chhattisgarh) Definition, Registration, Tax liability, Procedure of Computation & Collection of Tax, Penalties & Prosecution calculation of Tax. VAT Preliminary Knowledge.	UNIT-V ASSESSMENT AND RETURNS - Input tax Credit: Eligibility, Apportionment, Inputs on capital goods, Distribution of credit by Input Service Distributor (ISD) Furnishing details of outward supplies and inward supplies, First return, Annual return and Final return.	

Suggested Reading :

1. Deloitte: GST Era Beckons, Wolters Kluwer.
2. Madhukar N Hiregange: Goods and Services Tax, Wolters Kluwer.
3. All About GST: V.S Datey - Taxman's.
4. Guide to GST: CA. Rajat Mohan,
5. Goods & Services Tax – Indian Journey: N.K. Gupta & Sunnania Batia, Barat's Publication
6. Goods & Services Tax – CA. Rajat Mohan,
7. Goods & Services Tax: Dr. Sanjiv Agrawal & CA. Sanjeev Malhotra.
8. GST - Law & Practice: Dr. B.G. Bhaskara, Manjunath. N & Naveen Kumar IM,
9. Understanding GST : Kamal Garg, Barat's Publication

B.COM PART III

COMPULSORY CORE COURSE

TITLE OF PAPER - Group-II - PAPER – II -MANAGEMENT ACCOUNTING

OBJECTIVE

This course provides the students an understanding of the application of accounting techniques for management.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Management Accounting : Meaning, nature, scope, and functions of management Accounting ; Role of management accounting in decision making; Management accounting vs financial accounting; Tools and techniques of management accounting ;Financial statement; Objectives and methods of financial statements analysis; Ratio analysis; Classification of ratios - Profitability ratios, turnover ratios, liquidity ratios,turnover ratios; Advantages of ratio analysis; Limitations of accounting ratios.	UNIT-I Management Accounting : Meaning, nature, scope, and functions of management Accounting ; Role of management accounting in decision making; Management accounting vs financial accounting; Tools and techniques of management accounting ;Financial statement; Objectives and methods of financial statements analysis; Ratio analysis; Classification of ratios - Profitability ratios, turnover ratios, liquidity ratios,turnover ratios; Advantages of ratio analysis; Limitations of accounting ratios.	No change
UNIT-II Funds Flow Statement as per Indian Accounting Standard 3, cash flow statement.	UNIT-II Funds Flow Statement as per Indian Accounting Standard 3, cash flow statement.	
UNIT-III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making - make or buy; Change of product mix; Pricing, Break-even analysis; Exploring new markets; Shutdown decisions.	UNIT-III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making - make or buy; Change of product mix; Pricing, Break-even analysis; Exploring new markets; Shutdown decisions.	
UNIT-IV Budgeting for profit Planning and control : Meaning of budget and budgetary control;Objectives; Merits and limitations; Types of budgets; Fixed and	UNIT-IV Budgeting for profit Planning and control : Meaning of budget and budgetary control;Objectives; Merits and limitations; Types of budgets; Fixed and	

flexible budgeting; Control ratios; Zero base budgeting; Responsibility accounting; Performance budgeting.	flexible budgeting; Control ratios; Zero base budgeting; Responsibility accounting; Performance budgeting.	
UNIT-V Standard Costing and Variance Analysis : Meaning of standard cost and standard costing; Advantages and application; Variance analysis - material; Labour and overhead (Two-way analysis); Variances.	UNIT-V Standard Costing and Variance Analysis : Meaning of standard cost and standard costing; Advantages and application; Variance analysis - material; Labour and overhead (Two-way analysis); Variances.	

Suggested Reading :

1. Arora M.N. : Cost Accounting - Principles and Practice, Vikas, New Delhi.
2. Jain S.P. & Narang K.L. : Cost Accounting; Kalyani, New Delhi.
3. Anthony, Rogert & Reece, at al : Principles of Management Accounting; Richard Irwin Inc.
4. Horngren, Charles, Foster and Datar et al : Cost Accounting - A Managerial Emphasis;Prentice Hall, New Delhi.
5. Khan M.Y. and Jain P.K. : Management Accounting : Tata McGraw Hill, New Delhi.
6. Kaplan R.S. and Atkonson A.A. : Advanced Management Accounting; Printice Hall India,New Delhi.
7. J.K. Agrawal & R.K. Agrawal : Jaipur (English & Hindi).
8. Dr. M.R. Agrawal : Minakshi Prakashan Meruth.
9. Dr. S.P. Gupta - Agra (Hindi & English).

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B.COM PART III

COMPULSORY CORE COURSE

TITLE OF PAPER - Group-I - PAPER – II - AUDITING

OBJECTIVE

This course aims at imparting knowlege about the principles and methods of auditing and their applications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction : Meaning and objectives of auditing; Types of audit; Internal audit.Audit Process : Audit programme; Audit note books; Working papers and evidences.	UNIT-I Introduction : Meaning and objectives of auditing; Types of audit; Internal audit.Audit Process : Audit programme; Audit note books; Working papers and evidences.	No change
UNIT-II Internal Check System : Internal control. Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-II Internal Check System : Internal control. Audit Procedure : Vouching : Verification of assets and liabilities.	No change
UNIT-III Audit of Limited Companies : a. Company auditor - Appointment, powers, duties, and liabilities. b. Divisible profits and dividend. c. Auditor's report - standard report and qualified report. d. Special audit of banking companies. e. Audit of educational institutions. f. Audit of Insurance companies.	UNIT-III Audit of Limited Companies : a. Company auditor –Qualification, Appointment, powers, duties, Resignation and liabilities. b. Divisible profits and dividend. c. Auditor's report - standard report and qualified report. d. Special audit of banking companies. e. Audit of educational institutions. f. Audit of Insurance companies.	Added Qualification and Resignation of company auditor
UNIT-IV Investigation : Investigation; Audit of non profit companies, a. Where fraud is suspected, and b. When a running a business is proposed. c. Varifications & Valuation of assets.	UNIT-IV Investigation : Investigation; Audit of non profit companies, a. Where fraud is suspected, and b. When a running a business is proposed. c. Varifications & Valuation of assets.	No change

<p>UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit. Company auditing - Qualification, Appointment, Resignation and liabilities.</p>	<p>UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit .</p>	<p>Omitted company auditing - Qualification , Appointment , Resignation and Liabilities and merge it in II unit</p>
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Suggested Reading :

1. Gupta KaPal : Contemporary Auditing : Tata Mcgraw Hill, New Delhi.
2. Tandon B.N. : Principles of Auditing : S. Chand & Co., New Delhi.
3. Pagare Dinkar : Principles and Practice of Auditing : Sultan Chand, New Delhi.
4. Sharma T.R. : Auditing Principles and Problems, Sahitya Bhawan, Agra.
5. Shukla S.M. : Auditing - Shahitya Bhavan, Agra, (Hindi)
6. Batliboy : Auditing.

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B.COM PART III

OPTIONAL GROUP A (Finance Area)

TITLE OF PAPER - FINANCIAL MANAGEMENT

PAPER - I

OBJECTIVE

The objective of this course is to help students understand the conceptual framework of financial management.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Financial Management : Financial goals; Profit vs wealth maximization; Financial functions-investment, financing, and dividend decisions; Financial planning.	UNIT-I Financial Management : Financial goals; Profit vs wealth maximization; Financial functions-investment, financing, and dividend decisions; Financial planning.	No change
UNIT-II Capital Budgeting : Nature of investment decisions, Investment evaluation criteria, payback period, accounting rate of return, net present value, internal rate of return profitability index; NPV and IRR comparison.	UNIT-II Capital Budgeting : Nature of investment decisions, Investment evaluation criteria, payback period, accounting rate of return, net present value, internal rate of return profitability index; NPV and IRR comparison.	
UNIT-III Cost of Capital : Significance of cost of capital; Calculating cost of debt; Preference shares, equity capital, and retained earnings; Combined (weighted) cost of capital. Operating and financial Leverage : Their measure; Effects on profit, analyzing alternate financial plans, combined financial and operating leverage.	UNIT-III Cost of Capital : Significance of cost of capital; Calculating cost of debt; Preference shares, equity capital, and retained earnings; Combined (weighted) cost of capital. Operating and financial Leverage : Their measure; Effects on profit, analyzing alternate financial plans, combined financial and operating leverage.	
UNIT-IV Capital Structure : Theories and determinates. Dividend Policies : Issues in dividend policies; Walter's model; Gordon's model; M.M. Hypothesis, forms of dividends and stability in dividends, determinats.	UNIT-IV Capital Structure : Theories and determinates. Dividend Policies : Issues in dividend policies; Walter's model; Gordon's model; M.M. Hypothesis, forms of dividends and stability in dividends, determinats.	
UNIT-V Management of Working Capital : Nature of	UNIT-V Management of Working Capital : Nature of	

<p>working capital, significance of working capital, operating cycle and factors determining of working capital requirements, Management of working capital - cash, recevables, and inventories.</p>	<p>working capital, significance of working capital, operating cycle and factors determining of working capital requirements, Management of working capital - cash, recevables, and inventories.</p>	
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Suggested Reading :

1. Van Home J.C. : Financial Management and Policy; Prentice Hall of India, New Delhi.
2. Khan M.Y. and Jain P.K. : Financial Management, Text and Problems; Tata McGraw Hill, New Delhi.
3. Prasanna Chandra L Financial Management Theory and practice; Tata McGraw Hill, New Delhi.
4. Pandey I.M. : Financial Management Vikas Publishing Hous, New Delhi.
5. Brigham E.F. Gapenski L.C., and Ehrhardt M.C. : Financial Management - Theory and Practice; Harcourt College Publishers, Singapore.
6. Bhalla V.K. : Modern Working Capital Management, Anmol Pub. Delhi.

B.COM PART III

OPTIONAL GROUP A (Finance Area)

TITLE OF PAPER - FINANCIAL MARKET OPERATIONS

PAPER – II

OBJECTIVE

This course aims at acquainting the students with the working of financial markets in India.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Money Market : Indian money market's composition and structure; (a) Acceptance houses, (b) Discount houses and (c) Call money market; Recent trends in Indian money market.	UNIT-I Money Market : Indian money market's composition and structure; (a) Acceptance houses, (b) Discount houses and (c) Call money market; Recent trends in Indian money market.	No change
UNIT-II Capital Market : Security market - (a) New issue market, (b) Secondary market; Functions and role of stock exchange; listing procedure and legal requirements; Public issue - pricing and marketing; Stock exchanges - National Stock Exchange and over the counter exchanges.	UNIT-II Capital Market : Security market - (a) New issue market, (b) Secondary market; Functions and role of stock exchange; listing procedure and legal requirements; Public issue - pricing and marketing; Stock exchanges - National Stock Exchange ,Bombay stock exchange	Omitted over the counter exchanges and added Bombay stock exchange
UNIT-III Securities contract and Regulations Act : Main provisions. Investors Protection : Grievances concerning stock exchange dealings and their removal; Grievance cells in stock exchanges; SEBI; Company Law Board; Press; Rmedy through courts.	UNIT-III Securities contract and Regulations Act : Main provisions. Investors Protection : Grievances concerning stock exchange dealings and their removal; Grievance cells in stock exchanges; SEBI; Company Law Board; Press; Rmedy through courts.	No change
UNIT-IV Functionaries on Stock Exchanges : Brokers, sub brokers, market makers, jobbers, portfolio consultants, institutional investors, and NRIs.	UNIT-IV Functionaries on Stock Exchanges : Brokers, sub brokers, market makers, jobbers, portfolio consultants, institutional investors, and NRIs.	No change
UNIT-V Financial Services : Marchant banking -	UNIT-V Financial Services : Marchant banking -	No change

Functions and roles; SEBI guide-lines; Credit rating - concept, functions, and types.	Functions and roles; SEBI guide-lines; Credit rating - concept, functions, and types.	
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Suggested Reading :

1. Chandler M.V. and Goldfeld S.M. : Economics of money and Banking, Harper and Row, New Delhi.
2. Gupta Suraj B. Monetary Economics; s. chand and Co. New Delhi.
3. Gupta Suraj B. Monetary Planning in India; Oxford, Delhi.
4. Bhole L.M. : Financial Markets and Institutions : Tata McGraw Hill, New Delhi.
5. Hooda R.P. : Indian Securities Market - Investors view point; Excell Books, New Delhi.
6. R.B.I. : Functions and Working.
7. R.B.I. : Report in Currency and Finance.
8. R.B.I. : Report of the Committee to Review the working of the Monetary system
Chakravarty committee.
9. R.B.I. : Report of the Committee on the Financial System, Narsimham Committee.

B.COM PART III

OPTIONAL GROUP B (Marketing Area)

TITLE OF PAPER - PRINCIPLES OF MARKETING

PAPER – I

OBJECTIVE

The Objective of this course is to help students to understand the concept of marketing and its applications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction : Nature and scope of marketing; Importance of marketing as a business function, and in the economy; Marketing concepts - traditional and modern; Selling vs. marketing; Marketing mix; Marketing environment.	UNIT-I Introduction : Nature and scope of marketing; Importance of marketing as a business function, and in the economy; Marketing concepts - traditional and modern; Selling vs. marketing; Marketing mix; Marketing environment.	No change
UNIT-II Consumer Behaviour and Market Segmentation : Nature, scope, and significance of consumer behaviour; Market segmentation - concept and importance; Bases for market segmentation.	UNIT-II Consumer Behaviour and Market Segmentation : Nature, scope, and significance of consumer behaviour; Market segmentation - concept and importance; Bases for market segmentation.	No change
UNIT-III Product : Concept of product, consumer, and industrial goods; Product planning and development; Packaging role and functions; Brand name and trade mark; after sales service; Product life cycle concept. Price : Importance of price in the marketing mix; Factors affecting price of a product/ Service ; Discounts and rebates.	UNIT-III Product : Concept of product, consumer, and industrial goods; Product planning and development; Packaging role and functions; Brand name and trade mark; after sales service; Product life cycle concept. Price : Importance of price in the marketing mix; Factors affecting price of a product/service; Discounts and rebates.	No change
UNIT-IV Distributions Channels and Physical Distribution; Distribution channels - Concept and role; Types of distribution channels. Factors affecting	UNIT-IV Distributions Channels and Physical Distribution; Distribution channels - Concept and role; Types of distribution channels. Factors affecting choice of a	No change

choice of a distribution channel;Retailer and wholesaler; Physical distribution of goods; Transportation, Warehousing, Inventory control; Order processing.	distribution channel; Retailer and wholesaler; Physical distribution of goods; Transportation, Warehousing, Inventory control; Order processing.	
UNIT-V Promotion : Methods of promotion; Optimum promotion mix; Advertising media – their relative merits and limitations; Characteristics of an effective advertisement; Personal selling; Selling as a career; Classification of successful sales person; Functions of salesman.	UNIT-V Promotion : Methods of promotion; Optimum promotion mix; Advertising media – their relative merits and limitations; Characteristics of an effective advertisement; Personal selling; Selling as a career; Classification of successful sales person; Functions of salesman. Recent development in marketing –social marketing, online marketing, Direct marketing , Services marketing, Green marketing.	Added Recent trends in marketing

Suggested Reading :

1. Philip Kotler : Marketing Management Englewood Cliffs; Prentice Hall, N.J.
2. William M. Pride and O.C. Ferrell : Marketing : Houghton - Mifflin Boston.
3. Stanton W.J. Etzel Michael J., and Walker Bruce J. Fundamentals of Marketing; McGraw Hill, New York.
4. Lamb Charles W., Hair Joseph F. and McDaniel Carl : Principles of Marketing; South- Western-Publishing, Cincinnati, Ohio.
5. Cravens David W. Hills Gerald E., Woodruff Robert B : Marketing management : Richard D. Irwin, Homewood Illinois.
6. Kotler Philip and Armstrong Gary : Principles of Marketing; Prentice Hall of India, New Delhi.
7. Dr. R.C. Agrawal, Agra.
8. Dr. S.C. Saxena Agra.
9. Dr. S.K. Jain, Hindi Granth Academi. M.P.
10. Dr. N.C. Jain

B.COM PART III

OPTIONAL GROUP B (Marketing Area)

TITLE OF PAPER - INTERNATIONAL MARKETING

PAPER – II

OBJECTIVE

This course aims at acquainting student with the operations of marketing in international environment.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I International Marketing : Nature, definition, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.	UNIT-I International Marketing : Nature, definition, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.	No change
UNIT-II Identifying and Selecting Foreign Market : Foreign market entry mode decisions. Product Planning for international Market : Product designing; Standardization vs. adaptation ; Branding and packaging; Labeling and quality issues; After sales service. International Pricing : Factors Influencing International price; Pricing process-process and methods; International price quotation and payment terms.	UNIT-II Identifying and Selecting Foreign Market : Foreign market entry mode decisions. Product Planning for international Market : Product designing; Standardization vs. adaptation ; Branding and packaging; Labeling and quality issues; After sales service. International Pricing : Factors Influencing International price; Pricing process-process and methods; International price quotation and payment terms.	No change
UNIT-III Promotion of Product/Services Abroad : Methods of international promotion; Direct mail and sales literature; Advertising; Personal selling; Trade fairs and exhibitions.	UNIT-III Promotion of Product/Services Abroad : Methods of international promotion; Direct mail and sales literature; Advertising; Personal selling; Trade fairs and exhibitions.	No change
UNIT-IV International Distribution : Distribution channels and logistics decisions; Selection and appointment of foreign sales agents.	UNIT-IV International Distribution : Distribution channels and logistics decisions; Selection and appointment of foreign sales agents.	No change
UNIT-V Export Policy and Practices in India : Exim policy - an overview; Trends in India's foreign trade; Steps in	UNIT-V Export Policy and Practices in India : Exim policy - an overview; Trends in India's foreign trade;	Added Marketing

starting an export business; Product selection; Market selection; Export pricing; Export finance; Documentation; Export procedures; Export assistance and incentives.	Steps in starting an export business; Product selection; Market selection; Export pricing; Export finance; Documentation; Export procedures; Export assistance and incentives. Marketing Control Process	Control Process
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Suggested Reading :

1. Bhattacharya R.L. and Varshney B. : International Marketing Management; Sultan Chand, New Delhi.
2. Bhattacharya B. : Export Marketing Strategies for Success; Global Press, New Delhi.
3. Keegan W.J. : Multinational Marketing Management; Prentice Hall, New Delhi.
4. Kriplani V. : International marketing; Prentice Hall New Delhi.
5. Taggart J.H. and Moder Mott. M.C. : The Essence of International Business; Prentice Hall New Delhi.
6. Kotler Phillip : Principles of Marketing; Prentice Hall New Delhi.
7. Fayer Weather John : International Marketing; Prentice Hall N.J.
8. Caterora P.M. and Keavenay S.M. : Marketing an international Perspective; Erwin Homewood, Illinois.
9. Paliwala, Stanely J. The Essence of International marketing; Prentice Hall, New Delhi.

B.COM PART III

OPTIONAL GROUP C (Commercial Area)

TITLE OF PAPER - INFORMATION TECHNOLOGY AND ITS APPLICATIONS IN BUSINESS

PAPER – I

OBJECTIVE

The objective of the course is to familiarize the students with the innovation information technology and how it affects business. An understanding of the group rules of these technologies will enable the students to appreciate the nitty-gritty Commerce.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Information Revolution and information Technology (IT) : Deployment of Business; Basic features of IT; Impact of IT on business environment and social fabric; Invention of writing; Written books; Printing Press and movable type Gutenberg's invention; Radio; telephone, wireless and satellite communication computing and dissemination of information and knowledge and convergence technologies (Internet with Wireless- WAP).	UNIT-I Information Revolution and information Technology (IT) : Deployment of Business; Basic features of IT; Impact of IT on business environment and social fabric; Invention of writing; Written books; Printing Press and movable type Gutenberg's invention; Radio; telephone, wireless and satellite communication computing and dissemination of information and knowledge and convergence technologies (Internet with Wireless-WAP).	No change
UNIT-II Fundamentals of Computer : Data, information and EDP : Data, information and concept of data and information; Levels of information from data; processing; Electronic data processing; Electronic machines; a. Number Systems and Codes : Different number systems - binary, octal decimal, hexagonal, and their conversion codes used in computers; Bed, EBCDIC, ASCII; Gray and conversions. b. Computer Arithmetic and Gates : Binary arithmetic,	UNIT-II Fundamentals of Computer : Data, information and EDP : Data, information and concept of data and information; Levels of information from data; processing; Electronic data processing; Electronic machines; a. Number Systems and Codes : Different number systems - binary, octal decimal, hexagonal, and their conversion codes used in computers; Bed, EBCDIC, ASCII; Gray and conversions. b. Computer Arithmetic and Gates : Binary arithmetic,	

<p>complements, addition subtraction; Conversion from one system to another; Logic Gates, truth table and applications minimisation, and K-maps.</p> <p>c. Computer Processing System : Definition of computer; Hardware/Software concepts; Generation of computers; Types of computers; Elements of computer; CPU and its functions, Various computer systems.</p> <p>d. I/O devices : Basic concepts of I/O devices; Various input devices Keyboard, mouse; MICR, OCR, microphones.</p> <p>e. Various output devices : VDU, printer, plotter, spooling, L.S.</p> <p>f. Storage Devices : Primary and secondary memory; Types of memory capacity and its enhancement; Memory devices and comparisons; Auxiliary storage, tapes, disks (magnetic and optical); various devices and their comparison.</p> <p>g. System Software - Role of Software, Different System Software : O.S., utilization element of O.S. - Its types and variations; DOS and windows.</p> <p>h. Computer and Networks : Need of communication; Data transmission; Baud; Bandwidth; Communication Channel; Multiplexing; Basic network concepts; O.S.I. model; Types of topologies; LAN, WAN, Client server concept.</p>	<p>complements, addition subtraction; Conversion from one system to another; Logic Gates, truth table and applications minimisation, and K-maps.</p> <p>c. Computer Processing System : Definition of computer; Hardware/Software concepts; Generation of computers; Types of computers; Elements of computer; CPU and its functions, Various computer systems.</p> <p>d. I/O devices : Basic concepts of I/O devices; Various input devices Keyboard, mouse; MICR, OCR, microphones.</p> <p>e. Various output devices : VDU, printer, plotter, spooling, L.S.</p> <p>f. Storage Devices : Primary and secondary memory; Types of memory capacity and its enhancement; Memory devices and comparisons; Auxiliary storage, tapes, disks (magnetic and optical); various devices and their comparison.</p> <p>g. System Software - Role of Software, Different System Software : O.S., utilization element of O.S. - Its types and variations; DOS and windows.</p> <p>h. Computer and Networks : Need of communication; Data transmission; Baud; Bandwidth; Communication Channel; Multiplexing; Basic network concepts; O.S.I. model; Types of topologies; LAN, WAN, Client server concept.</p>	
<p>UNIT-III Computer-based Business Applications</p> <p>a. Word Processing : Meaning and role of word processing</p>	<p>UNIT-III Computer-based Business Applications</p> <p>a. Word Processing : Meaning and role of word processing</p>	

<p>in creating of documents, editing, formatting, and printing documents, using tools such as spelling check, thesaurus, etc. in word processors (MS-Word).</p> <p>b. Electronic Spreadsheet : Structure of spreadsheet and its applications to accounting, finance, and marketing functions of business; Creating a dynamic/sensitive worksheet ; Concept of absolute and relative cell reference; Using builtin functions; Goal seeking and solver tool; Using graphics and formatting of worksheet; Sharing data with other desktop applications; Strategies of creating error-free worksheet (MS-Excel, Lotus 123). Practical knowledge on Wings Accounting (Software).</p> <p>c. Programming under a DBMS environment : The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records, designing queries, and reports; Linking of data files ;Understanding programming environment in DBMS; Developing menu driven applications in query language (MS-Access).</p>	<p>in creating of documents, editing, formatting, and printing documents, using tools such as spelling check, thesaurus, etc. in word processors (MS-Word).</p> <p>b. Electronic Spreadsheet : Structure of spreadsheet and its applications to accounting, finance, and marketing functions of business; Creating a dynamic/sensitive worksheet ; Concept of absolute and relative cell reference; Using builtin functions; Goal seeking and solver tool; Using graphics and formatting of worksheet; Sharing data with other desktop applications; Strategies of creating error-free worksheet (MS-Excel, Lotus 123). Practical knowledge on Wings Accounting (Software).</p> <p>c. Programming under a DBMS environment : The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records, designing queries, and reports; Linking of data files ;Understanding programming environment in DBMS; Developing menu driven applications in query language (MS-Access).</p>	
<p>UNIT-IV Electronic Data Interchange (EDI) Introduction to EDI; Basics of EDI; EDI standards; Financial EDI (FEDI); FEDI for international trade transaction; Applications of EDI; Advantages of EDI; Future of EDI.</p>	<p>UNIT-IV Electronic Data Interchange (EDI) Introduction to EDI; Basics of EDI; EDI standards; Financial EDI (FEDI); FEDI for international trade transaction; Applications of EDI; Advantages of EDI; Future of EDI.</p>	
<p>UNIT-V The Internet and its Basic Concepts Internet-concept, history development in India; Technological foundation of internet;</p>	<p>UNIT-V The Internet and its Basic Concepts Internet-concept, history development in India; Technological foundation of internet;</p>	

<p>Distributed computing; Client-server computing; Internet protocol suite; Application of distributed computing; Client-server computing; Internet protocol suite in the internet environment; Domain Name System (DNS(; Domain Name Service (DNS); Generic top-level domain (gTLD); Country code top-level domain (ccTLD); - India; Location of second-level domains; IP addresses; Internet protocol; Applications of Internet in business, education, governance, etc. Information System Audit Basic idea of information audit; Difference with the traditional concepts of audit; Conduct and applications of IS audit in internet environment.</p>	<p>Distributed computing; Client-server computing; Internet protocol suite; Application of distributed computing; Client-server computing; Internet protocol suite in the internet environment; Domain Name System (DNS(; Domain Name Service (DNS); Generic top-level domain (gTLD); Country code top-level domain (ccTLD); - India; Location of second-level domains; IP addresses; Internet protocol; Applications of Internet in business, education, governance, etc. Information System Audit Basic idea of information audit; Difference with the traditional concepts of audit; Conduct and applications of IS audit in internet environment.</p>	
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Suggested Reading :

1. Agrawala Kamlesh N. and Agarwala Deeksha : Business on the Net - Introduction to Ecommerce, Macmillan India, New Delhi.
2. Agarwala Kamlesh, N. and Agarwala Deeksha : Bulls, Bears and The mouse; and introduction to On-line Service Market Trading; Macmillan India, New Delhi.
3. Agarwala Kamlesh, N. and Agarwala Prateek Amar; WAP the Net; An Introduction on Wireless Application Protocol; Macmillan India, New Delhi.
4. Bajaj Kamlesh K. and Nag Debjanl : E-Commerce; The cutting Edge of Business; Tata McGraw Hill, New Delhi.
5. Edwards, Ward and Bytheway : The Essence of Information Systems; Prentice Hall, New Delhi.
6. Garg & Srinivasan : Work Book on Systems Analysis & Design; Prentice Hall New Delhi.
7. Kanter : Managing with Information; Prentice Hall New Delhi.
8. Minoli Daniel, Minoli Emma : Web Commerce Technology Handbook; Tata McGraw Hill,

New Delhi.

9. Minoli Daniel : Internet & Internet Engineering; Tata McGraw Hill, New Delhi.

10. Yeats : Systems Analysis & Design; Macmillan India, New Delhi.

11. Goyal : Management information System; Macmillan India, New Delhi.

12. Timothy J O'Leary : Microsoft Office 2000; Tata McGraw Hill, New Delhi.

B.COM PART III

OPTIONAL GROUP C (E-Commerce Area)

TITLE OF PAPER - ESSENTIAL OF E-COMMERCE

PAPER – II

OBJECTIVE

The objective of this course is to familiarize the students with the basics of e-commerce and to comprehend its potential.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Internet and Commerce : Business operations; E-Commerce practices; Concepts b2b,b2c, b2g, g2h; Benefits of e-commerce to organization, consumers, and society; Limitation of e-commerce; Management issues relating to e-commerce. Operations of E-Commerce : Credit card transaction; Secure Hypertext Transfer Protocol (SHTTP); Electronic payment systems; Secure electronic transaction (SET); Set's encryption; Process; Cybercash; Smart cards; Indian payment models.	UNIT-I Internet and Commerce : Business operations; E-Commerce practices; Concepts b2b,b2c, b2g, g2h; Benefits of e-commerce to organization, consumers, and society; Limitation of e-commerce; Management issues relating to e-commerce. Operations of E-Commerce : Credit card transaction; Secure Hypertext Transfer Protocol (SHTTP); Electronic payment systems; Secure electronic transaction (SET); Set's encryption; Process; Cybercash; Smart cards; Indian payment models.	No change
UNIT-II Applications in B2C : Consumer's shopping procedure on the internet; Impact on disintermediation and re-intermediation; Global market; Strategy of traditional department stores; Products in b2c model; Success factors of e-brokers; Broker based services on-line; Online travel tourism services; Benefits and impact of e-commerce on travel industry; Real estate market; Online stock trading and its benefits; Online	UNIT-II Applications in B2C : Consumer's shopping procedure on the internet; Impact on disintermediation and re-intermediation; Global market; Strategy of traditional department stores; Products in b2c model; Success factors of e-brokers; Broker based services on-line; Online travel tourism services; Benefits and impact of e-commerce on travel industry; Real estate market; Online stock trading and its benefits; Online	No change

banking and its benefits; Online financial services and their future; Educations benefits, implementation, and impact.	banking and its benefits; Online financial services and their future; Educations benefits, implementation, and impact.	
UNIT-III Applications in B2B; Applications of b2b, Key technologies for b2b; Architectural models of b2b; Characteristics of the supplier-oriented marketplace, buyer-oriented marketplace, and intermediary-oriented marketplace; Benefits of b2b on procurement re-engineering; Just in Time delivery in b2b; Internet-based EDI from traditional EDI; Integrating EC with back-end information systems; Marketing issues in b2b.	UNIT-III Applications in B2B; Applications of b2b, Key technologies for b2b; Architectural models of b2b; Characteristics of the supplier-oriented marketplace, buyer-oriented marketplace, and intermediary-oriented marketplace; Benefits of b2b on procurement re-engineering; Just in Time delivery in b2b; Internet-based EDI from traditional EDI; Integrating EC with back-end information systems; Marketing issues in b2b.	No change
UNIT-IV Applications in Governance : EDI in governance; E-government; E-governance applications of the internet; Concept of government to business, business to government and citizen-to-government; E-governance models; Private sector interface in e-governance.	UNIT-IV Applications in Governance : EDI in governance; E-government; E-governance applications of the internet; Concept of government to business, business to government and citizen-to-government; E-governance models; Private sector interface in e-governance.	No change
UNIT-V Emerging Business Models : Retail model; Media model; Advisory model, Mode-toorder manufacturing model; Do-it yourself model; Information service model; Emerging hybrid models; Emerging models in India.	UNIT-V Emerging Business Models : Retail model; Media model; Advisory model, Mode-toorder manufacturing model; Do-it yourself model; Information service model; Emergin hybrid models; Emerging models in India. Security and Legal aspects of E-commerce.	Added Security and Legal aspects of E-commerce.

Suggested Reading :

1. Agarwala Kamlesh. N. and Agarwala Deekhsa : Bridge to Online Storefornt; Macmillan India, New Delhi.

2. Agarwala Kamlesh. N. and Agarwala Deeksha : Business on the Net Introduction to the E-commerce; Macmillan India New Delhi.
3. Agarwala Kamlesh N. and Agarwala Deeksha : Bulls, Bears and The Mouse : An Introduction to Online Stock Market Trading; Macmillan India New Delhi.
4. Tiwari Dr. Murli D. : Eductaion and E-Governance; Macmillan India, New Delhi.
5. Minoli Daniel, Minoli Emma : Web Commerce Technology Handbook; Tata McGraw Hill, New Delhi.
6. Minoli Deniel, Internet & Internet Engineering : Tata McGraw Hill, 1999.
7. Bhatnagar Subhash and Schware Robert (Eds) : Information and Communication Technology in Development; Sage Publications India, New Delhi.
8. Amor, Daniel : E-business R eevaluation, The : Living and Working in an Interconnected World; Prentice Hall, U.S.
9. Afuah, A., and Tuccu, C.: Internet usiness models and Strategies; McGraw Hill, New York.

B.COM PART III

OPTIONAL GROUP D (Money Banking & Insurance Area)

TITLE OF PAPER FUNDAMENTAL OF INSURANCE

PAPER – I

OBJECTIVE

This course enables the students to know the fundamentals of insurance.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction to Insurance : Purpose and need of insurance; Insurance as a social security tool; Insurance and economic development.	UNIT-I Introduction to Insurance : Purpose and need of insurance; Insurance as a social security tool; Insurance and economic development.	No change
UNIT-II Fundamentals of Agency Law : Definiton of an agent; Agents regulations; Insurance intermediaries; Agents Compensation.	UNIT-II Fundamentals of Agency Law : Definiton of an agent; Agents regulations; Insurance intermediaries; Agents compensation.	No change
UNIT-III Procedure for Becoming an Agent : Prerequisite for obtaining a license; Duration of license; Cancellation of incense; Revocation or suspension/termination of agent appointment; Code of conduct; Unfair practices. Functions of the Agent : Proposal form and other forms for grant of cover; Financial and medical underwriting; Material information; Nomination and assignment; Procedure regarding settlement of policy claims.	UNIT-III Procedure for Becoming an Agent : Prerequisite for obtaining a license; Duration of license; Cancellation of incense; Revocation or suspension/termination of agent appointment; Code of conduct; Unfair practices. Functions of the Agent : Proposal form and other forms for grant of cover; Financial and medical underwriting ; Material information; Nomination and assignment; Procedure regarding settlement of policy claims.	No change
UNIT-IV Company Profile : organizational set-up of the company; Promotion strategy; Market share; Important activities; Structure; Product; Actuarial profession; Product pricing actuarial aspects; Distribution channels.	UNIT-IV Company Profile : organizational set-up of the company; Promotion strategy; Market share; Important activities; Structure; Product; Actuarial profession; Product pricing actuarial aspects; Distribution channels.	No change
UNIT-V Fundamentals/Principles of Life insurance/ Marine /Fire /Medical/General Insurance; Contracts of various kinds; Insurable Interest.	UNIT-V Fundamentals/Principles of Life insurance/ Marine /Fire /Medical/General Insurance; Contracts of various kinds; Insurable Interest. Online insurance procedure	Added Online insurance procedure

Suggested Reading :

1. Mishra M.N. : Insurance Principle and Practice; S. Chand and Co., New Delhi.
2. Insurance Regulatory Development Act. 1999.
3. Life Insurance Corporation Act. 1956.
4. Gupta OS : Life Insurance; Frank brothers, New Delhi.
5. Vinayakam N., Radhaswamy and Vasudevan SV : Insurance - Principles and Practice, S. Chand and Co. New Delhi.
6. Mishra MN : Life Insurance Corporation of India, Vols I, II & III; Raj Books, Jaipur.
7. Balchand Shriwastava, Agra.
8. Dr. M.L. Singhai, RAmesh Book Depot, Jaipur.

B.COM PART III

OPTIONAL GROUP D

TITLE OF PAPER - MONEY & BANKING SYSTEM

OBJECTIVE

This course enables the students to know the working of the Indian Money & banking system.

(Money Banking & Insurance Area)

PAPER – II

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Money : Function, Alternative Measures to money supply in India - their different components. Meaning and changing relative importance of each.	UNIT-I Money : Function, Alternative Measures to money supply in India - their different components. Meaning and changing relative importance of each.	No change
UNIT-II Indian Banking System : Structure and organization of banks; Reserve Bank of India; Apex banking Institutions; Commercial banks; Regional rural banks; Cooperative banks; Development banks.	UNIT-II Indian Banking System : Structure and organization of banks; Reserve Bank of India; Apex banking Institutions; Commercial banks; Regional rural banks; Cooperative banks; Development banks.	No change
UNIT-III Banking Regulation Act, 1947 : History; Social control; Banking Regulation Act as applicable to banking companies and public sector banks; Banking Regulation Act as applicable to Cooperative banks.	UNIT-III Banking Regulation Act, 1947 : History; Social control; Banking Regulation Act as applicable to banking companies and public sector banks; Banking Regulation Act as applicable to Cooperative banks.	No change
UNIT-IV Regional Rural and Cooperative Banks in India : Functions; Role of regional rural and cooperative banks in rural India; Progress and performance.	UNIT-IV Regional Rural and Cooperative Banks in India : Functions; Role of regional rural and cooperative banks in rural India; Progress and performance.	No change
UNIT-V Reserve Bank of India : Objectives; Organization ; Functions and working; Monetary policy; Credit control measures and their effectiveness.State Bank of India, Project History, Objectives, Functions & Organization working & progress.	UNIT-V Reserve Bank of India : Objectives; Organization ; Functions and working; Monetary policy; Credit control measures and their effectiveness. State Bank of India, Project History, Objectives, Functions & Organization working & progress. Internet banking system	Added Internet banking system