बिलासपुर विश्वविद्यालय, बिलासपुर (छत्तीसगढ़)
BILASPUR VISHWAVIDYALAYA, BILASPUR (CHHATTISGARH)
(Established by Chhattisgarh Legislative Assembly Act No. 07 of 2012)
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क्र 970/परीक्षा/2017 बिलासपुर, दिनांक 23/01/2017

प्रति,

प्राचार्य,
समस्त सम्बद्ध महाविद्यालय,
बिलासपुर विश्वविद्यालय, बिलासपुर (छ.ग.)

विषयः– **बी.ए./बी.एससी. में निर्धारित समूह के अनुसार विषयों का चयन करने बाबत।**

—00—

विषयांतर्गत सत्र 2016–17 में बिलासपुर विश्वविद्यालय की स्नातक स्तर पर बी.ए. एवं बी. एससी. प्रथम वर्ष, द्वितीय वर्ष में अध्ययनरत नियमित/स्वाध्यायी/भूतपूर्व परीक्षार्थियों से निर्धारित पाठ्यक्रमानुसार/विषय समूह के अनुसार ही विषयों का चयन करना अनिवार्य है।

बी.ए. भाग–01 में संलग्न अध्यादेश की कंडिका (6) B के अनुसार 6 विषय समूह में से, किन्ही 3 विषय समूह का चयन करना है तथा चयन किये गये विषय समूह में से प्रत्येक समूह से केवल एक विषय का चयन करना है अर्थात् केवल 3 विषयों का चयन करना है। अनिवार्य विषय – हिन्दी भाषा, अंग्रेजी भाषा एवं पर्यावरण अध्ययन है। (अध्यादेश की प्रति संलग्न है।)

बी.एस.सी. भाग–01 में संलग्न अध्यादेश की कंडिका (6) ii में उल्लेखित विषय समूह के अनुसार केवल एक विषय समूह का चयन करना अनिवार्य है। अनिवार्य विषय – हिन्दी भाषा, अंग्रेजी भाषा एवं पर्यावरण अध्ययन है। (अध्यादेश की प्रति संलग्न है।)

स्नातक स्तर में द्वितीय एवं तृतीय वर्ष में विषय समूह/विषय में परिवर्तन मान्य नहीं होगा। अर्थात् जिस विषय समूह/विषयों का चयन स्नातक स्तर के प्रथम वर्ष में किया गया है, केवल उसी विषय समूह/विषयों का अध्ययन/चयन स्नातक स्तर के द्वितीय एवं तृतीय वर्ष में करते हुए परीक्षा में सम्मिलित होना अनिवार्य है।

अतः अनुरोध है कि उपरोक्त अध्यादेश के प्रावधानानुसार नियमित/स्वाध्यायी परीक्षार्थियों के परीक्षा आवेदन विश्वविद्यालय को अग्रेषित करना सुनिश्चित करें। अन्यथा की स्थिति में परीक्षार्थियों को विश्वविद्यालय द्वारा परीक्षा में सम्मिलित होने से वंचित किया जा सकता है। कृपया इस पत्र की एक प्रति महाविद्यालय की सूचना पटल पर परीक्षार्थियों की जानकारी हेतु चस्पा करावें एवं परीक्षार्थियों को सूचित करें।

संलग्न :– बी.ए. संशोधित अध्यादेश क्र. 11(पृष्ठ 1–2)
– बी. एससी. संशोधित अध्यादेश क्र. 21(पृष्ठ 3–4)

आदेशानुसार
23.1.2017
सहायक कुलसचिव (परीक्षा)
बिलासपुर विश्वविद्यालय,
बिलासपुर (छ.ग.)

पृ. क्र. 971/परीक्षा/2017 बिलासपुर, दिनांक 23/01/2017

प्रतिलिपिः–

1. माननीय कुलपति/कुलसचिव जी के सादर अवलोकनार्थ एवं सूचनार्थ।
2. सहायक कुलसचिव (अकादमी/गोपनीय), बिलासपुर विश्वविद्यालय, बिलासपुर को सूचनार्थ।
3. अनुभाग अधिकारी/कक्ष अधीक्षक/कक्ष प्रभारी (अकादमी/गोपनीय/परीक्षा) को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रस्तुत।
4. संपादक/संवाददाता, दैनिक .....समाचार पत्र को इस अनुरोध के साथ सूचनार्थ कि छात्रहित में इस विज्ञप्ति को अपने समाचार पत्र में समाचार वृत्त के रूप में निःशुल्क प्रकाशित करने का कष्ट करें।

23.1.2017
सहायक कुलसचिव (परीक्षा)

REVISED ORDINANCE NO.11

(As per State U.G.C. Scheme)

BACHELOR OF ARTS

1. The three year course have been broken up in to three Parts.

   Part-I Examination : at the end of the first year.

   Part-II Examination : at the end of the second year and

   Part-III Examination : at the end of the third year.

2. A candidate who after passing (10+2) or intermediate exami-nation of C.G. Board of Secondary Education, C.G. or any other examination recognised by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.A. Part-I examination.

3. A candidate who after passing B.A. Part-I examination of the University or any other examination recognised by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part II Examination.

4. A candidate who after passing B.A. Part II examination of the University has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part-III examination.

5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate candidates shall be eligible for admission to the examination as per provisions of Ordinance N. 6 relating to Examinations (General). Provided that non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular students at any of the University Teaching Department or College.

6. Every candidate for the Bachelor of arts examination shall be examined in :

   A. Foundation Course :

      i) Group A - Hindi Language

      ii) Group B - English Language

   ⇒ B. Three course subjects : One subject from any three group out of the followings six groups :

      1. Sociology / Ancient Indian Histroy / Anthropology

      2. Political Science/Home Science / Drawing & Painting / Vocational Course.

      3. Hindi Literature/ Sanskrit Literature/Urdu Literature/ Mathematics.

      4. Economics/Music/ Defence Studies/ Linguistics / नृत्य

5. Philosophy/Psychology/ Geography/ Education/ Management.
6. History/English Literature/ Statistics.
7. Practicals (If Nece ssary) for each core subject.

7. Any candidate who has passed the B.A. examination of the University shall be allowed to present himself for examination in any of additional subjects prescribed for the B.A. exami-nation and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.A. Part I examination in the subject which he proposes to offer and then the B.A. Part II and Part III examination in the same subject. Successfull candidate will be given a certificate to that effect.

8. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total makrs in each subject/group of subjects. In subject/group of subjects, where both theory and practical examination are provided, an examinee must pass in both theory and practical parts of the examination separately.

9. Candidate will have to pass separately at the Part-I, Part II and part-III examination. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the divison of the Final examination, total marks obtained by the examinees, in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part I Examination.

Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject only the total aggregate marks being carried over for determining the division shall include the actual marks obtained in the subject in which he appeared at the supplementary examination.

10. Successful exminees at the Part-III examination obtaining 60% or more marks shall be placed in the First division, those obtaining less than 60% but not less than 45% marks in the Second division and other successful examinees in the third division.

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(21)

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 Liabilty : 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 Liabilty : 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 pratical work relating important

Administration : Authorities, appeals, penalties.	Administration : Authorities, appeals, penalties. Preparation of return of income -Manually and on line	forms.

Suggested Reading :

1. Singhania V.K. : Students Guide to Income Tax; Taxmann, Delhi.
2. Prasad, Bhagwati : Income Tax Law & Prectice; 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) Shahitya Bhavan, 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	

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.	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 fro amendments.	
UNIT-IV Central Sales Tax : Important terms and difinitions 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	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. Eway-Billing	

turnover.		
UNIT-V State Commercial Tax (Chhattisgarh) Definition, Registration, Tax liability, Procedure of Computation & Collection of Tax, Penalties & Prosicution calculation of Tax. VAT Preliminary Knowledge.	UNIT-V ASSESSMENT AND RETURNS - Input text 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 managment 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 managment 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

UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit. Company auditing - Qualification, Appointment, Resignation and liabilities.	UNIT-V Recent Trends in Auditing : Nature and significance of cost audit; Tax audit; Management audit .	Omitted company auditing - Qualification , Appointment , Resignation and Liabilities and merge it in II unit

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	

working capital, significance of working capital, operating cycle and factors determining of working capital requirements, Management of working capital - cash, recevables, and inventories.	working capital, significance of working capital, operating cycle and factors determining of working capital requirements, Management of working capital - cash, recevables, and inventories.	

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 McGrow Hill, New Delhi.
3. Prasanna Chandra L Financial Management Theory and practice; Tata McGrow 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 provgisions. Investors Protection : Grievancesconcerning 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 provgisions. Investors Protection : Grievancesconcerning 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.	

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 McGrow 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 marketingand its applications.

M.M. 75

Present syllabus	Proposed syllabus	Remark
UNIT-I Introduction : Nature and scope of marketing; Importnace 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; Importnace 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 holesaler; Physical distribution of goods; Transportation, Warehousing, Inverntory control; Order processing.	distribution channel; Retailer and holesaler; Physical distribution of goods; Transportation, Warehousing, Inverntory control; Order processing.	
UNIT-V Promotion : Methods of promotion; Optimum promotion mix; Advertising media – their ralative 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 ralative 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 Charies 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. Inwin, 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

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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, definiton, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.	UNIT-I International Marketing : Nature, definiton, 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 Influenceing 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 Influenceing 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

Suggested Reading :

1. Bhattacharya R.L. and Varshney B. : International Mrketing Management; Sultan Chand, New Delhi.
2. Bhattacharya B. : Export Marketing Strategles 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.

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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 famillatize 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 satelite 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 satelite 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,	

complements, addition subtraction; Conversion from one system to another; Logic Gates, truthtable and applications minimisation, and K-maps. 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. d. I/O devices : Basic concepts of I/O devices; Various input devices Keyboard,mouse; MICR, OCR, microphones. e. Various output devices : VDU, printer, plotter,spooling, L.S. f. Storage Devices : Primary and secondary memory; Types of memory capacityand its enhancement; Memory devices and comparisons; Auxiliary storage,tapes, disks (magnetic and potical); various devices and their comparison. g. System Software - Roale of Software, Different System Software : O.S.,utilization element of O.S. - Its types and variations; DOS and windows. 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.	complements, addition subtraction; Conversion from one system to another; Logic Gates, truthtable and applications minimisation, and K-maps. 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. d. I/O devices : Basic concepts of I/O devices; Various input devices Keyboard,mouse; MICR, OCR, microphones. e. Various output devices : VDU, printer, plotter,spooling, L.S. f. Storage Devices : Primary and secondary memory; Types of memory capacityand its enhancement; Memory devices and comparisons; Auxiliary storage,tapes, disks (magnetic and potical); various devices and their comparison. g. System Software - Roale of Software, Different System Software : O.S.,utilization element of O.S. - Its types and variations; DOS and windows. 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.	
UNIT-III Computer-based Business Applications a. Word Processing : Meaning and role of word processing	UNIT-III Computer-based Business Applications a. Word Processing : Meaning and role of word processing	

in creating of documents, editing, formatting, and printing documents, using tools such as spelling check, thesaurus, etc. in word processors (MS-Word). b. Electronic Spreadsheet : Structure of spreadsheet and its applications toaccounting, finance, and marketing functions of business; Crating 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 crating error-free worksheet (MS-Excel, Lotus 123). Practical knowledge on WingsAccounting (Software). 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 drivenapplications in query language (MS-Access).	in creating of documents, editing, formatting, and printing documents, using tools such as spelling check, thesaurus, etc. in word processors (MS-Word). b. Electronic Spreadsheet : Structure of spreadsheet and its applications toaccounting, finance, and marketing functions of business; Crating 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 crating error-free worksheet (MS-Excel, Lotus 123). Practical knowledge on WingsAccounting (Software). 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 drivenapplications in query language (MS-Access).	
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.	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.	
UNIT-V The Internet and its Basic Concepts Internet-concept, history development in India; Technological foundation of internet;	UNIT-V The Internet and its Basic Concepts Internet-concept, history development in India; Technological foundation of internet;	

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-lelvel domian (gTLD); Country code top-level domain (ccTLD); - India; Llocation of second-level doomains; 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.	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-lelvel domian (gTLD); Country code top-level domain (ccTLD); - India; Llocation of second-level doomains; 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.	

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 McGrow Hill, New Delhi.
10. Yeats : Systems Analysis & Design; Macmillan India, New Delhi.
11. Goyal : Management information System; Macmillan India, New Delhi.
12. Timothi J O'Leary : Microsoft Office 2000; Tata McGrow 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 (SHTP); 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 (SHTP); 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-inermediation; 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-inermediation; 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 McGrow 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 evealuation, 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 (Money Banking & Insurance Area)
TITLE OF PAPER - MONEY & BANKING SYSTEM PAPER – II
OBJECTIVE
This course enables the students to know the working of the Indian Money & banking system.

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

Suggested Reading :

1. Basu A.K. : Fundamentals of Banking-Theory and Practice; A Mukherjee and Co., Calcutta.
2. Sayers R.S. : Modern Banking : Oxford University Press.
3. Panandikar S.G. And Mithani D.M. : Banking in India; orient Longman.
4. Reserve Bank of India : Functions and Working.
5. Dekock : Central Banking; Crosby lockwood Staples, London.
6. Tannan M.L. : Banking - Law and Practice in India : India Law House, New Delhi.
7. Knubchandani B.S. : Practice and Law of Banking; Macmillan, New Delhi.
8. Shekhar and Shekhar : Banking Theory and Practice; Vikas Publishing House, New Delhi.
9. Harishchandra Sharma.
10. M.L. Singhai.

COMPUTER APPLICATION

MARKS DISTRIBUTION

Theory Paper	Paper - I			Total Marks - 50
	Paper - II			Total Marks - 50

Every unit of Theory Paper will consists of 10 Marks.

Practical Paper				Total Marks - 50
Practical Marks Distribution :	Viva	-	10	
	Internal	-	15	
	Practical	-	25	

Practical Test will consist of 3 Hrs. **Total Marks - 150**

PAPER - I

PROGRAMMING IN VISUAL BASIC

(Paper Code-1165)

UNIT-I Introduction to Visual Basic, Programs, Variables

Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files, Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option automatic code completion features. Introduction to objects, Controlling objects, Properties, methods and events, Working with forms, interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing, Overview of variables, Vser-defined data types, constants working with procedures, Working with dates and times, Using the Format Function, Manipulating text stringe.

UNIT-II Controlling Program Execution, Working with Control

Comparison and logical operators, If....Them statements, Select Case Statements looping structures, Using Do....Loop structures, For....Next statement, Exiting a loop. Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insertable objects, Arrays, Dynamic Arrays.

UNIT-III Procedure, Function Error Trapping & Debugging

Procedure, Function, call by value, call by reference, Type definition, with object, Validation, Overview of run-time errors, error handling process, The Err object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing Program flow with the Call Stack.

UNIT-IV Sequential and Random Files :

Saving data to file, basic filling, data analysis and file, the extended text editor, File organization Random access file, The design and coding, File Dialog Box, Picture Box, Image box, Dialog Box, using clipboard, Copy, Cut, Paste of Text & Picture in Clipboard, Use of Grid Control Multiple document interface, Single document interface.

UNIT-V Data Access Unsing the ADO Data Control & Report Generation

Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data, Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard. Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.

BOOK REFERENCE :

1 Visual Basic Programming - Reeta Sahu, B.P.B. Publication.

2 Mastering in Visual Basic - By BPB Publications.

3 Visual Basic Programming - Mark Brit.

PAPER - II

SYSTEM ANALYSIS, DESING & MIS

(Paper Code-1166)

UNIT-I Introduction -

Systems Concepts and the information systems environment : Definition of system, Characteristics of system, elements of system, types of system, The system Development life cycle : consideration of candidates system. The Role of system Analyst : Introduction, the multiphase role of the analyst, the analyst / user interface, the place of the analyst in the MIS Organization.

UNIT-II System Analysis, Tools of Structured Analysis, Feasibility Study-

System Planning and initial investigation : Basis for planning in systems analysis, initial investigation, fact finding, fact analysis, determination of feasibility.

Information Gathering : Kind of information, Information gathering tools.

Structured Analysis, Flow chart, DFD, Data Dictionary, Decision Tree, Structured English, Decision Table. System Performance, Feasibility Study. Data Analysis.

UNIT-III System Design & System Implementation -

The process of Design Methodologies. Input Design, Output Design, Form Design, File Structure, File organization, data base design, System Testing, the test plan, quality assurance, data processing auditor. Conversion, Post implementation review, Software Maintenance.

UNIT-IV Introduction to MIS & Other Subsystem-

Evolution of MIS, Need of MIS, Definition & Benefits of MIS, Characteristic, Role component of Information system, data base as a future of MIS, Decision making, logic of Management Information system. Structure of MIS.

UNIT-V Information System Concept -

Difference between Transaction Processing. System (TPS) and Management Information System, How MIS works, MIS and Information Resource Management, Quality information Building Blocks for the information system, information system concept, Other system characteristic (Open & Closed System), difference between MIS & Strategic System, Adaptive system, Business function information system.

BOOK REFERENCE :

1. System Analysis and Design - Elias M. Awad.
2. System Analysis and Design - Alan Dennis & Barbara Haley Wixo.
3. Management Information systems - C.S.V. Murthy, Himalaya Publication House.

PAPER - III

PRACTICAL EXERCISES BASED ON PAPER I & II

Practicals to be done -

1. At least 20 practical - exercises covering the contents of paper - I (e.g. Designing calculator, sorting of elements, Generating Fibbonacci series)
2. Design the Project on one of the following - Application Software / Website Design/ Accounting software / Inventory control System / System Software & othter (e.g. Library Management System, Medical management, Stock Management, Hotel Management, Website for your institute / Website of any Organization)
3. The Project Report cover the following topic - Objective, Hardware & Software Requirements, Analysis, Design, Coding, input forms, testing, Reports, Future enhancement of s/w.
4. Practical exam is based on the Project Demnstration & report.

बिलासपुर विश्वविद्यालय, बिलासपुर (छ.ग.)

पाठ्यक्रम
SYLLABUS

सत्रः 2017-18

बी.एससी. भाग-3
B.Sc. PART-3

Website: - www.bilaspuruniversity.ac.in

PT. RAVISHANKAR SHUKLA UNIVERSITY RAIPUR (C.G.)

REVISED ORDINANCE NO. 21

BACHELOR OF SCIENCE

1. The three year course has been broken up into three Parts. Part-I known as B.Sc. Part-I examination at the end of the first year, Part-II known as B.Sc. Part-Ii examination at the end of the second year and Part-III known as B.Sc. Part-III examination at the end of the third year.

2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of C.G. Board of Secondary Education Bhopal or any other Examination recognised by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated College or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.Sc. Part-I examination.

3. A candidate who, after passing the B.Sc.-I examination of the University or any other examination recognised by the University as equivalent thereto, has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-II examination.

4. A candidate who, after passing the B.Sc. Part-Ii examination of the University, has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-III examination.

5. Besides regular students, subject to their compliance with this Ordinance ex-student and non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular student at any of the University Teaching Department or College.

6. Every candidate appearing in B.Sc. Part-I, Part-II and Part-III examination shall be examined in -

   (i) Foundation Course :

   (ii) Any one of the following combinations of three subjects :-

      1. Physics, Chemistry & Mathematics.
      2. Chemistry, Botany & Zoology.
      3. Chemistry, Physics & Geology.
      4. Chemistry, Botany & Geology.
      5. Chemistry, Zoology & Geology.
      6. Geology, Physics & Mathematics.
      7. Chemistry, Mathematics & Geology.
      8. Chemistry, Botany & Defence Studies.
      9. Chemistry, Zoology & Defence Studies
      10. Physics, Mathematics & Defence Studies.
      11. Chemistry, Geology & Defence Studies
      12. Physics, Mathematics & Statistics
      13. Physics, Chemistry & Statistics
      14. Chemistry, Mathematics & Statistics.
      15. Chemistry, Zoology & Anthropology.
      16. Chemistry, Botany & Anthropology.
      17. Chemistry, Geology & Anthropology.
      18. Chemistry, Mathematics & Statistics.

19. Chemistry, Anthropology & Defence Studies.
20. Geology, Mathematics & Statistics.
21. Mathematics, Defence Studies & Statistics
22. Anthropology, Mathematics & Statistics
23. Chemistry, Anthropology & Applied Statistics
24. Zoology, Botany & Anthropology
25. Physics, Mathematics & Electronics.
26. Physics, Mathematics & Computer Application
27. Chemistry, Mathematics & Computer Application
28. Chemistry, Bio-Chemistry & Pharmacy
29. Chemistry, Zoology & Fisheries.
30. Chemistry, Zoology & Agriculture
31. Chemistry, Zoology & Sericulture
32. Chemistry, Botany & Environmental Biology
33. Chemistry, Botany & Microbiology
34. Chemistry, Zoology & Microbiology
35. Chemistry, Industrial Chemistry & Mathematics
36. Chemistry, Industrial Chemistry & Zoology
37. Chemistry, Biochemistry, Botany
38. Chemistry, Biochemistry, Zoology
39. Chemistry, Biochemistry, Microbiology
40. Chemistry, Biotechnology, Botany
41. Chemistry, Biotechnology, Zoology
42. Geology, Chemistry & Geography
43. Geology, Mathematics & Geography
44. Mathematics, Physics & Geography
45. Chemistry, Botany & Geography

(iii) Practical in case prescribed for core subjects.

7. Any candidate who has passed the B.Sc. examination of the University shall be allowed to present himself for examination in any of the additional subjects prescribed for the B.Sc. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.Sc. Part-I examination in the subjects which he proposes to offer and then the B.Sc. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

8. In order to pass at any part of the three year degree course examination an examinee must obtain not less than 33% of the total marks in each subject/ group of subjects. In subject/ group of subjects where both theory and practical examination are provided an examinee must pass in both theory and practical parts of the examination separately.

9. Candidate will have to pass separately at the Part-I, Part-II and Part-III examinations. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken in to account. Provided in case of candidate who has passed the examination through supplementary examination having failed in one subject/ group only, the total aggregate marks being carried over for determining the division shall include actual marks obtained in the subject/ group in which he appeared at the supplementary examination.

10. Successful examinee at the Part-III examination obtaining 60% or more marks shall be places in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.

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In clause 6(ii) after serial No. 41, 42-45 inserted. Approved in 23rd Co-Ordination committee Dated 15-01-2014.

B. Sc. Part - III

विषय–सूची

SCHEME OF EXAMINATION

Subject		Paper	Max. Marks	Total Marks	Min. Marks
(A)	Compulsory Subject Foundation Course				
	1) Hindi Language	I	75	-	26
	2) English Language	I	75	-	26
(B)	Three Elective Subject :				
2.	Chemistry	I	33		
		I	33	100	33
		III	34		
		Practical		50	17
1.	Physics	I	50		
		I	50	100	33
		Practical		50	17
3.	Mathematics	I	50		
		I	50	150	50
		III	50		
4.	Botany	I	50		
		I	50	100	33
		Practical		50	17
5.	Zoology	I	50		
		I	50	100	33
		Practical		50	17
6.	Geology	I	50		
		I	50	100	33
		Practical		50	17
7.	Statistics	I	50		
		I	50	100	33
		Practical		50	17
8.	Anthropology	I	50		
		I	50	100	33
			Practical	50	17
9.	Inde. chemistry	I	34		
		I	33	100	33
		III	33		
		Practical		50	17

Subject	Paper		Max. Marks	Min. Marks
10. Defence Studies	I	50	100	33
	I	50		
	Practical		50	17
11. Micro Biology	I	50	100	33
	I	50		
	Practical		50	17
12. Electronics	I	50	100	33
	I	50		
	Practical		50	17
13. I.T.	I	50	100	33
	I	50		
	Practical		50	17
14. Computer Science	I	50	100	33
	I	50		
	Practical		50	17
15. Biochemistry	I	50	100	33
	I	50		
	Practical		50	17

USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 exammination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986.

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the University or examination centres.
3. Calculators with, memoty and following variables be permitted +, -, x, , square, reciprocal, expotentials log, square root, trignometric functions, wize, sine, cosine, tangent etc. factiorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.

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आधार पाठ्यक्रम

हिन्दी भाषा

(पेपर कोड-0891)

प्रथम प्रश्न पत्र **पूर्णांक - 75**

(बी.ए., बी.एस.सी., बी.एच.एस-सी., बी.काम., तृतीय वर्ष के पुनरीक्षित एकीकृत आधार पाठ्यक्रम एवं पाठ्य सामग्री का संयोजन 2000-2001 से लागू है)

।। सम्प्रेषण कौशल, हिन्दी भाषा और सामान्य ज्ञान ।।

आधार पाठ्यक्रम की संरचना और अनिवार्य पाठ्य पुस्तक- हिन्दी भाषा एवं समसामयिकी- का संयोजन इस तरह किया गया है कि सामान्य ज्ञान की विषय वस्तु- विकासशील देशों की समस्याओं- के माध्यम और साथ-साथ हिन्दी भाषा का ज्ञान और उसमें सम्प्रेषण कौशल अर्जित किया जा सके । इसी प्रयोजन से व्याकरण की अन्तर्वस्तु को विविध विधाओं की संकलित रचनाओं और सामान्य ज्ञान की पाठ्य सामग्री के साथ अन्तर्गुम्फित किया गया है । अध्ययन-अध्यापन के लिए पूरी पुस्तक की पाठ्य सामग्री है और अभ्यास के लिये विस्तृत प्रश्नावली है । यह प्रश्नपत्र भाषा का है अत: पाठ्य सामग्री का व्याख्यात्मक या आलोचनात्मक अध्ययन अपेक्षित नहीं है । पाठ्यक्रम और पाठ्य सामग्री का संयोजन निम्नलिखित पाँच इकाइयों में किया जाता है । प्रत्येक इकाई को दो भागों में विभक्त किया गया है ।

इकाई - 1 **(क) भारत माता :** सुमित्रानंदन पंत, परशुराम की प्रतीज्ञा : रामधारी सिंह दिनकर, बहुत बड़ा सवाल : मोहन राकेश, संस्कृति और राष्ट्रीय एकीकरण : योगेश अटल ।

(ख) कथन की शैलियाँ : रचनागत उदाहरण और प्रयोग ।

इकाई -2 (क) विकासशील देशों की समस्यायें, विकासात्मक पुनर्विचार, और प्रौद्योगिकी एवं नगरीकरण ।

(ख) विभिन्न संरचनाएँ ।

इकाई - 3 (क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण तथा धारणीय विकास ।

(ख) कार्यालयीन पत्र और आलेख ।

इकाई - 4 (क) जनसंख्या : भारत के संदर्भ में और गरीबी तथा बेरोजगारी ।

(ख) अनुवाद ।

इकाई - 5 (क) ऊर्जा और शक्तिमानता का अर्थशास्त्र ।

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

मूल्यांक योजना : प्रत्येक इकाई से एक-एक प्रश्न पूछा जायेगा । प्रत्येक प्रश्न में आंतरिक विकल्प होगा । प्रत्येक प्रश्न के 15 अंक होंगे । प्रत्येक इकाई दो-दो खंड (क्रमश: 'क' और 'ख' में) विभक्त है, इसलिए प्रत्येक प्रश्न के भी दो भाग, (क्रमश: 'क' और 'ख') होंगे । 'क' अर्थात पाठ एवं सामान्य ज्ञान से संबद्ध प्रश्न के अंक 8 एवं 'ख' अर्थात भाषा एवं सम्प्रेषण कौशल से संबद्ध प्रश्न के अंक 7 होंगे । इस प्रकार पूरे प्रश्न पत्र के पूर्णांक 75 होंगे ।

PART - II

(Paper Code-0892)

ENGLISH LANGUAGE M.M. 75

The question paper for B.A./B.Sc./B.Com./B.H.Sc. III Foundation course, English Language and General Answers shall comprise the following items :

Five question to be attempted, each carrying 3 marks.

UNIT-I Essay type answer in about 200 words. 5 essay type question to be asked three to be attempted. 15

UNIT-II Essay writing 10

UNIT-III Precis writing 10

UNIT-IV (a) Reading comprehension of an unseen passage 05

(b) Vocabulary based on text 10

UNIT-V Grammar Advanced Exercises 25

Note : Question on unit I and IV (b) shall be asked from the prescribed text. Which will comprise of popular create writing and the following items. Minimum needs housing and transport Geo-economic profile of M.P. communication Educate and culture. Women and Worm in Empowerment Development, management of change, physical quality of life. War and human survival, the question of human social value survival, the question of human social value, new Economic Philosophy Recent Diberaliation Method) Demoration docontralisation (with reference to 73, 74 constitutional Amendment.

Books Prescribed :

Aspects of English Language And Development - Published by M.P. Hindi Granth Academy, Bhopal.

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CHEMISTRY

The new curriculum will comprise of Three papers of 33,33, & 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 & the practical work of 180 hrs. duration.

PAPER - I (Paper Code-0895)

INORGANIC CHEMISTRY M.M. 33

UNIT-I METAL-LIGAND BONDING IN TRANSITION METAL COMPLEXES

Limitations of valence bond theory, an elementary idea of crystal field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal field parameters.

Thermodynamic and kirietic aspects of metal complexes.

A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, subsititution reactions of square planar complexes.

UNIT-II MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES

Types of magnetic behaviour, methods of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of μs 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 $[Ti(H_2O)_6]^{3+}$ complex ion.

UNIT-III ORGANOMETALLIC CHEMISTRY

Definition, nomenclature and classification of organo metallic compounds. Preparation, properties, bonding and applications of alkyls and aryls of Li, Al, Hg, Sn, & Ti, A brief account of metal-ethylenic complexes and homogeneous hydrogenation, monouclear carbonyls and nature of bodning in metal carbonyls.

UNIT-IV BIOINORGANIC CHEMISTRY

Essential and trace elements in biological processes, metalloporphyrins with special reference to hemoglobin and myoglobin. Biological role of alkali and alkaline earth metals with special reference to Ca^{21}, nitrogen fixation.

UNIT-V HARD AND SOFT ACIDS AND BASES (HSAB) 07 HRS.

Classification of acids and bases as hard and soft. Perason's HSAB concept, acid-base strength and hardness and softness. Symbiosis

Silicones and Phosphazenes

Silicons and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

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. McDaniel and J. Alexander, John Wiley
4. Inorganic Chemistry, D.E. Shriver, P.W. Atkkins and C.H. Langford, Oxford.

5. Inorganic Chemistry, W.W. Porterfield, Addison-Wesley.
6. Inorganic Chemistry, A.G. Sharp, ELBS.
7. Inorganic Chemistry, G.L. Miessler and D.A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satyas Prakash.
9. Advanced Inorganic Chemistry, Agarwal & Agarwal.
10. Advanced Inorganic Chemistry, Puri & Sharma, S. Naginchand
11. Inorganic Chemistry, Madan, S. Chand & Co.
12. Adhunik Akarbanic Rasayan, A.K. Shrivastav & P.C. Jain, Goel Pub.
13. Ucchattar Akarbanic Rasayan, Satya Prakash & G.D. Tuli, Shyamlal Prakashan
14. Ucchattar Akarbanic Rasayan, Puri & Sharma.

PAPER - II (Paper Code-0896)

ORGANIC CHEMISTRY M.M. 33

UNIT-I A. ORGANICMETALLIC COMPOUNDS

Organomegenesium compounds : Grignard reagents-formation, structure and chemical reactions. Organozinc compounds : formation and chemical reactions. Organolithium compounds : formation and chemical reactions.

B. Organosulphur Compounds

Nomenclature, structural features, methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.

Organic Synthesis via Enolates

Active methylene groupalkylation of diethylmalonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate : the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.

UNIT-II BIOMOLECULES

A. Carbohydrates :

Configration of monosaccharides, threo and erytho diastereomers. Formation of glycosides ethers and esters Determination of ring size of monosaccharides. Cyclic structure of D(+) glucose. Structure of ribose and deoxyribose. An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

B. Proteins and Nucleic acids

Classification and structure of protein levels of protein structure, protein denaturation / renaturation, Constituents of amino acids Ribonucleicsids and ribouncleotieds, double helical structure of DNA.

UNIT-III A. Synthetic Polymers

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-IV SPECTROSCOPY

A. Mass spectroscopy : mass spectrum fragmentation of functional groups.

B. InfraRed Spectroscopy : IR absorption Band their position and intensity, Identification of IR spectra.

C. UV-Visible Spectroscopy : Beer Lambert's law, effect of Conjugation max Visible spectrum and colour.

D. Anthocyanin as natural colouring matter (Introduction only)

E. Application of Mass, IR, UV-Visible Spectroscopy to organic molecules.

UNIT-V A. NMR Spectroscopy : Introduction to NMR. Shielding and Number of signal in PMR, Chemical shift and characteristic values, spiltting of Signals and Coupling constant. Application to organic molcules.

B. ^{13}**CMR Spectroscopy :** Principal & Application.

C. Magnetic Resonance Imaging (MRI)- Introductory idea.

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-Eastern (New-Age)
5. Organic Chemistry, F.A. Carey, McGraw Hill
6. Introduction to Organic Chemistry, Streiweisser, Heathcock and Kosover, Macmillan
7. Organic Chemistry, P.L. Soni
8. Organic Chemistry, Bahi & Bahl
9. Organic Chemistry, Joginder Singh
10. Carbanic Rasayan, Bashi & Bahi
11. Carbanic Rasayan, R.N. Singh, S.M.I. Gupta, M.M. Bakodia & S.K. Wadhwa
12. Carbanic Rasayan, Joginder Singh.
13. Carbanic Resayan, P.L., Soni.
14. Corbanic Rasayan, Bhagchandani, Sahitya Bhawan Publication.
15. Rasayan Vigyan, Bhatnagar, Arun Prakashan.

PAPER - III (Paper Code-0897)

PHYSICAL CHEMISTRY **M.M. 34**

UNIT-I QUANTUM MECHANICS

Black body radiation, Plank's radiation law, photoelectric effect, Compton effect. DeBroglie's idea of matter waves, experimental verification Heisenberg's uncertainty principle, Sinosoidal wave equation, Operators : Hamiltonian operator, angular momentum operator, laplacian operators postulate of quantum mechanics Eigen values, Eigen function. Schrodinger time independed wave equation physical significance of and . Applications of schrodinger wave equation : particle in one dimensional box Hydrogenation (separation into three equation's) radial wave function and angular wave function.

UNIT-II QUANTUM MECHANICS-II

Quantum mechanical approach of molecular orbit theory; basic idea 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 and

orbitals and their characteristics, Hybrid orbital : SP, SP^2, SP^3, Calculation of coefficients Ad^s used in these hybrid orbitals.

Introduction to valence bond model of H^2, Comparison of M.O. and V.B. model, Huckle theory, application of huckel theory to ethane propene etc.

UNIT-III SPECTROSCOPY-I

A. Introduction, characterization of electromagenetic radiation, regions of the spectrum, representation of spectra width and intensity of spectral transition, rotational spectra of calculated diatomic molecules, energy level of rigid rotator, selection rule, determination of bond length qualitative description of non - rigid rotator isotopic effect.

B. Vibrational spectra - Fundamental vibrational and their symmetry, vibrating diatomic molecules, enegy levels of simple harmonic oscillator. Selection Rule, Pure vibrational Spectrum, determination of force constant, diatomic vibrating operator. Anhormonic Oscillator.

C. Raman Spectra : Concept of polarizability, quantum theory of Raman spectra stokes and anti stokes lines pure rotational and vibrational Raman spectra, Application of Raman spectra stokes and anti stokes lines, pure rotational and vibrational Raman apectra, Applications of Raman spectra.

UNIT-IV SPECTROSCOPY-II

A. Electronic Spectra : Electronic Spectra of diatonic molecule, Frank London principle, types of electronic transitions. Applications of electronic spectra.

B. Photo-chemistry : Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry. Grothus-Drapper law, Stark-Elinstein law, Jablonski diagram depicting various process occurring in the excited state, qualitative description of fluorescence, occurring in the excited state, qualitative descripiton of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield photosensitized reactions energy transfer processes (simple examples).

UNIT-V A. Thermodynamics

Energy refered to absolute zero, third law of therodynamics Test of III law of thermodynamics Nerst heat theorem application and limitation of Nerst heat theorem.

B. Physical properties and molecular structure : polarization of molecules, {Classius-Mosotti equation. orientation of dipoles in an electric field. Dipol moment, induced dipole moment, measurement of dipole moment. Temperature methods and refractivity methods. Dipole moment and molecular structure.

C. Magnetic Properties : Parmagenetism diamagnetism, ferromagnetism. Determination of magnetic susceptibility, elucidation of molecular structure.

REFERENCE BOOKS :

1. Physical Chemistry, G.M. Barrow, International student edition, McGaw Hill
2. Basic programming with application, V.K. Jain, Tata McGraw-Hill
3. Computers & Common sense, R. Hunt & Shelly, Prentice-Hall
4. University general chemistry, C.N.R. Rao, Macmillan.
5. Physical Chemistry, R.A. Alberty, Wiley Eastern
6. The elements of Physical Chemistry, P.W. Atkin, Oxford

7. Physical Chemistry through problems, S.K. Dogra & S. Dogra, Wiley Eastern
8. Physical Chemistry, B.D. Khosla
9. Physical Chemistry, Puri & Sharma
10. Bhoutic Rasayan, Puri & Sharma
11. Bhoutic Rasayan, P.L. Soni
12. Bhoutic Rasayan, Bahl & Tuli

PAPER-IV

LABORATORY COURSE **180 Hrs.**

Inorganic Chemistry

Synthesis Analysis

(a) Preparation of Sodium trioxalato ferrate (III), $Na_3[Fe(C_2O_4)_3]$ and determination of its composition by permanganometry.
(b) Preparation of Ni-DMG complex, $[Ni(DMG)_2]$
(c) Preparation of copper tetraammine complex, $[Cu(NH_3)_4]SO_4$.
(d) Preparation of cis-and trans-bioxalato diaqua chromate (III) ion.

Gravimetric Analysis

Analysis of Cu as CuSCN or CuO, Ni as $Ni(DMG)_2$, Ba as $BaSO_4$ and Fe as Fe_2O_3

Organic Chemistry

Laboratory Techniques

A Steam Distillation
Napthalene from its suspension in water
Clove oil from cloves
Separation of ortho and para-nitrophenols.

B Column Chromatography
Separation of fluorescein and methylene blue
Separation of leaf pigments from spinach leaves
Resolution of recemic mixture of (+,-) mandelic acid.

Qualitative Analysis

Analysis of an organic mixture containing two solid components using water, $NaHCO_3$, NaOH for separation and preparation of suitable derivatives.

Synthesis of Organic Compounds

(a) Acetylation of salicylic acid, aniline, glucose and hydroquinone. Benzoylation of aniline and phenol.
(b) Aliphatic electrophilic substitution- Preparation of iodoform form ethanol and acetone.
(c) Aromatic electrophilic substitution-
Nitration-Preparation of m-dinitrobenzene, p-nitroacetanilide
Halogenation- Preparation of p-bromoacetanilide, 2,4,6 tribromophenol
(d) Diazotization/Coupling- Preparation of methyl orange and methyl red
(e) Oxidation- Preparation of benzoic acid from toluene
(f) Reduction- Preparation of aniline from nitrobenzene, m-nitroaniline from m-dinitrobenzene.

Physical Chemistry

Electrochemistry

(a) To determine strength of given acid conductometrically using standard alkali solution.
(b) To determine solubility and solubility product of a sparingly soluble electrolyte conductometrically.

(c) To study saponification of ethyl acetate conductometrically.

(d) Determine the ionization constant of a weak acid conductometrically.

(e) To titrate potentionmetrically the given ferrous ammonium sulphate using $KMnO_4/K_2Cr_2O_7$ as titrant and calculate the redox potential of Fe^{2+}/Fe^{3+} system on the hydrogen scale.

Refractometry and Polarimetry

(a) To verify law of refraction of mixtures (e.g. of glycerol and water) using Abbe's refractometer.

(b) To determine the specific rotation of a given optically active compound.

Molecular Weight Determination

(a) Determination of molecular weight of a non-volatile solute by Rast method/Beckmann freezing point method.

(b) Determination of the apparent degree of dissociation of an electrolyte (e.g., NaCl) in aqueous solution at different concentrations by ebullioscopy.

Colorimetry

To verify Beer-Lambert law for $KMnO_4/K_2Cr_2O_7$ and determine the concentration of the given solution of the substance.

REFERENCE BOOKS :

1. Vogel's qualitative Analysis, revised, Svehla, Orient Longman
2. Standard methods of chemical analysis, W.W. Scott, The Technical Press
3. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, tata McGraw Hill.
4. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern
5. Vogel's Text Book of Practical Organic Chemistry, B.S. Furnis, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchel, ELBS
6. Experiments in general chemistry, C.N.R. Rao & U.C. Agrawal
7. Experiments in Physical Chemistry, R.C. Das & Behra, Tata McGraw Hill
8. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.

8 Hrs. PRACTICAL EXAMINATION M.M.50.

Five experiments are to be performed.

1. Inorganic - Two experiments to be performed.
   Gravimetric estimation compulsory carrying 08 marks. (Manipulation 3 marks).
   Anyone experiment from synthesis and analysis carrying 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) carrying 04 marks.
3. Physical-One physical experiment carrying 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.

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PHYSICS

Objectives :

Present course is aimed to provide ample knowledge of basics of Physics which are relevant to the understanding of modern trends in higher physics.

The first paper is aimed at preparing the back ground of modern physics which includes the relativistic and quantum ideas mainly councerned with atomic, molecular and nuclear physics. It consistutes an essential pre-requisite for better understanding of any branch of physics.

The second paper is mainly concerned with Solid State Physics, Solid State Devices and Electronics. This course is quite important from the applicational aspects of modern electronic devices. It also forms the basis of advance electronics including communication technology to be covered at higher level.

The experiments are based mostly on the contents of the theory papers so as to provide comprehensive insight of the subject.

Scheme of Examination :

1. There shall be two theory papers of 3 hours duration each and one practical paper of 4 hours duration. Such paper shall carry 50 marks.
2. Each theory paper will comprise of 5 units. Two questions will be in each unit and the student will have the choice to answer one out of the two.
3. Numerical problems of about 30 percent will compulsorily be asked in each theory paper.
4. In practical paper each student has to perform two experiments during examination.
5. Practical examination will be of 4 hours duration. The distribution of practical marks will be as follows.

   Experiments : 15 + 15 = 30, Viva-voce :10

   Internal Assessment - 10.

PAPER - I (Paper Code-0893)

RELATIVITY, QUANTUM MECHANICS, ATOMIC MOLECULAR AND NUCLEAR PHYSICS.

UNIT-I Reference systems, inertial frames, Galilean invariance and conservation laws, propogation of light, Michelson-Morley experiment, search for ether.

Postulates for the special theory of ralativity, Lorentz tranformations, length contraction,time dilation, velocity additon theorem, variation of mass with velocity, mass-energy equivalence, particle with zero rest mass, Compton effect.

UNIT-II Origin of the quantum theory : Failure of classical physics to explain the phenomena such as black-body spectrum, photoelectric effect.

Wave-particle duality and uncertainty principle : de Broglie's hypothesis for matter waves : the concept of wave and group velocities, evidence for diffraction & interference of particles, experimental demonstration of mater waves. Davisson and Germer's experiment.

Consequence of de Broglie's concepts, quantisation in hydrogen atom, energies of a particle in a box, wave packets.

Consequence of the uncertainty relation : gamma ray microscope, diffraction at a slit.

UNIT-III Quantum Mechanics : Schrodinger's equation. Postulatory basis of quantum mechanics, operators, expectation values, transition probabilities, applications to particle in a one- and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier.

Hydrogen atom : natural occurrence of n, and m quatum numbers, the related physical quantities.

UNIT-IV Spectra of hydrogen, deuteron and alkali atoms spectral terms, doublet fine structure, screening constants for alkali spectra for s,p, d and f states, selection rules.

Discrete set of elctronic energies of moleculers, quantisation of vibrational and rotational energies, determination of internuclear distance, pure rotatinal and rotation vibration spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic vibration spectra.

Raman effect, Stokes and anti-Stokes lines, complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.

UNIT-V Interaction of charged particles and neutrons with mater, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chambers, spark chamber, emulsions.

Structure of nuclei, basic properties (, μ Q and binding energy), deuteron binding energy, p-p and n-p scattering and general concepts of nuclear forces, Beta decay, range of alpha particle Geiger-Nuttal law. Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra.

Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model & liquid drop model, fission and fusion (concepts), energy production in stars by p-p and carbon cycles (concepts).

TEXT AND REFERENCE BOOKS :

1. H.S. Mani and G.K. Metha : "Introduction to Modern Physics"'' (Affiliated East-West Press, 1989)
2. A Beiser, "Prospective of Modern Physics"
3. H.E. White, Introduction to Atomic Physic"
4. Barrow, "Introduction to Molecular Physics!"
5. R.P. Feynman, R.B. Leighton and M Sands, "The Feynman Lectures on Physics", Vol.III (B.I. Publications, Bombay, Delhi, Calcutta, Madras).
6. T.A. Littlefield and N Thorley, "Atomic and Nuclear Physics" (Engineering Language Book Society)
7. H.A. Enge, "Introduction to Nuclear Physics", (Addision-Wesly)
8. Eisenberg and Resnik, "Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles" (John Wiley)
9. D.P. Khandelwal, "Optics and Atomic Physics", (Himalaya Publishing House, Bombay, 1988).

PAPER-II (Paper Code-0894)

SOLID STATE PHYSICS, SOLID STATE DEVICES AND ELECTRONICS

UNIT-I Amorphous and crystalline solids, Elements of symmetry, seven crystal system, Cubic lattices, Crystal planes, Miller indices, Laue's equation for X-ray diffraction, Bragg's Law. Bonding in solids, classification. Cohesive energy of solid.

Madelung constant, evaluation of Parameters.

Specific heat of solids, classical theory (Dulong-Petit's law). Einstein and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin Zone.

UNIT-II Free electron model of a metal, Solution of one dimensional Schrodiner equation in a constant potential. Density of states. Fermi Energy, Energy bands in a solid (Kronig-Penny model without mathematical details). Metals, Insulator and Semiconductors. Hall effect.

Dia, Para and Ferromagnetism. Langevin's theory of dia and para-magnetism. Curie-Weiss's Law. Qualitative description of Ferromagnetism (Magnetic domains), B-H. curve and Hysteresis loss.

UNIT-III Intrinsic semiconductors, carrier concentration in thermal equlibrium, Fermi level, Impurity semiconductor, doner and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emmitting diode, solar cell, Bipolar transistors, pnp and npn transistors, characteristics of transistors, different configurations, current amplification factor, FET.

UNIT-IV Half and full wave rectifier, rectifier efficiency ripple factor, Bridge rectifier, Filters, Inductor filter, T and N filters, Zener diode, regulated power supply.

Applications of transistors.

Bipolar Transistor as amplifier.

Single stage and CE small signal amplifiers, Emitter followers, Transistoras power amplifier, Transistor as oscillator, Wein-Bridge Oscillator and Hartley oscillator.

UNIT-V Introduction to computer organisation, time sharing and multi programming systems, window based word processing packages, MS Word.

Introduction to C programming and application to simple problems of arranging numbers in ascending / descending orders : sorting a given data in an array, solution of simultaneous euation.

BOOKS RECOMMENDED :

1. Introduction to solid state physics : C.Kittel
2. Solid State Physics : A.J. Dekkar
3. Electronic Circuits : Mottershead
4. Electronic Circuits : Millman and Halkias
5. Semiconductor Devices : S.M. Sze
6. Computer fundamental : balaguara Swami

PRACTICALS

MINIMUM 16 (Sixteen) Out of the following or similar experiment of equal standard :

1. Determination of Planck's constant
2. Determination of e/m by using Thomson's tube
3. Determination of e by Millikan's method
4. Study of spectra of hydrogen and deuterium (Rydberg constant and ratio of masses of electron proton)
5. Absorption spectrum of iodine vapour
6. Study of alkali or alkaline earth spectra using a concave gra's
7. Study of Zeeman effect for determination of Lande g-factor.
8. Analysis of a given band spectrum.
9. Study of Raman spectrum using laser as an excitation source.
10. Study of absorption of alpha and beta rays.
11. Study of statistics in radioactive measurement.
12. Coniometric study of crystal faces.
13. Determination of dielectric constant
14. Hysteresis curve of transformer core
15. Hall-probe method for measuement of magnetic field
16. Specific resistance and energy gap of a semiconductor
17. Characteristics of transistor
18. Characteristics of a tunnel diode
19. Study of voltage regulation system
20. Study of a regulated power supply
21. Study of lissajous figures using a CRO
22. Study of VTVM
23. Study of RC and TC coupled amplifiers
24. Study of AF and RF oscillators
25. Find roots of f(x)=0 by using Newton-Raphson method
26. Find roots of F(x)=0 by using secant method
27. Integration by Simpson rule
28. To find the value of V at
31. String manipulations
32. Towers of Honoi (Nonrecursive)
33. Finding first four perfect numbers
34. Quadratic interpolation using Newton's forward-difference formula of degree two.

TEXT AND REFERENCE BOOKS :

1. B.G. Strechman ; "Solid State Electronic Devices". II Edition (Prentice-Hall of India, New Delhi, 1986)
2. W.D. Stanley ; "Electronic Devices, Circuits and Applications" (Prentice Hall, New Jersey, USA, 1988)
3. S. Lipschutsz and A Poe ; "Schaum's Outline of Theory and Problems of Programming with Fortran" (McGraw-Hill Book Co. Singapore, 1986)
4. C Dixon ; "Numerical Analysis"

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MATHEMATIS

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.

PAPER - I (Paper Code-0898)

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. Intergrability 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's 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. Geometric 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. Fixedpoints, 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 Coarse 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 & J.W. Brown, Complex Variables and Applications, 5*" Edition, McGraw-Hill, NewYork, 1990.
8. MarkJ. Ablowitz & 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, Inroductin to Topology and Modern Analysis, McGraw-Hill, 1963.

PART - II (Paper Code-0899)

ABSTRACT ALGEBRA

UNIT-I Group-Automorphisms, inner automorphism. Automorphism 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 Eisenstien Criterion, Polynomial Rings over Commutative Rings, Unique factorization domain. R unique factorisation domain implies so is R [x1, x2 ..... xn] 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 theoremfor bases. Invariance of the number of elements of a basis set. Dimension. Existence of complementary subspace of a 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 (2"" Edition) Cambridge University Press, Indian Edition, 1997.

6. K. Hoffman and R. Kunze,Linear Algebra, 2"" Editon, Prentice Hall. Englewood Cliffs, New Jersey, 1971.
7. S.K. Jain, A. Gunawardena & 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, Norosa 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.

PAPER - III - (OPTIONAL)

(I) PRINCIPLES OF COMPUTER SCIENCE (Paper Code-0900)

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 Evolutionof 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 **Artifical Intelligence -** Some Philosophical Issues. Image Analysis. Reasoning, Control System Activities. Using Heuristics. Artificial Neural Networks. Application of Artificial Intelligence.

Theory of Computation - Turning 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.

PAPER - III - (OPTIONAL)

(II) DISCRETE MATHEMATICS (Paper Code-0901)

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-IV1 **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. Prepositional Calculus. Design and Implementation of Digital Networks. Switching Circuits.

REFERENCES :

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

PAPER - III - (OPTIONAL)

(III) APPLICATION OF MATHEMATICS IN FINANCE AND INSURANCE (Paper Code-0902)

Application of Mathematics in Finance :

UNIT-I **Financial Management -** An overview. Nature and Scope of Financial Management. Goals of Financial Management and main decisions of financial management. Difference between risk, speculation and gambling.

Time value of Money-Interest rate and discount rate. Present value and future valuediscrete case as well as continuous compounding case. Annuities and its kinds.

UNIT-II Meaning of return. Return as Internal Rate of Return (IRR). Numerical Methods like Newton RaphsonMethod to calculate IRR. Measurement of returns under uncertainty situations. Meaning of risk. Difference between risk and uncertainty. Types of risks. Measurement of risk. Calculation of security and Portfolio Risk and Return-Markowitz Model. Sharpe's Single Index Model Systematic Risk and Unsystematic Risk.

UNIT-III Taylor series and Bond Valuation. Calculation of Duration and Convexity of bonds. Financial Derivaties - Futures. Forward. Swaps and Options. Call and Put Option. Call and Put Parity Theorem. Pricing of contingent claims through Arbitrage and Arbitrage Theorem.

Application of Mathematics in Insurance

UNIT-IV Insurance Fundamentals - Insurance defined. Meaning of loss. Chances of loss, peril, hazard, and proximate cause in insurance. Costs and benefits of insurance to the society and branches of insurance-life insurance and various types of general insurance. Insurable loss exposuresfeature of a loss that is ideal for insurance. Life Insurance Mathematics - Construction of Mortality Tables. Computation of Premium of Life Insurance for a fixed duration and for the whole life.

UNIT-V Determination of claims for General Insurance - Using Poisson Distribution and Negative Binomial Distribution-the Polya Case.

Determination of the amount of Claims in General Insurance - Compound Aggregate claim model and its properties, and claims of reinsurance. Calculation of a compound claim density function. F-recursive and approximate formulae for F.

REFERENCES :

1. Aswath Damodaran, Corporate Finance - Theory and Practice, John Wiley & Sons Inc.
2. John C. Hull, Options, Futures, and Other Derivatives, Prentice-Hall of Indian Private Limited.
3. Sheldon M. Ross, An Introduction to Mathematical Finance, Cambridge University Press.
4. Mark S. Dorfman, Introduction to Risk Management and Insurance, Prentice Hall, Englwood Cliffs, New Jersey.
5. C.D. Daykin, T. Pentikainen and M. Pesonen, Practical Risk Theoryfor Actuaries, Chapman & Hall.

PAPER - III - (OPTIONAL)

Theory component will have maximum marks 30.

Practical component will have maximum marks 20.

(IV) PROGRAMMING IN C AND NUMERICAL ANALYSIS (Thoury & Practical)

(Paper Code-0903)

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. Puppetting 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 Formulasusing 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 (Guass 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, Lanezos' 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.

Unit-V Monte Carlo Methods Random number generation, congruential generators, statistical tests of pseudo-random numbers.

Random variate generation, inverse tranform method, composition method, acceptancerejection 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 intergration.

REFERENCES :

1. Henry Mullish& Herbert L. Cooper, Spirit of C : An Introductionto Modern Programming, Jaico Publishers, Bombay.
2. B.W. Kernighan and D.M. Ritchie. The C Programming Language 2"d 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. Hutehisonand 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 Anasysis, 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. lyengar, R.K. Jain, Numerical Methods Problems and Solutions, New Age International (P) Ltd., 1996.
12. M.K. Jain, S.R.K. lyengar, 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 C function seriessum () to calculate the sum of series :
    $1+X+1/2!\ X^2+1/3!\ X^3+\ldots\ldots 1/n!\ X^n$
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, sub 1, sub2, sub3, sub4 and total.
14. Write a program in C to copy one string to another using pointers. (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.

PAPER - III - (OPTIONAL)

(V) MATHEMATICAL MODELLING (Paper Code-0904)

The Process of Applied mathematics.

UNIT-I Setting up first-order differential equations - Qualitative solution sketching. Difference and differential equation growth models.

UNIT-II Single-species population models. Population growth-An age structure model. The spread of Technological innovation.

UNIT-III Higher-order linear models- A model for the detection of diabetes. Combat modes. Traffic models - Car-following models. Equilibrium speed distributions.

UNIT-IV Nonlinear population growth models. Prey-Predator models. Epidemic growth models. Models from political science - Proportional representation-cumulative voting, comparison voting.

UNIT-V Applications in Ecological and Environmental subject areas- Urban waste water management planning.

REFERENCES :

1. Differential equation models, Eds. Martin Braun, C.S. Coleman, D.A. Drew.
2. Political and Related Models, Steven. J. Brams, W.F. Lucas, P.D. Straftin (Eds.)
3. Discrete and System models, W.F. Lucas, F.S. Roberts, R.M. Thrall.
4. Life Science Models, H.M. Roberts & M. Thompson.

All volumes published as modules in applied Mathematics, Springer-Verlag, 1982.

5. Mathematical Modelling by J.N. Kapur, New Age International, New Delhi.

BOTANY

PAPER-I (Paper Code-0915)

PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

M.M. : 50

UNIT-I Plant-water relations : Importance of water to plant life ; physical properties of water; diffusion and osmosis; absorption, transport of water and transpiration ; physiology of stomata.

Mineral nutrition : Essential macro and micro-elements and their role ; mineral uptake; deficiency and toxicity symptoms.

UNIT-II Transport of organic substances : Mechanism of phloem transport ; source-sink relationship ; factors affecting translocation.

Basic of enzymology : Discovery and nomenclature ; characteristics of enzymes ; concept of holoenzyme apoenzyme, coenzyme and cofactors ; regulation of enzyme activity, mechanizm of action.

Photosynthesis : Significance ; historical aspects ; photosynthetic pigments ; action spectra and enhancement effects ; concept of two photosystems; Z-scheme ; photo-phosphorylation ; Calvin cycle ; C4 pathway ; CAM plants ; photorespiration.

UNIT-III Respiration : ATP - the biological energy currency ; aerobic and anaerobic respiration; Kreb's cycle, electron transport mechanism (chemi-osmotic theory) ; redox potential; oxidative phosphorylation ; pentose phosphate pathway.

Nitrogen and lipid metobolism : Biology of nitrogen fixation ;importance of nitrate reductase and its regulations ; ammonium assimilation ; structure and function of lipids; fatty acid biosynthesis ; Beta-oxidation ; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.

UNIT-IV Growth and development : Definitions ; phases of growth and development ; kinetics of growth, seed dormancy, seed germination and factors of their regulation ; plant movements ; the concept of photoperiodism ; physiology of flowering ; florigen concept; biological clocks ; physiology of senescence, fruit ripening ; plant hormones auxins, gibberellins, cytokinins, abscisic acid and ethylene, history of their discovery, biosynthesis and mechanism of action ; photomorphogenesis ; phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.

UNIT-IV Genetic engineering : Tools and techniques of recombinant DNA technology ; cloning vectors ; genomic and cDNA library ; transposable elements ; techniques of gene mapping and chromosome walking.

Biotechnology : Functional definition ; basic aspects of plant tissue culture ; cellular totipotency, differentiation and morphogenesis ; biology of Agrobacterium ; vectors for gene delivery and marker genes ; salient achievements in crop biotechnology.

PAPER-II (Paper Code-0916)

ECOLOGY AND UTILIZATION OF PLANTS M.M. : 50

UNIT-I Plants and environment : Atmosphere (gaseous composition), water (properties of water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.

Morphological, anatomical and physiological responses of plants to water (hydro-phytes and xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes and sciophytes) and salinity.

UNIT-II Community Ecology : Community characteristics, frequency, density, cover, life forms biological spectrum ; ecological succession.

Ecosystems : Structure, abiotic and biotic components ; food chain, food web, ecological pyramids, energy flow ; biogeochemical cycles of carbon, nitrogen and phosphorus.

UNIT-III Population ecology : Growth curves ; ecotypes ; ecads.

Biogeographical regions of India.

Vegetation types of India : Forests and grasslands.

UNIT-IV Utilization of Plants

Food plants : Rice, wheat, maize, potato, sugercane.

Fibres : Cotton and jute.

Vegetable oils : Groundnut, mustard and coconut

General account of sources of firewood, timber and bamboos.

UNIT-V Spices : General account.

Medicinal plants : General account

Beverages : Tea and coffee.

Rubber.

PRACTICAL SCHEME **M.M. 50**

01.	Physiology	08
02.	Ecology	08
03.	Utilization of Plants	05
04.	Biochemistry / Biotechnology	05
05.	Spotting (1-5 spots)	10
06.	Project work	04
07.	Viva V.	05
08.	Sessional	05
		50

Suggested Laboratory Exercises

1. To study the permeability of plasma membrance using different concentrations of organicsolvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as inflenced by pH and temperature.
5. Comparison of the rate of respiration of various plant parts.
6. Separation of chloroplast pigment by solvents method.
7. Determinig the osmotic potential of vacuolar sap by plsmolytic method.
8. Determining the water potental of any tuber.
9. Separation of amino acids in a mixtue by paper chromatography and their identification by comparison with standards.
10. Bioassay of auxin, cytokinin, GA. ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristems.
12. Demonstration of the technique of anther culture.
13. Isolation of protoplasts from different tissues using commercially available enzymes.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.

Suggested Laboratory Expercises (Ecology)

1. To determine minimum number of quadrats required for reliable estimate of biomass in grasslands.
2. To study the frequency of herbaceous species in grassland and to compare the frequency distribution with Raunkair's Standard Frequency Diagram.
3. To estimate importance Value Index for grassland species on the basis of relative frequency, relative density and relative biomass in protected and grazed grassland.
4. To measure the vegetation cover of grassland through point frame method.
5. To measure the aboveground plant biomass in a grassland.
6. To determine Kemp's constant for dicot and monocot leaves and to estimate the leaf area index of a grassland community.
7. To determine diversity indices (richness, Simpson, Shannon-Wiener) in grazed and protected grassland.
8. To estimate bulk density and porosity of grassland and woodland soils.
9. To determine moisture content and water holding capacity of grassland and woodland soil.
10. To study the vegetation structure through profile diagram.
11. To estimate transparency, pH and temperature of different water bodies.
12. To measure dissolved oxygen content in polluted and unpolluted water samples.
13. To estimate salinity of different water samples.
14. To determine the percent leaf area injury of different leaf samples collected around polluted sites.
15. To estimate dust holding capacity of the leaves of different plant species.

PRACTICAL

Suggested Laboratory Exercises (for Utilization of Plants)

1. Food Plants : Study of the morphology, structure and simple microchemical tests of the food storing tissues in rice, wheat, maize, potato and sugarcane, Microscopic exmaination of starch in these plants (excepting sugarcane)
2. Fibres : Study of cotton flowers, sectioning of the cotton ovules/developing seeds to trace the origin and development of cotton fibres. Microscopic study of cotton and test for cellulose, Sectioning and staining of jute stem to show the location and development of firbres. Microscopic structure. Test for lignocellulose.
3. Vegetable oils : Study of hand sections of groundnut, mustard and coconut and staining of oil droplets by Sudan III and Sudan Black.
4. Field visits : To study sources of firewood (10 plants), timber-yielding trees (10 trees) and bamboos. A list to be prepared mentioning special features.
5. Spices : Examine black pepper, cloves, cinnamon (hand sections) and opened fruits of cardamom and describe them briefly.
6. Preparation of an illustrated inventory of 10 medicinal plants used in indigenous systems of medicine or allopathy : Write their botanical and common names, parts used and disease/disorders for which they are prescribed.
7. Beverages : Cut Sections of boiled coffee beans and tea leaves to study the characterstic structural features.
8. Rubber : Collect illustrative materials of Hevea brasillensis ; morphology of the plant and tapping practices, history of rubber. List the many uses of rubber.

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ZOOLOGY

Paper-I (Paper Code-0917)

Ecology, Environmental-biology ; Toxicology ; Microbiology and Medical Zology.

2. Attempting one question from each unit will be compulsory. 100% chice be given.

UNIT-I (ECOLOGY)

1. Aims and scopes of Ecology.
2. Major ecosystems of the world-Brief intruduction
3. Population- Characteristics and regualtion of densities.
4. Communities and Ecosystems.
5. Biogeochemical cycles
6. Air and water pollution
7. Ecological succession

UNIT-II (ENVIRONMENTAL BIOLOGY)

1. Laws of limiting factors
2. Food chain in a freshwater ecosystem.
3. Energy flow in ecosystem-Trophic levels
4. Conservation of Natural resources
5. Environmental impact Assessment

UNIT-III (TOXICOLOGY)

1. Definition of Toxicity
2. Classification of toxicants
3. Principle of systematic toxicology
4. Toxic agents and their action- Metallic and inorganic agents
5. Animal poisons - Snake-venom, Scorpion and bee poisoning
6. Food pisoning

UNIT-IV (MICROBIOLOGY)

1. General and Applied microbiology.
2. Microbiology of Domestic water and sewage
3. Microbiology of milk and milk products
4. Industrial microbiology

UNIT-V (MEDICAL MICROBIOLOGY)

1. Brief introduction to pathogenic micro-organisurs, Rickettsia, Spirochaetes and Bacteria.
2. Brief account of life-history and pathogenicity of the following pathogens with reference to man ; Prophylaxis and treatment -
   (a) Pathogenic Protozoans - Entamoeba, Trypanosoma, and Giardia
   (b) Pathogenic helminths - Schistosoma
   (c) Nematode Pathogenic parasites of man
3. Vector insects

PAPER-II

(Paper Code-0918)

(GENETIC'S, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND BIOTECHNIQUES)

Note : Ateempting one question from each unit will be compulsory, 100% choice be given.

UNIT-I (GENETIC'S)

1. Linkage and Linkage maps
2. Varieties of gene expression - Multiple alleles ; lithogenesis ; Pleiotropic genes; gene interaction ; epistasis.
3. Sexchromosome systems, and sex-linkage.
4. Mutation and chromosomal alterations ; meiotic consequences.
5. Human genetics - chromosomal and single gene disorders (somatic cell genetics)

UNIT-II (CELL PHYSIOLOGY)

1. General idea about pH and Buffer.
2. Transport across membrane - cell membrane; Mitochondria andEndoplasmic reticulum.
3. Active transport and its mechanism; Active transport in Mitochondria and Endoplasmic reticulum.
4. Hydrolytic enzymes - Their chemical nature, Activation and specificity.

UNIT-III (BIOCHEMISTRY)

1. Amino acids and Peptides - Basic structure and biological function.
2. Carbohydrate and its metabolism - Glycogenesis; Gluconeogenesis; glycolysis, Glycogenolysis; Cosi-cycle.
3. Lipid metabolism - Oxidation of glycerol; oxidation of fatty acid.
4. Protein metabolism - Deamination,Transamination, Transmethylation; Biosynthesis of Protein;

UNIT-IV (BIOTECHNOLOGY)

1. Biotechnology - Scope and importance.
2. Recombinant DNA and Gene cloning.
3. Cloned genes and other tools of biotechnology.
4. Applications of biotechnology in (i) Pharmaceutical industry, and (ii) Food processing industry.

UNIT-V (BIOTECHNIQUE)

Principles and techniques about the following

1. pH meter
2. Colorimeter
3. Microscopy-Light microscopes, Phase contrast and Electron microscopes.
4. Centrifugation
5. Separation of biomolecules by chromatography, and Electrophoresis
6. Histrochemical methods for determination of Protein, Lipids, and carbohydrate

PRACTICAL WORK

The Practical work in general shall be based on syllabus prescribed in theory.

The candidates will be required to show knowledge of the following :

1. Estimation of population density, Percentage frequency, Relative density.
2. Analysis of Producers and consumers in grassland.
3. Detection of gram-negative and gram-positive bacteria.
4. Blood group detection (A,B, AB & O).
6. R.B.C., W.B.C. count.
6. Blood coagulation time.
7. Preparation of Hematin crystals from blood of rat.
8. Observation of Drosophila, wild and mutant.
9. Chromatography-Paper or gel.
10. Colorimetric estimation of hemoglobin.
11. Mitosis in onion root tip.
12. Biochemical detection of Carbohydrate, Protein and Lipid.
13. Study of Permanent slides of Parasites, based on theory paper.
14. Working Principles of pH meter, Colorimeter, centrifuge and microscopes.

SCHEDULE FOR PRACTICAL EXAMINATION

Duration : 4 Hrs. **Max Marks : 50**

1.	Haematological Experiment : (R.B.Cs./W.B.Cs. Counting/Blood group detection)	08 marks
2.	Ecological Experiment : (Estimation of Population Density/Frequency/relative Density)	06 marks
3.	Staining of Gram +ve and Gram -ve Bacteria/cytological experiment : Mitosis in onion root tip	05 marks
4.	Biochemical Experiment : (biochemical detection of carbohydrate/protein lipid)	06 marks
5.	Chromatography	05 marks
6.	Spotting :	10 marks
	Study of permanent slides of Parasites : 3	
	Comments on working Principles of pH meter / Calorimeter / centrifuge and Microscope :	
7.	Viva Voce	05 marks
8.	Sessional :	05 marks

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MICRO-BIOLOGY

SCHEME OF PRACTICAL

Duration : 4 Hrs. **Max Marks : 50**

1.	Characterization and Identification of micro-organism from any given source	15
2.	Biochemical identification of some biodegraded organic molecules	10
3.	Spots (1 to 5)	10
4.	Viva voce	05
5.	Sessional	10
		Total - 50

(PRACTICAL SYLLABUS)

MOLECULAR BIOLOGY AND GENETIC ENGINEERING

Characterization of genetic markers of known bacterial strains.
Phage growth curve.
Isolation of DNA from bacteria.
Isolation of plasmid DNA and restriction analysis.
Simple cloning using plasmid DNA as vector and transformation of competent E. coli cells.
Electrophoretic analysis of proteins.
Isolation of Bacteria from air and soil (crop fields)
Isolation of Fungi from air and soil
Study of rhizospheric & Phyllospheric microbes of some economically important plants
Biodegradation study of some organic molecules
microbial assessment of potable water
Analysis of sewage waste
Analysis of Garbages (soild wastes)

REFERENCE :

Philipp Gorhardt, manual of Methods for general Bacteriology. ASM. 536pp.

PAPER-I (Paper Code-0923)

MOLECULAR BIOLOGY AND GENETIC ENGINEERING M.M.50

UNIT-I History of molecular biology, model systems, concepts of molecular biology, Early history of genetic engineering, genetic engineering concepts, ethical issue.

UNIT-II Mutation; spontaneous and induced, base pair change, fram shift, deletion, inversion, random duplication, insertion, useful phenotypes (auxotrophs, conditional lethal, resistance). Revertion vs suppression, Ame's test.

UNIT-III Function of macromolecules; early observation on the mechanism of heredity, DNA as genetic material; basic mechanism of replication, enzymes involved in replication, Enzymes involved in transcription translation, genetic code, regulation of gene expression-transcription, translation and control of gene expression in microbes.

UNIT-IV DNA repair and restriction, types of repair systems, restriction modification systems, types of restriction enzymes, properties and uses, methylation.

Biology of plasmids. Bacteriophages, lytic vs lysosogenic phages, single standard DNA phages, M 13, restriction modification systems, restriction enzymes.

UNIT-V Plasmid and phage vectors, restriction and ligation of vector and passenger DNA, transformation of host cells, selection vs. screening of recombinant colonies, analysis of recombinant clones, DNA sequencing, protein separation and identification methods.

TEXT BOOKS :

1. Essentials of Molecular Biology by GM Malacinski.
2. Genes IX by Benjamin Lewin
3. Molecular Biology by TA Brown.

PAPER - II (Paper Code-0924)

ENVIRONMENTAL AND MEDICAL MICROBIOLOGY

M.M.50

UNIT-I Aerobiology; definition, droplet nuclei, aerosol assessment of air quality, some important air borne diseases caused by bacteria (Diptheria, Peneumonia, Meningitis), virus (Influenza, Chicken pox, Measels) and fungi (mycosis); their symptoms and preventive measures.

UNIT-II Soil microbiology : Physical and chemical characteristics and micro flora of various soil types, rhizosphere, phyllosphere. Brief account of microbial interactions: symbiosis, mutualism, commensalism, competition, amensalism, synergism, parasitism, and predation.

Biofertilizers - biological nitrogen fixation, nitroginase enzyme, nif genes, symbiotic nitrogen fixation, and non-symbiotic nitrogen fixation (Azotobacter, Azospirillum), VAM-ecto-endo-ectendomycorrhizae.

UNIT-III Aquaticd microbiology; ecosystem, fresh water (ponds, lakes, stream) and marine, Water zonation : upwelling, entrophication.

Potability of water - microbial assessment of water quality.

Brief account of water borne diseases (Typhoid, Dysentery, Cholera, Hepatitis) and preventive measures.

UNIT-IV Food spoilage and food borne infections.

A brief mention about biodegradation, xenobiotics, bioaccunmulation, biopestisides and deterioration.

General concept of industrial microbiology and their applications.

UNIT-V Waste Treatment : types of wastes, characterization of solid and liquid waste, waste treatment solid saccharification, gasification, composting.

Liquid waste treatment - aerobic, anaerobic primary, secondary and tertiary methods.

Useful byproducts, mushroom, fuel, fertilizer, Biodegradation of industrial waste.

REFERENCES :

1. Food Microbiology by WC Frazier and D Westhoff.
2. Agricultural Microbiology by Bhagyaraj and Rangaswamy.
3. Bioremediation by KH Baker and DS Herson.
4. Scott's Diagnostic Microbiology by EJ Baron.

PRACTICAL FOR B.SC. PART III

(MICROBIOLOGY)

Characterization of genetic markers of known bacterial strain

Isolation of DNA from bacteria

Isolation of plasmid DNA

Simple cloning using plasmid DNA as vector and transformation of competent E. coli

Electrophoresis of protein / DNA.

Isolation of microorginsms from air, soil and water.

Isolation of pathogenic microorganisms.

Study of rhizospheric and phyllowpheric microbes from economically important plants.

Biodegradation of some organic molecules.

Microbial assessment of potable water.

Analysis of sewage waste, solid waste (garbage).

Isolation of aquatic fungi (zoosporic) by baiting technique.

Isolation of keratinophilic fungi soil by baiting technique

Demonstration of beacterial antagonism.

Microscopic observation of root colonization by VAM fungi.

SCHEME FOR PRACTICAL EXAMINATION

Time : 4 hors **M.M. : 50**

1.	Characterization and identification of microorganism from given source/ Isolation of plasmid DNA/Genomic DNA	15
2.	Biochemical identification of some biodegraded organic molecules/ Microbial assessment of potable water/BOD/COD	10
3.	Spotting (1-5)	10
4.	Viva-Voce	05
5.	Sessional	10
	Total	**150**

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विषय-भू-विज्ञान

सैद्धांतिक प्रश्न पत्र- प्रथम

पूर्णांक-50

(पेपर कोड-0905)

इकाई-1
1. खनिज उपलब्धता के नियामक तथ्य । वैश्विक खनिज नियम एवं संसाधन ।
2. दिक्काल में खनिज निक्षेपों का वितरण, पारम्परिक एवं गैर पारम्परिक ऊर्जा संसाधन : सूर्य-आतप, जल, वायु, उष्ण झरने, समुद्र तरंगे ।
3. अयस्क निर्माणकारी खनिज : धात्विक एवं अधात्विक । अयस्क निर्माण की मैग्मीय सांद्रगण विधि ।
4. उष्ण जलीय-प्रक्रियायें, स्कार्न ।
5. उपक्षय उत्पाद एवं अवशिष्ट निक्षेप । आक्सीकरण एवं सल्फाइड समृद्धि प्रक्रम ।

इकाई-2
1. अयस्क निर्माण की अवसादी प्रक्रिया ।
2. प्रतिस्थापन एवं जीवाश्विक अवक्षेपण, कोलायडल निक्षेपण । लवणीजल का वाष्पोत्सर्जन ।
3. अयस्क निर्माण की कायान्तरणी प्रक्रिया ।
4. भू-वैज्ञानिक कालों में वैश्विक विर्तनिकी एवं धानुनिर्मिती ।
5. भू-वैज्ञानिक वितरण, खनिजकीय विशेषता तथा भारत में निम्न धातु निक्षेपों का वितरण लौह-मैगनींज-क्रोमियम

इकाई-3
1. भू-वैज्ञानिक वितरण-खनिजकीय विशेषता एवं भारत में निम्न धातु निक्षेपों का वितरण : ताम्र-सीसा-जस्ता।
2. भू-वैज्ञानिक वितरण- खनिजकीय विशेषता एवं भारत में निम्न धातु निक्षेपों का वितरण: सोना-अल्युमिनियम।
3. भू-वैज्ञानिक वितरण- खनिजकीय विशेषता एवं भारत में निम्न अधातु निक्षेपों का वितरण : तापसह एवं उर्वरक खनिज ।
4. भू-वैज्ञानिक वितरण- खनिजकीय विशेषता एवं भारत में निम्न अधातु निक्षेपों का वितरण : सीमेंट एवं केमिकल उद्योग में प्रयुक्त खनिज एवं वास्तुप्रास्तर ।
5. भू-वैज्ञानिक वितरण- खनिजकीय विशेषता एवं भारत में निम्न अधातु निक्षेपों का वितरण : रत्न ।

इकाई-4
1. धातु सांद्रण की प्रमुख विधियाँ : ताम्र एवं मैग्नींज ।
2. खनिज दोहन के पर्यावरणीय प्रभाव ।
3. कोयला निक्षेपों की उत्पत्ति, परिभाषा एवं संस्तर विज्ञान ।
4. कोल-शैलिकी के मूलभूत तथ्य ।पीट, लिग्नाइट, विटूमिनस, एंथ्रासाइट ।
5. भारतीय कोयला निक्षेप : विशेष संदर्भ में छत्तीसगढ़ ।

इकाई-5
1. प्राकृतिक हाइड्रोकार्बन की उत्पत्ति, स्थानांतरण एवं स्थानबद्धता, स्त्रोत एवं संचयकारी
2. आयलट्रेप के प्रकार-संरचनात्मक, स्तरविज्ञानी एवं मिश्रित ।
3. भारत के तटीय एवं अपतटीय पेट्रोलियम निक्षेप ।
4. रेडियोधर्मी खनिज : खनिजकीय, भू-रसायन, पूर्वेक्षण तकनीक ।
5. भारत वर्ष में रेडियोधर्मी खनिज का वितरण ।

विषय-भू-विज्ञान

सैद्धांतिक प्रश्न पत्र-द्वितीय

(पेपर कोड-0906)

(प्राकृतिक पर्यावरण, दूर-संवेदन, भू-जल एवं खनिज-अन्वेषण) **पूर्णांक-50**

इकाई-1
1. पर्यावरण भू-विज्ञान की अवधारणायें एवं परिभाषा ।

2. मृदानिर्माण–मृदा प्रकार ।
3. पृथ्वी की प्राकृतिक–पारिस्थितिकी तंत्र की अवधारणायें : उनकी अंतर्क्रियाएं एवं अर्न्तसम्बन्ध ।
4. प्राकृतिक पर्यावरण पर मानव का पर्यावरण ।
5. नदी मार्ग का अंतरण : मार्ग अंतरण का मृदा अपरदन पर प्रभाव : भूस्खलन एवं बाढ़ ।

इकाई–2

1. वृहत्त बांध, जलाशय, सुरंगें आदि के निर्माण में स्थल चयन एवं पर्यावरणीय प्रभावों का अध्ययन ।
2. हवाई–छायाचित्रों एवं उपग्रह इमेजियरी का प्रारंभिक अध्ययन ।
3. शहरी विकास एवं वृहद्अभियांत्रिकी संरचनाओं की आयोजना में दूर–संवेदन तकनीकों का अनुप्रयोग ।
4. फोटो जियोलॉजिकल मानचित्रों का निर्माण ।
5. जल चक्र ।

इकाई–3 भूजलसंचयी शैल

1. शैल एवं उनका वर्गीकरण
2. जलमृतशैलों का वर्गीकरण : डार्सि का नियम एवं उसकी उपयुक्ता ।
3. भारत का भूजल–प्रदेश ।
4. जलग्रहण प्रबंधन की अवधारणायें
5. सतही एवं अधो सतही निष्कर्षण विधियाँ ।

इकाई–4

1. आर्थिक खनिजों के लिये पूर्वेक्षण विधियाँ : ड्रीलिंग, प्रतिनयन एवं आमापन
2. खनिज पूर्वेक्षण की गुरूत्वी, विद्युतीय एवं चुम्बकीय विधियाँ ।
3. पूर्वेक्षण की हवाई एवं भूकम्पीय विधियाँ ।
4. पूर्वेक्षण की भू–पादपीय विधियाँ ।
5. पूर्वेक्षण की भू–रासायनिक विधियाँ ।

इकाई–5

1. बोरहोललागिंग एवं विचलन सांख्यिकी ।
2. खनिज खपत का परिवर्तनशील स्वरूप ।
3. राष्ट्रीय खनिज नीति ।
4. खनिज–कन्शेसन–नियम ।
5. समुद्री खनिज संसाधन एवं तत्संबंधित नियम ।

प्रायोगिक प्रश्न पत्र

अधिकतम अंक–50

प्रयोगशाला कार्य–35 अंक **क्षेत्रीय अध्ययन–15 अंक**

1. अयस्क निर्माणकारी खनिजों के भौतिक एवं प्रकाशीय गुणों का अध्ययन ।
2. भारत के मानचित्र में अयस्क निक्षेप एवं आर्थिक महत्व को खनिजों का वितरण ।
3. कोयला एवं उसके विभिन्न प्रकारों के नमूनों का स्थूलदर्शी अध्ययन ।
4. रेडियोधर्मी खनिज एवं उनके आतिथेय शैलों का स्थूलदर्शी अध्ययन ।
5. खनिज निष्कर्षण से संबंधित प्रयोगशाला अभ्यास कार्य, निक्षेप आंकलन, टनेज फेक्टर आंकलन, ड्रिलिंग आदि से संबंधित ।
6. स्टिरियोस्कोप के द्वारा ऐरियल छाया चित्रों का अध्ययन एवं विवेचना ।
7. उपग्रह इमेजियरी का अध्ययन एवं विवेचना ।

भू-वैज्ञानिक-क्षेत्रीय अध्ययन :

15 दिवसीय भू-वैज्ञानिक क्षेत्रीय अध्ययन कार्य, जिसमें संरचनात्मक दृष्टि से जटिल क्षेत्रों में भू-वैज्ञानिक मानचित्र एवं शैल नमूनों का संग्रहण तथा प्रयोगशाला कार्य एवं फील्ड रिपोर्ट का अनुलेखन ।

BOOK RECOMMENDED FOR PAPER-I

Evans, A.M. 1993. - Ore Geology and Indusrial Minerals

Sawkins, F.J. 1984 - Metal Deposits in relation in plate Tecto. Springer.

Stanton, R.L. 1972 - Ore Petrology. Mcgraw Hill

Mookherjee A. 2000 - Ore Geniois - a helistic Approach Allied Publisher

Chandra 2000 - Text book of coal (Indian context) Tara book Agency, Varanashi

Selley, R.C.1998 - Elements of Petroleum Geology. Academic Press

Torling D.H. 1981 - Economic Geology and Geofectericks Blackwell

Melustry, H.E. 1962 - Mining Geology 2nd Ed., Asia Pub. House

Arogya Swamy, RPN 1996 - Gourses in rining Geology IV Ed. Oxford IBH

Dahl Kamp F.J. 1993 - Uranium Ore Deposits Springer

BOOK RECOMMENDED FOR PAPER-II

Valdiya K.S. 1987 Environmental Geology-Tata MacgrawHill

Keller, E.A. 1978 - Environmental Geology-Bell & Hewell

Subramanium V. 2001 - Textbook in Environmental Science, Narosa International

Bell, F.G. 1999 - Geological Hazards, Routledge, London

Drury, S.A. 1987 - Image Interpretation in Geology

Siegal, B.S. and Gillespie A.R.1980- Remote Sensing in Geology, John Wiley

Pandey, S.N. - Principles and Application of Photology. Wiley Eastern, New Delhi

Todd. D.K. 1980 - Groundwater Hydrology, John Wiley

Raghunath, N.M. 1982 - Ground Water, Wiley Eastern

Karanth, K.R. 1987 - Groundwater Assessment Development and Management,

- Tata Macgraw Hill

Subramanium, V.2000 - Water, KingstonPubl. London

Sharma P.V. 1986 - Geophysical Methods in Geology Mcgraw Hill

Krynine, D.H. & Juddwr 1998 - Principles of Engineering G. CBS Edition

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STATISTICS

PAPER-I

(Paper Code-0907)

APPLIED STATISTICS

UNIT-I Indian Applied Statistical System : Present official statistical system in India, Methods of collection of official statistics, their reliability and limitations, and the principal publications containing such statistics on the topics- population agriculture, industry, trade, price, labour and employment, transport and communications, banking and finance. (15L)

UNIT-II Demographic Methods : Sources of demographic data - census, register, adhoc survey, hospital records, demographic profiles of Indian census. Measurement of mortality and life tables- crude, death rates, infant mortality rates, death date by cause, standardized death rate, complete life table - its main features, mortality rate and probability of dying, use of survival tables. Measurement of fertility - crude birth rate, general fertility rate, total fertility rate, gross reproduction rate, net reproduction rate. (25L)

UNIT-III Economic Statistics : Index number - its definition, applications of index numbers. price relatives and quantity or volume relatives, link and chain relatives, problems involved in computation of index numbers, use of averages, simple aggregative and weighted average methods, Laspeyre's, Paasche's and Fisher's index numbers, time and factor reversal tests of index numbers. Consumer Price Index. (20L)

UNIT-IV Static laws of demand and supply, price elasticity of demand, analysis of income and allied size distribution - Pareto distribution, graphical test, fitting of Pareto's law, log normal distribution and its properties, Lorenz curve and estimation of elasticity from time series data. Gini's coefficient.

UNIT-V Time Series Analysis : Economic time series, its different components, Illustrations, additive and multiplicative models, determination of trend, growth curves, analysis of seasonal fluctuations construction of seasonal indices. (15L)

REFERENCES :

1. Croxton F.E. and Cowden D.J. (1969) : Applied General Statistics, Prentice Hall of India.
2. Goon, A.M., Gupta, M.K., Das gupta, B (1986) : Fundamentals of statistics, vol.-II, World Press, Calcutta.
3. Guide to Current Indian Offical Statistics : Central Statistical Organization, Govt. of India, New Delhi.
4. Saluja M.P. ( ) Indian Official statistical Systems, Statistical Publishing Society, Calcutta.
5. Srivastava, O.S. (1983) : A textbook of Demography, Vikas Publishing.

ADDITIONAL REFERENCES :

1. Gupta and Mukhopadhyay P.P. ( ) Aplied Statistics, Central Book Agency.
2. Pressat R. (1978) : Statistical Demography, Methuen and Co. Ltd.

PAPER-II

(Paper Code-0908)

STATISTICAL QUALITY CONTROL AND COMPUTATIONAL TECHNIQUES

UNIT-I Importance of statistical methods in industrial research and practice, specification of items and lot qualities corresponding to visual gauging, count and measurements, types of inspection, determination of tolerance limits. General theory of control charts, causes of variation in quality, control limits, sub-grouping, summary of out-ot control criteria, charts for attributes, np chart, p - chatr, c- chart, u- chart, Charts for variables- X- and R charts, design of X and R charts versus p-charts, process capability studies. (30L)

UNIT-II Principle of acceptance sampling- problem of lot acceptance, stipulation of good and bad lots, producer's and consumers risks, single and double sampling plans, their OC functions, concepts of AQL, LTPD, AOQL, average amount of inspection and ASN function, rectifying inspection plans, Sampling inspection plans, Indian Standards Tables Part-I (including applications), IS 2500 Part I. (15L)

UNIT-III Computational techniques : Difference tables and methods of inferpolation, Newton's and Lagrange's methods of interpolation, Divided differences, numerical differentiation and integration, Trapezoidal rule, Simpson's one-third formula, iterative solution of non-linear equations. (15L)

UNIT-IV Linear Programming : Elementary theory of convex sets, definition of general linear programming problems (LPP), formulation problems of LPP, examples of LPP, Problems occurring in various fields, graphical and Simplex method of solving an LPP, artificial variables, duality of LPP. Transportation Problem (non-degenerate and balanced cases only), Assignment Problem. (30L)

UNIT-V Four short notes, one from each unit. Student have to answer any two.

REFERENCES :

1. Brownless K.A. (1960) : Statistical theory and Methodology in Science and Engineering. John Wiley and Sons.
2. Grant E.L. (1964) : Statistical Quality Control, McGraw Hill.
3. Duncan A.J. (1974) : Quality Control and Industrial Statistics, Traporewala and Sons.
4. Gass S.I. (1975) : Linear Programming Methods and Applications, McGraw Hill.
5. Rajaraman, V. (1981) : Computer Oriented Numerical Methods, Prentice Hall.
6. Sastry S.S. (1987) : Introductory Methods of Numerical Analysis, Prentice Hall.
7. Taha H.A. (1989) : Operations Research : An Introduction, Macmillan Publishing Company.

ADDITIONAL REFERENCES :

1. Bowker H.A. and Liberman G.T. (1962) : Engineering Statistics, Prentice Hall.
2. Cowden D.J. (1960) : Statistical Methods in Quality Control, Asia Publishing Society.
3. Garvin W.W. (1960) : Introduction to Linear Programming, McGraw Hill.
4. Mahajan M. (2001) : Statistical Quality Control, Dhanpat Rai & Co. (P) Ltd.
5. Rao S.S. (1984) : Optimization Theory and Applications, Wiley Eastern.

6. Krishnamurthy E.V. and Sen S.K. (1976) : Computer Based Numerical Algorithms, Affiliated East-West Press.

PRACTICAL

1. Computing measures of mortality & fertility, Construction of life tables and examples involving use of life tables, Graduation of mortality rates by Gompertz curve, fitting of a logistic curve.
2. Construction of Index Numbers by Laspeyre's, Paasche's, Fisher's method.
3. Determination of trend in a time series, construction of seasonal indices.
4. Fitting of Pareto curve to income data, Lorenz curve of concentration, Estimation of price elasticity of demand form time series data.
5. Drawing of X-R, np, p and c- charts. Drawing of OC curve for single and double sampling plans for attributes, AOQ and ATI curves.
6. Construction of difference tables, use of Newton's Lagrange's methods of interpolation and divided difference formulae, numerical evaluation of integrals using Trapezoidal and Simpson's one-third formulae, solution of non-linear equation by Newton-Raphson iterative method.
7. Formulation of LPP's and their duals. Solving LPPs by graphical and simplex methods, transportation and assignment problems.

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DEFENCE STUDIES

PAPER-I

PROBLEMS OF WAR AND PEACE (Paper Code-0921)

Aim : The objective of this paper is to acquaint the students about the multidimensional problems of war and peace and humanitarian laws.

Note : Question will be set from each unit, there will be only internal choice.

Unit-I U.N.O. AND WORLD PEACE

1. Organs and its role.
2. Main specialized agencies of U.N.O.
3. Role of U.N.O. in world peace.
4. Peace keeping forces of the U.N.O.
5. Veto power and Security Council.

Unit-II WAR AND PEACE

1. Sattlement of International Disputes.
2. Diplomatic agents and Consuls.
3. War Crimes.
4. Neutrality.
5. Intervention.

Unit-III HUMANITARIAN LAW

1. Basic concepts and development of Humanitarian law.
2. UN General Assembly declaration of human rights on Dec. 10, 1948.
3. Protection of Victims and defenceless in armed conflict, POWs, wounded and civilians in Armed Forces.
4. Central Human Right Commission : Organisation and Function.
5. State Human Right Commission : Organisation and Function.

Unit-IV REFUGEE LAW

1. Meaning, Concept and causes of Refugee.
2. Refugee and IDPs.
3. Refugee law in India.
4. Refugee Problem in South Asia.
5. Role of International Committee of Red Cross and UNO in Refugee Problems.

Unit-V LAWS OF WAR

1. Law of Land war.
2. Law of Sea war.
3. Law of Air war.
4. Space law.
5. The International Court of Justice.

SELECTED READINGS :

1. Maunce clark, J : Readings in the Economics of War.
2. International Security : Modern political Science series.
3. Rajani Kothari : Word order.
4. Openhem, I : Use of Forces by states and International law.

PAPER - II

MODERN WARFARE

(Paper Code-922)

Aim : To enable students to appreciate the impact of Political, economic and technological developments on the patterns of conflicts between nations.

Note : Question will be set from each unit, there will be only internal choice.

UNIT-I
1. Development of Nuclear weapons.
2. Effects of Nuclear Explosion.
3. Spread of Nuclear Weapons.
4. Missile and their characteristics.
5. Type of Missiles.

UNIT-II
1. Trends in Science and Technology and their impact on war.
2. Role of Research and Development.
3. Development of Weapons and their impat on tactics
4. Command, Control, Communication and Intelligence (C^3I) in Modern Warfare.
5. Elements of National Power.

UNIT-III
1. Military Satellites.
2. Explosive Bombs.
3. War Gases.
4. Micro Organs : as a weapons.
5. Smart Weapons.

UNIT-IV
1. Rocket Technology and India.
2. Missile Technology and India.
3. Nuclear Technology and India.
4. Atomic Minerals and India.
5. Space Technology and India.

UNIT-V
1. New word order - Political, Social and Economical.
2. Alliance and Regional co-operation.
3. Mobilisation of resources for war.
4. War time economics.
5. New trends.

SELECTED READINGS :

1.	Halailan Morton	:	Coutemporary Military strategy
2.	Brodue, Y.	:	Strategy in the Missile Age.
3.	Markabi, Y.	:	Nuclear war and Nuclear peace
4.	Osanka. F.M.	:	Modern Guerilla warfare
5.	Gerald. J.	:	Defence Psychology
6.	Know Kalus	:	Science and Defence
7.	Pandey Girishkant	:	Yudh mein vigyan aven Tachniki.

PRACTICALS

50 marks

There shall be practical examination of 3.5 hours duration carrying.

The division of marks shall be as follows :

(1)	Plain Table Survey	:	15 Marks.
(2)	Experimental Military Psychology	:	15 Marks.
(3)	Group Descussion & Lectring :		05 Marks.
(4)	Viva-Voce :		05 Marks
(5)	Sessional work & Record	:	10 Marks.

Section - A

Plain table Survey by inter section methods. (Atleast ten exercises in a session).

Section - B

Military - Psychology Experiment :

(1) Muller-Layer-IIlusion test.

(2) Koh's Block Design Test.

(3) Allexander Pass Along Test.

Section - C

Group Discussion and Lectures based on current topic on any international & national Problems.

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INDUSTRIAL CHEMISTRY

PAPER - I

(Paper Code-0925)

CHEMICAL PROCESS ECONOMICS — M.M. 34

UNIT-I
1. Factors involved in project cost estimation, methods employed for the estimation of capital investment. 06L
2. Capital formation, elements of cost accounting. 05L

UNIT-II
1. Interest & investment cost, time value of money equivalence. 03L
2. Depreciation, method of determining depreciation, taxes. 04L
3. Some aspects of marketing, pricing policy. 04L

UNIT-III
1. Profitability criteria, economics of selecting alternatives. 03L
2. Variation of costs with capacity, Break-even point, optimum batch sizes, Production, schedulling etc. 05L
3. Sampling of Bulk materials, techniques of sampling of solids, liquids and gasses. 03L
4. Collection & Processing data. 02L
5. Particle size determination. 02L
6. Rheological properties of liquids, plastics and their analysis. 03L

INDUSTRIAL ORGANIZATION

UNIT-IV
1. Concept of scientific management in industry. 04L
2. Functions of management, decision making, planning, organising. directing & control. 09L
3. Location of industry. 03L

UNIT-V
1. Materials management. 05L
2. Inventory control. 04L
3. Management of human resources-selection, incentives, welfare & safety. 05L

BOOKS :

1. Economics of Chemical industry, Hempel, E.H.
2. Plant Design & Economics for Chemical Engineers, Peter Time Rhaus, McGraw Hill.
3. I.C.M.A. Booklets-9 & 10.
4. Industrial Organization & Management, Bethel, L.L.
5. Industrial Organization & Management, Tarachand, Vol. I & II.
6. Book on Management, O.P. Khandelwal.
7. Rheology theory & application, Vol. 5, Elrich, R.F.

PAPER - II

(Paper Code-0926)

PHARMACEUTICALS — M.M. 33

UNIT-I
1. Historical Background & development of pharmaceutical industry in India in brief. 02L
2. Pharmacopoeias - Development of Indian pharmacopoeia & introduction ot B.P., U.S.P., E.P., N.F. & other Important Pharmacopoeias. 02L

3. Introduction to various types of formulations & roots of administration. 02L
4. Aseptic conditions, need for sterilisation, various methods of sterilisation. 02L

UNIT-II 1. Various types of pharmaceutical excipients their chemistry, process of manufacture & quality, specifications Glidants, lubricants, diluants, preservatives, antioxidants, emulsifying agents, coating agents, binders, coloring agents, flavouring agents geletin & other additives, sorbotol, mannitol, viscosity builders etc. 12L
2. Surgical dressing, sutures, ligatures with respect to the process, equipments used for manufacture, method of sterlilization and quality control. 05L

UNIT-III 1. Pharmaceutical packaging introduction, package selection, packaging materials, ancillary materials, packaging machinery, quality control of packaging materials. 05L
2. F.D.A., Important schedules & some legal aspects of drugs. 03L
3. Pharmceutical quality control (other than the analytical methods covered under core-subject) - sterility testing, pyrogenic testing, glass testing, bulk density of powders, etc. 06L

UNIT-IV 1. Evaluation of crude drugs-Moisture content, extractive value, volatile oil content, foreign organic matter, quantitative microscopic exercises, including starch, leaf content, (palisade ratio, stomatal number & index vein, islet number & vein termination number), crude fiber content, introduction to chromatographic method of dentification of crude drugs. 06L
2. Chromatography, Paper chromatography, TLC, HPLC, GLC. 04L
3. Ion chromatography. 01L

INSTRUMENTATION

UNIT-V 1. UV-Visible spectroscopy. 03L
2. IR-Spectroscopy non-dispersive IR. 03L
3. NMR Spectroscopy. 03L
4. Atomic Absorption & Flame photometry. 03L
5. Neutron diffraction. 01L
6. X-Ray Fluorescence. 01L
7. Ion Selective Electrodes. 01L

BOOKS :

1. Instumental methods of analysis, Willard, Merit, Dean.
2. Introduction to instrumental methods of analysis, Braun, R.D., McGraw Hill.
3. Analytical chemistry, J.B. Dick, McGraw Hill.
4. Quantitative Inorganic analysis, A. Vogel.
5. Instrumental methods of Analysis, Skoog & West.
6. Instrumental Methods of Analysis, B.K. Sharma.

PAPER -III

(Paper Code-0927)

DRUGS **M.M. 33**

UNIT-I 1. Phyto-chemicals-Introduction to plant classification & crude drugs, cultivation, collection, preparations for the market & storage of medicinal plants.

2. Classification of various types of drugs with examples.
3. Raw meterials, process of manufacture, effluent handling, etc. of the following bulk drugs :-
   - Sulpha drugs-sulphaguandine, sulphamethoxazole.

UNIT-II 1. Chemical constitution of plants including carbohydrates, amino acids, proteins, fats, waxes, volatile oils, terpenoids, steroids, saponins flavonoids, tanins, glycosides, alkaloids.
2. Various isolation procedures for active ingredients with examples for alkaloids, reserpine one for steroids sapogenin, diosgenin, diogron.

UNIT-III 1. Antimicrobial :- Chloramphenicol, Furazolidne, Mercurochrome, Isoniazid, Na-PAS.
2. Analgesic-AntiInflammatory :- Salicylic acid and its derivatives, Ibuprofen, Mefenamic acid.
3. Steroidal Harmones :- Progesterone, Testosterone, Methyl testosterne.

UNIT-IV 1. Vitamins :- Vit.-A, Vit.-B6, Vit.-C.
2. Barbiturates :- Pentobarbital.
3. Blockers :- Propranolol, Atenolol.
4. Cardiovascular Agent :- Methyl dopa.
5. Antihistamins :- Chloropheneramine Maleate.

UNIT-V 1. Products based of fermentation processes :- Brief idea of micro-organisma, their structure, growth & usefulness. Enzyme systems useful for transformation, microbial products.
2. General principles of fermentation processes & product processing.
3. Manufacture of antibiotics - Pencillin-G & semi synthetic pencillines, Rifamycin, Vitamin-B12.
4. Bio-transformation process for prednisolone, 11-hydroxylation in steroids.
5. Enzyme catalysed transformation, manufacture of ephidrine.

BOOKS :-

1. Practical Pharmacognosy, T.B. Wllis.
2. Practical Pharmacognosy, T.N. Vasudevan.
3. Modern Pharmacognosy, Remstad, McGraw Hill.
4. Indian Pharmacopoea, 1985.
5. British Pharmacopoea, 1990.
6. Hand Book of Drugs & Cosmetic Act, Mehrotra.
7. Pharmaceutical excipients.
8. Pharmaceutical Dosage forms.
9. Principles of Medicinal Chemistry, W.O. Foye, Lea & Febigen, Publication Phidelphia.
10. Text Book of Organic Medicinal & Pharmaceutical Chemistry, Willson, Gisvold, Derge; Lippinett-Toppan.
11. Essentials of Medicinal Chemistry, Korolkovas & Burkhatter, Wiely Interscience.

PRACTICAL

Marks : 50

The Practical examination will be of 08 Hrs. Duration spread over two days carrying 50 Marks.

Two experiments have to be performed.

1. Synthesis of common industrial compounds involving two step reactions. 4-Bromoaniline, 3-Nitroaniline, Sulphanilamide, 4-Aminoben zoic acid, 4-Nitroben zoic acid, dihalobenzenes, Nitrohal obenzenes.
2. Industial analysis of common raw meterials as per industrial specification :- Phenol, Aniline, Formaldehyde, Hydrogen per Oxide, Acetone, Epoxide, Olefins, Oils etc.
3. Demonstration of various pharmaceutical packaging materials, quality control tests of some materials,-Al Strips, Cartons, Glass bottles.
4. Limit tests for chlorine, heavy metals, arsenic, etc. of two representative bulk drugs.
5. Demonstration of various pharmaceutical products.
6. Active Ingradient analysis of few types of formulations representing different methodsof analysis-acidimetry, alkalimetry, non-aqueous.
7. Determination of sulphate ash, loss of drying & other tests of bulk drugs, complete I.P. monograph of three drugs representing variety of testing methods.
8. Evaluation of crude drugs-macroscopic examination-determination & identification of starch grannules, calcium oxalate.
9. Palisate ratio, stomatal index-determination & Identification of few drugs. Tlc method for identification.
10. Microbiological testing-determination of mic of some aNtibacterial drugs by zone/cup plate method.

DISTRIBUTION OF MARKS :

1.	Experiment No. 1.	20
2.	Experiment No. 2.	10
3.	Viva	05
4.	Sessional 05	
5.	Project Work	10
	Total	**50**

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COMPUTTER SCIENCE

PAPER - I

(Paper Code-0909)

COMPUTER HARDWARE PART-C

AIM : The emphasis is on the design concepts & organisational details of the common PC, leaving the complicated Electronics of the system to the computer engineers.

Objective of the Course :

1. To introduce the overall organisation of the microcomputers and operating systems.
2. To introduce the interaction of common devices used with computers with operating softwares, excluding the Assembly languages, with special reference to DOS/WINDOWS.
3. To introduce the working of hardware components, Micro-Processor and various chips used in micro-computers by operating system, without the use of electronic circuitry.
4. To introduce the use of operating systems architecture with IBM-PC & clones, excluding Assembly language, with forms an important part of hardwares.

N.B. : Since the computer organisation study is very vast & complicated, so the study is restricted only to the description and understanding part, hence the paper-setter is requested to keep this important factor in mind.

UNIT-1 : ORGANISATION OF Micro-Processor & MIRCO-COMPUTER :-

1. Introduction & organisation of Micro-Computer :

(a) Basic Components of Micro-computer : Basic Block; Prom ram memory; Data memory; I/O Ports; Clock generator; Integration of functional blocks.

(b) Interconnecting Components in a Micro-computer : Necessary functional block; Bussed architecture for microcomputer; memory addressing; Addressing I/O ports; comparision of I/O mapped and memory mapped I/O.

(c) Input Output Techniques : Non-CPU devices, Program & interrupt controlled I/O; Hardware controlled I/O or DMA.

2. An Introduction to the various as :

(a) General understanding of different μP or CPU :
Intel 8088, 286, 386, 486, 586 Pentium, P54C, MMX P55C; Motorola 6800 & 88100 series; CYRIX & AMD CPUs.

(b) The Registers of CPU : (Give Example of P-8088) Register organisation of 8088, Scrach pad segment, pointer, Index and Flag, Registers.

(c) Memory addressing modes of P-8088 : Segment offset; Data addressing modes; Addressing for branch instructions.

(d) I/O Addressing with P-8088 : Memory mapped I/O & I/O mapped I/O.

UNIT-2 : SYSTEM HARDWARE ORGANISATION OF COMPUTERS :

1. Hardware Organisation of the Personal Computer :

(a) Block diagram with various parts of PC.

(b) The Mother Board of General P.C. : 8088 CPU; ROM & RAM; Keyboard

& its interface; System timer/counters; Hardware interrupt vectoring; DMA controller & channels; Interfacing to audio speaker; Bus slots & facture cards.

(c) The Serial I/O ports, COM-1 & COM-2.

(d) The parallel Port for Printer.

(e) Expansion Slots for RAM.

(f) Disk Controllers : For floppy, Hard disk, CD-ROM & Cassets drives.

2. The Video Display of PCs :

(a) Video Monitors; Monochrome and colour.

(b) Video Display Adapters & Their Video Modes; Monochrome & colour graphics adapters.

(c) Video Control Through ANSI-SYS.

(d) Video Control Through ROM-BOIS : INT 10H.

(e) Direct Video Control; Monochrom & colour graphics adapters.

(f) Installing Customized Character Sets.

UNIT-3 : ORGANISATION OF OPERTING SYSTEM WITH SYSTEM HARDWARE :

1. The ROM-BIOS Services :

(a) Introduction to UNIX, ENIX, SUN, solaris, DOS & MAC with special reference to DOS & Windows, its ver., as DOS becomes more popular than others in PCs.

(b) The ROM-BIOS Diskette Services, INT 13H.

(c) The ROM-BIOS Serial Port Services, INT 14H.

(d) The ROM-BIOS Keyboard Services, INT 16H.

(e) The ROM-BIOS Printer Services, INT 17H.

(f) Miscellaneous Service Provided by the ROM-BIOS : INT 05H, INT 11H, INT 12H, INT 18H, INT 19H, INT 1AH.

2. The fundamental of Operating System viz. DOS/WINDOWS :

(a) The loading of DOS & Its Basic Structure ; ROM bootstrap, IO.SYS, DOS.SYS & Command..COM.

(b) The Execution of the programs under DOS ; EXEC functions, program segment prefix; Features of COM & EXE program files.

(c) Device Handling by Dos ; FDD, HDD, CON, Keyboard, PRN, AUX, CLOCK and NUL devices; Block devices; Character devices; Driver installation sequence.

(d) File Structures of DOS ;

(e) The DOS Interrupts : INT 20H-2FH

(f) The DOS functions through INT 21H; Discuss only the understanding part of various other DOS function to handle hard & softwares.

(g) Installation of windows : Important system files in windows.

UNIT-4 : ORGANIZATION & HANDLING BY OPERATING SYSTEMS :

1. Disk and Files under DOS :

(a) Logical Structure of a Disk : Organisation of disk for use; Boot record ; FAT

files; disk or root directory.

(b) File Organisation on a DOS disk : Logical volumes ; Sub directories; Volume lables.

(c) Manipulating Files under DOS : File attributes ; date and time, file Access; FCB functions.

2. Memory Allocation, Program Loading and Execution :

(a) Memory Management under DOS : EXEC loader; Memory Management & its functions; Modifying a Program's memory allocation.

(b) Loading and Executing Programs under DOS : The EXEC function ; Memory considerations; parameter blocks; calling & returning from EXEC.

(c) Loading the program overlays through EXEC.

UNIT-5 : ORGANISATION OF HARDWARE BY OPERATING SYSTEM :

1. Interrupt Handling through DOS :

(a) Types of interrupts.

(b) Interrupt Vector Table in PC.

(c) Interrupt Service Routines.

(d) Special Interrupts in PC : Clock Interrupt; The -C or Break Interrupt ; DOS reserved interupt INT 28H ; Patching memory resident routines.

2. Filters for DOS :

(a) Filters in operating systems.

(b) Redirection of I/O under DOS.

(c) The Filters Supplied with DOS.

(d) Writing Filters to run under DOS.

3. Handling of Various Versions of Windows O.S. :

(a) Setup Installation

(b) Trouble shooting

(c) Networking features

Text Book :

1. Hardware and Software of Personal Computers.
   By Sanjay K. Bose. (Wiley Eastern Ltd. New Delhi).

Supporting Text Books :

1. Digital System from Gates to Mircoprocessor.
   By Sanjay K. Bose. (Wiley Eastern Ltd. New Delhi).
2. Computer Fundamentals : Architecture & Organisation.
   By B. Ram.. (Wiley Eastern Ltd. New Delhi).

Reference Books :

1. IBM PC-XT and Clones : By Govinda Rajalu.
2. Microprocessor and interfacing : By Douglas Hall.
3. Insight the IBM-PC : Peter Norton.
4. Micriprocessor System : 8086/8088 family architecture, programming & design : By Liu and Gibson.

PAPER - II

(Paper Code-0910)

Atm : To introduce DBMS and RDBMS using Back-end tool and Front-end tool.

Object of the Course :

1. To introduce Data BAse Management System concepts.
2. To introduce the Relational Database Management System and Relational Database Design.
3. To introduce the RDBMS software and utility of query language.
4. To introduce basic concept of GUI Programming and database connectivity using Visual Basic.

UNIT-1 : CONCEPT OF D.B.M.S. AND DATA MODELS

(a) Introduction to DBMS :- Purpose of Data base systems, views of data, Data Modeling Database Languages, Transaction management, Storage Management, Database Administrator and User, Database System Structure.

(b) E-R Model : Basic concepts, Constraints, Keys, Mapping Constaint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-R Schema to Table.

UNIT-2. : RELATIONAL DATABASE MANAGEMENT SYSTEM

(a) Relational Model : Structure of Relational Database, Relational Algebra, Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views.

(b) Relational Database Design : Pitfalls in Relational Database Desing, Decomposition Functional Dependencies, Normalization : 1NF, 2NF, BCNF, 3NF, 4NF, 5NF.

UNIT-3 : INTRODUCTION TO RDBMS SOFTWARE - ORACLE

(a) Introduction : Introduction to personal and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL*PLUS.

(b) DDL and DML : Creating Table, Specifying 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.

(c) Security : Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.

(d) 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/SQL, Triggers in PL/SQL.

UNIT-4 : G.U.I. PROGRAMMING

(a) Introduction to Visual Basic : Event Driven Programming, IDE, Introduction to Object, Controlling Objects, Models and Events, Working with Forms, MDI Form Working with standard Controls.

(b) Overview of Variables, Declaring, Scope, Arrays, User defined data types, Constants, Working with procedures : Function, Subroutine, and Property.

Working with Data, Time, Format, String, and Math's Function. Controlling Program Execution: Comparison and Logical Operators, If...Then statements, Select Case Statement, Looping Structures, Exiting a loop. Error Trapping and Debugging.

(c) File Organization : Saving data to file, Sequential and Random access file, the desing and coding.

UNIT-5 : V DATA BASE PROGRAMMING IN VB

(a) Introduction :- Concept of DAO, RDO, ADO, input validation : field & form level validation, ADO object model : the ADO object Hierarchy, the connection object, the command object, record set object, parameter object, field object, record object, stream object, Error object, parameter object.

(b) Using Bound control to Present ADO data : Using the ADO data control, ADO data control properties, binding simple controls : Data list, data combo, Data Grid, Data Form Wizard : single form wizard, Grid form, master/Detail form. Programming the ADO data control : Refresh method, Event, Hierarchical flex Grid control.

(c) Data Environment & Data Report : Creating connection, Using command object in the data Environment, Data Environment option and operation, Binding Form to the data Environment, ADO Events in the Data report, Print Preview, Print, Export, Data report in code : Data reports Events, Binding data reports Directly.

REFERENCE BOOKS :

1. Data Base System Concept : By Hery F. Korth, Tata McGraw Hill
2. Fundamental of Data Base System Concept : Nawathe & Elmasri (Pearson educations)
3. Oracle Complete Reference : By Oracle Press
4. Introduction to OOPS & VB : By V.K. Jain, Vikas Publishing House
5. Database Programming VB 6 : By B.P.B. Publication

PRACTICALS :

1. Practicals on Oracle :

At least 20 practicals covering the SQL, PL/SQL, Triggers, Views.

2. Practicals on Visual Basic :

At least 20 pracricals on VB that covering basic and data controls components.

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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. Berkhauson criteria for sustained oscillator. RF oscillators-Hartley oscillatot, Colpetts oscillators (Qualitative study) relaxation osillators, 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 driff, impout offset, common mode rejection ratio, slew rate, universal biasing technique, Application of OP-Amp, as inverting, non-inverting amplifiers, differentiation, Integratior, scal charger and voltage follower, Silicon controlled rectifier (SCR), Diac, Traic and UJT (Only qualitative study).

UNIT-IV **THE INTEL 8080/8085 MICROPROCESSOR :** Introcution, 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 poeration, Instructions set logical operations, instruction set data transfer operations, instruction set branch operations, instructuion 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.

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 & Horowith

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 date 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.

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INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	Agriculture and Food Microbiology	3 hrs.	50
Second	Fermentation Technology & Government Regulations	3 hrs.	50
	PRACTICAL Examination (including sessionals)	4 hrs.	(20+5) 25
	Viva-Voce Exam. based on "Summer Job-Training Report"		25

PAPER-I

(Paper Code-0930)

AGRICULTURE AND FOOD MICROBIOLOGY M.M. : 50

UNIT-I Soil fertility and management of agricultural soils. Influence of available nitrogen on soil-fertility. Importance of crop-rotation. Soil management. Management practices : Pesticides and their impact and effect on soil fertility.

UNIT-II Microbial diseases of crop plants with special reference to Wheat, Rice, Maize, Groundnut, Mustard, Grapes, Potato and Papaya.

UNIT-III Control of plant diseases. Chemical control of plant diseases. Biological Control- its mechanism and importance. Biopesticides. Concept of integrated pest management (IPM). Bacterial insecticides.

UNIT-IV Food spoilage mechanism, Spoilage of stored products, fruits and vegetables. Microbial spoilage of milk and meat. Food borne diseases.

UNIT-V Food preservation methods - Asepsis, Pasteurisation canning, dessication, low temperature, Anaerobiosis, filteration.

Chemical preservation of food - salt and sugar, organic acids. Use of SO_2, ethylene and propylene oxides, wood smoke.

PRACTICALS

1. Study of microbial diseases of crop plants.
2. Study of effect of fungicides and insecticides on microorganisms.
3. Study of antagonistic activities amongst microorganisms.
4. Study of fungal contaminants from stored agricultural products.
5. Study of food spoilage microorganisms from sweets and bakery products.
6. Study of effect of the preservatives on the growth of microorganisms.
7. Study of UV radiations on microorganisms.
8. Study of the effect of agrochemicals on soil inhabiting microorganisms.

RECOMMENDED BOOKS :

1. Modern Plant Pathology by Bilgramy and Dubey.
2. Food Microbiology by Frazier.
3. Microbiology by S.S. Purohit.
4. Microbiology by P.D. Sharma.
5. Agricultural Microbiology by Rangaswami.
6. Plant Pathology by R.S. Mehrotra.

PAPER-II

(Paper Code-0931)

FERMENTATION TECHNOLOGY AND GOVERNMENT REGULATIONS

M.M. : 50

UNIT-I Fermentation equipments and production process. Principal types of fermenters - The batch fermenters, continuous stirred tank fermenters, Tubular fermenter, The fluidised bed fermenter, Solid State fermenters. Computer control of fermentation process. Strain improvement process.

UNIT-II Industrial production of organic acids - Lactic and citric acid.

Enzymes - amylase, protease and amino acids - L-lysine and glutamic acid.

UNIT-III Production of alcohol, wine, beer and acetic acid.

Production of antibiotics - Penicillin and Streptomycine.

Industrial production of vitamins - Vitamin B12 and Riboflavin.

UNIT-IV Importance of microorganisms in dairy industries. Production of cheese, Butter milk; and in bakery industries - leavening of bread, Indian fermented foods.

Fungi and bacteria as a source of single cell proteins (SCP) and proteins.

UNIT-V Role of international organisation in biotechnology. Government programmes for biotechnology development. Government regulations of recombinant DNA research. Hazardous industrial wastes, Mycotoxin hazards in the production of fungal products. Regulations for disposal of biohazardous materials. Patenting of the products in Industries.

PRACTICALS

1. Measurement of production of citric acid by Aspergillus niger.
2. Measurement and production of alcohol by yeast.
3. Demonstration of Transformation of steroids.
4. Demonstration of IAA production by microbes.
5. Demonstration of enzyme production by microorganisms.
   (a) Amylase (b) Cellulase
6. Demonstration of mushroom cultivation.

RECOMMENDED BOOKS :

1. Industrial Microbiology by L.E. Casida.
2. Fermentation Technology by Whittakar.
3. General Microbiology, Vol. II, by Powar and Daginawala.
4. Molecular Biology and Biotechnology by H.D. Kumar.
5. Elements of Biotechnology by P.K. Gupta.

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ELECTRONICS

		Max.M.	Min.M
Paper-I	Power Electronics, Microprocessors and IT Fundamental's	50	33
Paper-II	Communication Systems	50	
Paper-III	Practicals and Project	50	17

PAPER - I

(Paper Code-0911)

POWER ELECTRONICS, MICROPROCESSORS AND IT FUNDAMENTAL'S

UNIT-I Comparative study of semiconductor power Devices : Power Diodes, Power Transistors, Unijunction Transistor, Silicon controlled Rectifier, Diac and Triac.

Structural Description and working of Unijunction Transistor (UJT), Characteristic curve, Use of a UJT as a Relaxation oscillator.

Description and working of a DIAC, Characteristic curve.

Description and working of a Triac, Characteristic curve, Triac as a switch.

Silicon controlled Rectifier : Description of the structure and idea of doping profiles of different layers, Two Transistor model analysis of SCR, Voltage current Characteristics, Forward and Reverse Blocking states; Triggering mechanisms and methods of turn on, turn off mechanism.

UNIT-II 8085 up Instruction Sets and Programing of 8085 microprocessor : Logic 8 bit Instructions of 8085 Data Transfer (copy) Instructions, MOV,

Arithmatic Instructions (ADD, ADI, SUB, SUI, INR, DCR), Logic operations : ANA, ANI, ORA, ORI, XRA, XRI, Branch Operations : Unconditional and Conditional Jump Instruction, Rotate Operations : RLC, RAL, RRC, RAR, 16 Bit Arithmatic and Logical operations.

Use of Instruction set to make following programs.

(i) Data Block Transfer.

(ii) To Arrange a Series in Assending and Decending Order.

(iii) Largest Number Finding.

(iv) To Carry out simple arithmatic operations : Addition, Division Multiplication, Subtraction.

UNIT-III Programmable Interface Devices : Internal Architecture and pin out diagram of the 8155/8156 and 8355/8755 Multipurpose Programmable Devices, The 8279 Programable kayboard/display interface.

Interfacing Data Converters : Digital to Analog (D/A) converter, Analog to Digital (A/D) converter.

UNIT-IV Information Technology :

Information theory - Introduction information in communication system, measurement of information, the binary digit (bit).

Data sets and their connection requirements, Modem : Classification, modes of modem operation, modem interconnection, modem data transmission speed.

Internet basics : Basic information about Http, WWW, HTML, shell and TCP/IP account, Browsers - Netscape and Internet explorer, e-mail.

UNIT-V Communication Technology :

LAN, WAN and MAN, wireless network, Internetwork, network topology, OSI and TCP/IP reference models, comparision between them and their criticism. Details about Physical layer : magnetic media, twisted pair (UTP and STP), coaxial cable, fiber-optic cable Basic idea about ISDN.

REFERENCES :

1. Power Electronics : M.H. Rashid Prentice Hall of India, New Delhi.
2. Microprocessor Architecture Program and Applications : R.S. Gaonkar Penram Publication, Mumbai.
3. Computer Network : A.S. Tanebaum, Second Edition Prentice Hall of India Pvt. Ltd.
4. Introduction to Microprocessors : A.P. Godse, VTU Publishers, Pune.
5. Power Electronics : Alok Jain Penram Publishers, Mumbai.
6. Microprocessors & Interfacing : Douglas V. Hall Tata Mcgraw Hill.

PAPER - II

(Paper Code-0912)

COMMUNICATION SYSTEMS

UNIT-I Analysis of passive filters (low pass, band pass and high pass), elementary idea of active filters-Butterworth and Cbevyshev response) Noise : Thermal noise, shot noise, Partition noise, low fequency and transit time noise, Generation and recombination noise, equivalent noise resistance, signal to noise ratio, noise factor, noise temperature.

UNIT-II Modulation : Principle of modulation, wave spectra and effect of filtering an complex wave : Amplitude modulation; frequency spectrum of AM, average power average voltage, modulation index for multiple sine waves, linear and square modulators, collector modulator, balance modulator, single side band (SSB) generation/method, diode detector, advantages and disadvantages of SSB over DSB AM : SSB detection, Transmitters and Receivers : Superheterodyne receiver, AM Transmitters.

UNIT-III Angle Modulation : Elements of frequency and phase modulation frequency spectrum of FM waves, inter system comparisions (FM and AM); Generation of FM, direct and indirect methods; Angle - Modulator circuits, varactor diode and FET modulators; Foster Seelay discriminator and ratio detector.

UNIT-IV Pulse Modulation : Pulse Modulation, pulse transmission, pulse amplitude modulation, time division multiplexing, pulse time modulation, pulse width and pulse position modulation, digital filtering, pulse code modulation; Block diagrams of PCM transmission and receiving circuits.

UNIT-V Television engineering : Scanning process, characteristics of human eye, aspect ratio, persistence of vision and flicker, resolution and video bandwidth, interlaced scanning, blanking, synchronizing and equalizing pulses, Vestigial side band signal, standard channel characterstics, TV camera tubes Image orthicon and vidicon; Block diagram of TV transmitter and receiver.

Three colour system, luminance and chrominance signal, colour TV camera, Shadow mask, Trinitron and in line colour picure tubes.

REFERENCES :

1. Electronic Communication Systems : George Kennedy, Tata Mcgraw Hill.
2. Principles of Communication Systems : Taub & Schilling TMH
3. Communication Systmems : Simon Haykin, Mcgraw Hill.
4. Monochrome & Color Television : R.L. Gulati, New Age International, New Delhi.

PAPER - III

PRACTICALS AND PROJECT

A student is required to do atleast 12 experiments and a project work in the academic year.

The scheme of practical examination will be as follows :

1. One experiment and Working and Demonstration of Project works - 5 :

	Marks	
Experiment	-	20
Viva	-	05
Project work & Viva	-	15 (10+5)
Sessional	-	10
Total	**-**	**50**

1. Study of SCR characterstics.
2. Study of Diac and Triac characteristics.
3. Study of UJT Characterstics.
4. Study of UJT as a relaxation oscillator.
5. Study of AM generation and detection.
6. Radio Receiver measurments.
7. Study of low pass, band pass and high pass filters.
8. Study of FM using voltage controlled oscillators.
9. Study of DC choppers.
10. Study of Pulse code modulation.
11. Study of electronic ragulation of D.C. & A.C. Motors.
12. Any four experiments on microprocessors.

NOTE : Other experiments of equal standard may also be set.

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ANTHROPOLOGY

PAPER-I

(Paper Code-0919)

"FUNDAMENTALS OF HUMAN GENETICS & HUMAN GROWTH"

AIM- The aim of this paper is to introduce the students the basics of Human Genetics and Human Growth.

UNIT-I Human Genetics : History, aims and scope. and its application to human society Cell division : Mitosis and Meiosis. Mendelism, Chromosomes ; Normal and Abnormal chromosomes. Genes, concept of DNA & RNA. Types of Inheritance : autosomal, (Dominant and Recessive). Sex linked Inheritance.

UNIT-II Concept of Race. Formation of Racial groups. Criteria for racial classification. Racial elements in India. Major stocks of the world and their broad sub divisions.

UNIT-III Types of twins and their importance in genetic investigation. Inheritance of ABO Blood groups, P.T.C., Colour blindness and dermatoglyphics. Genetic councelling, Eugenics. Population Genetics.

UNIT-IV Definition and scope of Human growth. Methods of studying human growth and Development. Ageing, Nutritional requirement for normal growth. Common nutritional disorder (Protein, Fat, Carbohydrates, Mineral, Vitamin).

UNIT-V Ecology : definition and scope. Varieties of human ecosytems. Environmental Population. Definition, nature and scope of biological demography. Demographic Profiles : Fertility, Mortality, Morbidity.

RECOMMENDED READINGS :

1. Agrawal S.N. : India Population Problems
2. Bogue : Principles of Demography
3. Bresler : Human Ecology
4. Gran and Shamir : Methods of Research in Human Growth
5. Harri.II. : Biochemical Genetics Man
6. Harrison. A.E. (editor) : Human Biology
7. Phyllis and Home, P.S. : Basic nutrition in health & disease
8. Race, R.R. & Sanger R. : Blood Group in Man
9. Stern C. : Principles of Human Genetics
10. Tanner, J.M. : Human Growth
11. Theodarson : Studies in Human Ecology
12. Walson and Lowry : Growth and Development of Children
13. Winchester A.W. : Principal of Genetics
14. रघुवंशी अरूण एवं चन्द्रलेखा : पर्यावरण प्रदूषण
15. Sinnot, Dunn & Dozansky : Principles of Genetics

PAPER-II

(Paper Code-0920)

THEORIES IN SOCIAL CULTURAL ANTHROPOLOGY

AIM : The main aim of this course is to introduce the student about the basic pricinciples and Theories of Social cultural Anthropology to-provide preliminary understatnding of various theoretical models evolved by Social and Cultural Anthropology.

UNIT-I The contributions made by the following Anthropologists to Social-Cultural Anthropology. (I) E.Durkheim, (II) F. Boas, (III) R. Redcfield, (IV) A. L. Kroeber, (V) S.C. Dube, (VI) M.N. Shrinivas, (VII) L.P. Vidyarthi.

UNIT-II Evolution: Biological and cultural Evolutionism; classical Evolutionism; E.B. Tylor, L.H. Morgan.

Neo - Evolutionism; jLeslie white, Gordon childe.

Culture traits, Culture Complex, Culture Area, Culture focus.

Diffusion of Culture : British diffusionist : Genrman - Austrian diffusionist (Kuttre kriese American diffusionist (Culture Area).

UNIT-III Function and structure: Functionalism (Malinowski) and Structure Functionalism (Redcliffe Brown) Structuralism (Levi strauss).

UNIT-IV Personality : Basic personality and Model personality.

Culture pattern : Configurationalism (Ruth Benedict). Anthropological study of National character.

UNIT-V Feild work tradition in Anthropology Major tools of Research: Schedule, Questionaire, Participant observation, interview, case study, Geneological Method. The main bases of Anthropological Methods: Historical Method, Comparative Method and Functional Method.

PAPER-III

PRACTICAL

Obejctive : The main of this practical coures is to introduce the student about the tools and Method, analysis & statistical methods used in Human Biology. Laboratory Procedures in blood grouping and dermatoglyphics would give confidence in Dealing with all the applied dimensions they process.

PART-I : Somatometry :

(a) Measurements on body :

(i) Height vertex, (ii) Height tragus, (iii) Suprasternale height, (iv) Biacromial Breadth, (v) Bi-illioncristal breadth, (vi) Tibial Height, (vii) Upper extremity Length, (viii) Sitting height, (ix) height dactylion, (x) Body weight.

(b) Head and Face Measurement :

(i) Morphological upper facial length.

(ii) Physiognomic upper facial length.

(iii) Morphological facial length.

(iv) Bizygomalic breadth.

(v) Max head length

(vi) Max head breadth

(vii) Nasal length

(viii) Nasal breadth

(c) Indices :

(i) Cephalic Index

(ii) Nasal Index

(iii) Facial Index

PART-II Genetic Traits :

ABO blood group ; colour blindness, PTC taste sensitivity, Dermatioglyphics, Methods of taking finger and palm prints and their analysis.

PART-III Statistics

Mean, Median, Standard deviation, X^2 test.

BOOKS RECOMMENDED :

1. Basin M.K. and I.P. Singh : Anthropometry
2. Cummins H. and Midlo C. : An Introduction of Dermatoglyphics
3. Dunsford and Bowley : Blood Group Techniques
4. Fisher R.S. : Statistical methods for Research Workers
5. मित्रा, मिताश्री : प्रायोगिक मानव विज्ञान भाग-2
6. Olivia : Practical Anthropology

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ELECTRONICS EQUIPMENT MAINTENANCE

		Max. Marks	Min. pass Marks
Paper - I	Trouble shooting and maintenance of audio and video Equipments.	50	17
	Practical	50	17
	Project	50	17

PAPER-I

(Paper Code - 0913)

TROUBLE SHOOTING AND MAINTENANCE OF AUDIO AND VIDEO EQUIPEMENTS

UNIT-I **REMOTE CONTROL AND SPECIAL CIRCUITS :**

Remote control, electromechanical control system, electronic touch tuning frequency synthesiser, TV tuner, automatic fone tuning (AFT), booster emplifier, automatic brightness control, instantious circuitry, picture tube boosters.

ALIGNMENT AND SERVICING EQUIPMENTS :

Antistatics and low leakage multimeters, soldering Iron, Vacuum tube voltmeter (VT VM) Cathode Ray Oscillouscope (CRO) single Generation Video pattern Generator Coulor IIur Generation Vector Scope, High voltage probe Cable connectors shielding and Graunding.

UNIT-II **TELEVISION :**

Trouble shooting procedure, troubles shooting monochrome receivers, servicing of various functional blocks, trouble, shooting colour receivers, servicing circuit modeles, saprets precautions in television servicing.

TELEVISION CAMERA TUBES :

Basic principles and maintenance recording.

UNIT-III **BLOCK DIGRAM OF VCR :**

Requirement of VCR, retaining video drums, helical scan, guard band, frequency response, serva systems, tape tension regulatar, real servo, system control.

Different formats, the quacruplex format, type B segmented format, type C formet, the U matic format, the 1/2" V.H.S. format, 3-Max system.

UNIT-IV **SINGAL PROCESSING, CHROME PROCESSING :**

Colour under technique, recovery of down converted chrome signals, luminance processing. frequency modulation, deviation and band width, autometic gain correction, limited, pre-enphasis, replay of luminance signal, Y/C delay, drop out compensator, block diagram of main requirements, zero guard band system, turners and modulators, the modulator.

Servo mechanisms and system control :

Recording, playback, tracking, capstan servo system control, loading and tereading and play mode, record mode, auto stops, counter, audio video muting.

UNIT-V **CARE OF MECHANICAL SYSTEM :**

Cleaning of head and tape path. Lubrication, replacement of parts, replacement of audio CTC head, replacement of video drum, dihedral error, table height, tape tension. drive toungue stop brenks.

ELECTRONIC SYSTEM ALUGNMENTS :

Instruments, fault finding the power supply, free funning speed the servo system, tracking, video system, playback section alignment, amplifier balance and gain, luminance signal adjustment, D.O.C., F.M. demodulator, limited balance, carrier leak, noise canceller, colour processing, up conversion automatic colour correction, autometic face connection recording, luminance, synctip or clamping frequency, deviation set, white clip, chrominance, summary.

NEW TECHNOLOGIES :

Industrial aspects of consumer electronics, jigs and fixture, quality control/ management, production techniques, business cycle new technologies, compact disc, laser disc.

PAPER - II

(Paper Code - 0914)

PRACTICAL

A student is required to do atleast 2 experiments in an acadmic year, and one month summer Training. The scheme of practical examination will be as follows :

(1) On experiment of 3 hours duration and one month summer Training.

(2) The marks for summer training will be awarded by the teachers teaching the students on the basis of the certificate issued by the external supervisor of the summer training.

Marks

Experiment	25 Marks
Sessional	10 Marks
on month summer training	15 Marks
Total	**50 Marsk**

Orientation and connection to TV antenna. Knowledge of booster connection and replacement. Knowledge of bloon Unit - different types (for different TV sets) and replacement of ballon, Replacement of front end.

Power supply and resistance cold tests. Voltage measurement at different points. To build SMPS for voltage between 6-15 volts (using IC's).

Horizantal and vertical oscilator checking and testing using CRO.

To see and read circuit diagram and to identity (Locate) various block on p/s, H and V deflection, video amplifier, audio, section, chroma section, IF section, tuner, tube and direction yokes (connecting and adjustment).

Audio section wave form testing step by step-sound separator, sound take off from IF section and tenonwards to detector amplifier, IF alignment and loud speaker. (intercarrier sound take off).

If stage testing : IF alignment, tunner and band select.

Chroma processor : testing singals at various IC's.

Remote control studies-range, direction various, controls, IR transmitter and receiver, coding of signal.

Fault finding : cold testing and voltage testing of various parts. (Revision of parts 1 to 9).

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BIOTECHNOLOGY

PAPER - I

GENERAL BIOTECHNOLOGY

Plant, Environment and Industrial Biotechnology

Time : 3 Hrs **MM-50**

UNIT-I Plant cell and tissue culture : General introduction history, scope.
Application of tissue culture
Concept of cellular differentiation.
Agro bacterium. Ti and Ri plasmid.
Bt gene. Molecular marker (RFLP, RAPD), edible vaccines.

UNIT-II Organogenesis, Embryogenesis. Protoplast isolation and fusion.
Germplasm storage and Cryopreservation.
Anther and Ovary culture.

UNIT-III General introduction and scope of environmental biotechnology.
Environmental pollution and its type.
Control of pollution through biotechnology,
Wastewater treatment :- Physical, Chemical, and Biological.

UNIT-IV Biofertilizer, Biopesticides, IPR.
Global environmental problem- General introduction, Ozone depletion. Acid rain.
Green house effect.

UNIT-V Bioreactors and its type.
Fermentation (Lactic acid, alcohol).
Maintenance of Industrial microorganisms.
Food technology- introduction, canning. packing and food preservation.

PAPER - II

IMMUNOLOGY

Time : 3 Hrs **MM-50**

UNIT-I Immunology - General Concept, history and Development.
Immune system and immunity, Organization of Immune system.
Antigen - Antibody and its type.

UNIT-II Cell involved in immune system. Type and cells. Basic structure and function. Cytokines.
Cell mediated immunity Interferons. Hypersensitivity.

UNIT-III Antigen - antibody interaction. Principles and types.
Immunohaematology - General concept. Blood group system. Rh factor. medical application of blood groups.

UNIT-IV Origin and diversity in immune system.

Effectors mechanisms.

Immunity of infection diseases monoclonal Antibodies.

UNIT-V Autoimmune diseases. Hemolytic anemia. Rheumatoid arthritis. Insulin dependent diabetes. Myasthenia gravis. Organ transplantation. Immunodeficient diseases. Cancers. AIDS.

PRACTICAL

EXPERIMENTS

Plant :

1. Sterilization of plant materials.
2. Preparation of Tissue culture media.
3. Plant tissue culture by plant parts.

Environment :

1. Determination of total dissolved solids of water.
2. Determination of DO, BOD, COD of water.
3. MPN Test.

Industrial :

1. Food preservation techniques.
2. Application of biopesticieds on microorganisms
3 Production of Citric acid by microorganisms.

Immunology :

1. Blood grouping in relation to Antigen Antibody interaction.
2. Rh factor determination.
3. Widal Test
4. VDRL Test.
5. Double diffusion experiment
6. ELISA Test

BIOTECHNOLOGY

Time : 4 HRS **MM-50**

Scheme	**Marks**
1. Experiment based on Paper - I	
(i) Plant tissue culture	08
(ii) Environment / Industrial	07

2.	Experiment based on Paper - II	15
3.	Spots 05 (based on paper I & II, at least two spots from each paper)	10
4.	Viva-voce	05
5.	Sessional	05
	Total	**50**

BOOKS -

1. A test Book of Biotechnology : Indu Shekher Thakur - I.K. International Pvt. Ltd., New Delhi.
2. Biotechnology (Fundamentals and Applications) : S.S. Purohit - Agrobios (India), Jodhpur.
3. Fundamentals of Microbiology and Immunology : Ajit Kr. Banerjee, Nirmalya Banerjee - New central Book Agency (P) Ltd., Kolkata.
4. Plant Biotechnology : R.S. Chawla - Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
5. Plant Biotechnology : B.D. Singh - Kalyani Publication, New Delhi.
6. Biotechnology : Fundamental & Appliction : S.S. Purohit
7. Immunology : J. Kubey et al.
8. Immunology : Roitt et al.
9. Fundamental of Immunology : W. Paul.
10. Plant Tissue culture : Rojdov
11. Plant Tissue Culture (Practical) : H.S. Chawla.

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BIOCHEMISTRY

PAPER - I

MOLECULAR BIOLOGY

UNIT-I BASIC CONCEPTS OF GENETIC INFORMATION

a. Nucleic acids as genetic information carriers, experimental evidence e.g. bacterial genetic transformation, Hershey - Chase Experiment, TMV reconstitution rexperiment.

b. Central dogma of molecular genetics - current version, reverse transcription and retroviruses.

c. Primary structure of nucleic acids and their properties, silent features of eukaryotic, prokaryotic and viral genome; highly repetitive, moderately repretitive and unique DNA sequences.

d. Basic concepts about the secondary structures of nucleic acids, 5' 3' direction antiparallel strands, base composition, base equivalence, bae pairing and base stacking in DNA molecule. and buoyant density and their.

UNIT-II STRUCTURAL LAVELS OF NUCLEIC ACIDS AND SEQUENCING

a. Scondary and tertiary structure of DNA : Watson and Crick model, A.B. and Z types of DNA major and minor grooves, chirality of DNA, tertiary structure of DNA.

b. Structure and properties of RNA; Classes of RNA secondary and tertiary structures.

c. Nucleic acid hybridization : Cot $T_m^{\rightarrow}$ value and satellite DNA.

d. Sequencing : Restriction and modification system; sequencing of DNA and RNA.

UNIT-III a. DNA REPLICATION

DNA replication in prokaryotes - conservative, semi conservative and dispersive types, experimental evidence for semi conservative replication. DNA polymerases, other enzymes and protein factors involved in replication. Mechanism of replication. Inhibitors of DNA replication.

b. TRANSCRIPTION

Transcription in prokaryotes RNA polymerase, promoters, initiation, elongation and termination of RNA synthesis, inhibitors of transcription. Reverse transcriptase, post transcriptional processing of RNA in eukaryotes.

UNIT-IV TRANSLATION AND REGULATION OF GENE EXPRESSION

a. Genetic code : Basic feature of genetic code, biological significance of degeneracy. Wobble hypothesis, gene within genes and overlapping genes.

b. Mechanism of translation : Ribosome tructure, A and P sites, charged tRNA, f-mat-tRNA initiator codon, Shine Dalgarno consensus sequence (AGGA), formation of 70S initiation complex, role of EF-Tu, EF-Ts, EF G and GTP, nonsense codons and release factors RF 1 and RF 2.

c. Regulation of gene Expression in prokaryotes : Enzyme induction and repression,

operon concepts, Lac operon, Trp operon.

UNIT-V MUTATION AND REPAIR

a. Mutation : Molecular basis of mutation, types of mutation, e.g. transition, transversion frame shift, insertion, deletion, suppresser sensitive, germinal and somatic, backward and forward mutations, true reversion and suppresion, dominant and recessive mutation, spontaneous and induced mutations = Ledergerg's replica plating experiment.

b. Mutagenecity testing : Correlation of mutagenecity and carcinogenicity : Ames testing, Random and site directed mutagenesis.

c. DNA Rapair : UV repair system in E.Coli, Significance of thymine in DNA.

RECOMBINATION AND TECHNOLOGY

Restriction endonucleases, brief discussion of steps in DNA cloning. Application of recombinant DNA technology.

Books :

1. Biochemistry J David Rawn, Neil Patterson Publisher, North Carolina.
2. Molecular biology of the gene JD Watson, NH Hopkins, JW Robert, JP Stretz, AM Weiner, Freeman San Francisco.
3. Fundamental of biochemistry by D Voet and CW Pratt, John Wiley & Sons, NY.
4. Text book of biochemistry Thomas M Devin, John Weley & Sons, NY.

PAPER - II

NUTRITIONAL, CLINICAL & ENVIRONMENTAL BIOCHEMISTRY

M.M.-50

UNIT-I NUTRITIONAL BIOCHEMISTRY

Nutrition and dietary habits

a. Introduction and definition of foods and nutritiori. Factors determining food acceptance, physiological, energy, body building (growth and development).

Regulation of body temperature. Physiology and nutrition of carbohydrates, fats, proteins and water. Vitamins A,D,E,K, Vit B-Complex and Vit C and minerals like Ca, Fe and Iodine and their biological functions. Basic food groups : energy giving foods, body building foods and protective foods.

b. Composition of balanced diet, recommended dietary allowances (RDA) for average indian, locally available foods, inexpensive quality foods and food stuff's rich in mor ethan one nutrients. Balanced vegetarian diet, emphasis on nutritional adequacy.

UNIT-II NUTRITATINE AND CALORIFIC VALUES OF FOODS

a. Basic concepts of energy expenditure, units of energy, measurement of energy expenditure by direct or indirect calorimetry, calculation of non protein RQ with respect to carbohydrates and lipids. Determination of heat production of the diet. The basal metabolism and method of measuring basal metabolic rate (BMR),

energy requirements during growth, pregnancy, lactation and various physiological activities. Calculation of energy expenditure of average man and women.

b. Specific dynamic action (SDA) of foods, naturitive value of various kinds of foods generally used by Indian population. Planning of dietary regimes for infants, during pregnancy and old age. Malnutrition, its implications and relationship with dietary habits and prevention of malnutrition pecially protein-calories malnutrition (Kwashiorkor and Marasmus) by improvements of diets. Human milk and its virtues, breast vs formulated milk feeding. Food preservation standards, food adulterations and precautions, government regulations on poreservation and quality of food.

UNIT-III CLINICAL BIOCHEMISTRY

i. Basic concepts of clinical biochemistry

a. Definition and scope of clinical biochemistry in diagnosis, a brief review of units and abbreviation used in expression concentration and standard solutions. Quality control. Manual vs automation in clinical laboratory.

b. Collection and preservation of biological fluids (blood, serum, plasma, urine and CSF) Chemical analysis of blood, urine and CSF. Normal values for important constitutes (in SI units) in blood (plasma / serum), CSF and urine, clearance tast for urea.

UNIT-IV (i) CLINICAL ENZYMOLOGY

a. Definition of functional and non- functional plasma enzymes. Isozymes and diagnostics Tests. Enzymes pattern in health and diseases with special mention of plasma lipase, amylase, cholinesterase, alkaline and acid phosphatase, SGOT, SGPT, LDH and CPK.

b. Functional tests of kidney, liver and gastric fluids.

(ii) Hypo and hyper-gylcemia, glycogen storage diseases, lipid mal-absorption and steatorrhea, sphingolipidosis, role of lipoproteins. Inborn errors of amino acid metabolism alkaptonuria, phenyl-ketonuria, albinism, gout and hyper-uricemia.

UNIT-V ENVIRONMENTAL BIOCHEMISTRY

(i) **Air pollution :** Particulate matter, compounds of carbon, sulphur, nitrogen and their interactions, methods of their estimation, their effect on atmosphere.

(ii) **Water pollution :** Types of water boides and their general characteristic, major pollutants in domestic, agricultural and industrial wastes, methods of their estimation, effects of pollutants on plants and animals, treatment of domestic and industrial wastes, solid-wastes and their treatment.

Books :

1. Modern nutrition in health and diseaser by Whol and Goodhart.
2. Human nutrition and Dietetics-S. Davidson and passmore-ELBS Zurich.
3. Tietz fundamental of clinical Chemistry by Cart A Burits & ER Ashwood Saunders WB Co.
4. Leacture Notes on Clinical Biochemistry-LG Whitby, AF Smith, GJ Beckett.

PRACTICAL FOR IIIrd YEAR

LABORATORY - III (BCH 305)

1. Estimation of DNA by diphenylamine method.
2. Effect of temperature on the viscosity of DNA using Ostwald's Viscometer.
3. Extraction of RNA and its estimation by Orcinol method.
4. Estimation of hemoglobin by measuring total iron in blood.
5. Estimation of calcium and phosphorus in serum & urine.
6. Estimation of creatine and creatinine in urine.
7. Estimation of immunoglobulins by precipitation with saturated ammonium sulphate.
8. Denaturation fo enzyme, studies on DNA.
9. a. Separation of proteins by column chromatography.
   b. Determination of proteins by dye binding assay.
10. Separation of proteins by SDS-polyacrylamide gel electrophoresis.

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बिलासपुर विश्वविद्यालय, बिलासपुर (छत्तीसगढ़)

SEMESTER SYLLABUS

M.A. ENGLISH

SCHEME OF EXAMINATION & DISTRIBUTION OF MARKS

SEMESTER - I

Paper No.	Title of the Paper (s)	Internal Assessment	Term End Exam	Total Marks
1.	Poetry -I (From Chaucer To Blake)	20	80	100
2.	Drama -I	20	80	100
3.	Prose	20	80	100
4.	Fiction	20	80	100

SEMESTER - II

Paper No.	Title of the Paper (s)	Internal Assessment	Term End Exam	Total Marks
1.	Poetry -II			
2.	Drama- II			
3.	Modern Literature (Poetry and Prose)			
4.	Fiction And Short Stories			

SEMESTER - III

Paper No.	Title of the Paper (s)			
1.	Critical Theory			
2.	Indian Literature			
3.	American Literature			
4.	Optional (Any one) 1. English Literature 2. Linguistics			

SEMESTER - IV

Paper No.	Title of the Paper (s)			
1.	Literature and Translation			
2.	Diaspora and Dalit Literature			
3.	World Literature			
4.	Optional (Any one) 1. Colonial and Post Colonial Literature 2. Critical Studies			

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SEMESTER SYLLABUS

M.A. ENGLISH

SEMESTER-I
PAPER– I
POETRY
(FROM CHAUCER TO BLAKE)

UNIT - I

Annotations from the detailed text six (6) to be asked three (3) to be attempted.

[illegible]

UNIT - II 09

Chaucer: The Prologue to Canterbury Tales (D)

John Milton: Paradise List Book I

[illegible] Rape of the Lock

[illegible]

[illegible] Elegy [illegible] the Country Church Yard, Progress of Poesy

[illegible] Blake: Songs of Innocence, Songs of Experience.

[illegible]

[illegible] 116

[illegible] Forbidden Mourning (D)

[illegible]

[illegible] two sections, Section [illegible]

[illegible]

[illegible] each of one mark

[illegible] questions each of two marks

[illegible] answer type questions from [illegible]

[illegible] 50% internal choice.

[illegible] comprise of annotations from the [illegible]

[illegible] passages for annotations [illegible]

[illegible]

1. [illegible] Hugh Walker
2. [illegible] Literature of Eighteenth Century – Bananey Doluce
3. [illegible] 17[th] Century Reader – B. Rajan
4. [illegible] Milton – C.M. Bowra
5. A Glossary of Literary Terms – Abrams.

SEMESTER I
PAPER – II
DRAMA

UNIT – I

Annotations from the detailed text six (6) to be asked (3) three to be Attempted.

UNIT – II

Marlowe – Dr. Faustus (D)
Shakespeare – Macbeth

UNIT – III

Shakespeare – Tempest (D)
Shakespeare – Twelfth Night

UNIT – IV

John Milton – Samson Agonistis
Ben Johnson – Every Man in his Human

UNIT – V

John Webster – Duchess of Malfi (D)
W. Congreve – Way of the World

NOTE:

1. The Question Paper will comprise of two sections Section A and Section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to V of equal marks (12 for each questions) with 50% internal choice.
5. The first questions of section B will comprise of annotations from the detailed text (D) mentioned in syllabus. 6 Passages for annotations to be asked and 3 to be attempted

Recommended Books:

1. Shakespeare's Historical Plays – S.C. Sengupta
2. History of English Drama – Hudson
3. Shakespearean tragedy – A.C. Bradely
4. Theory of Drama – Nicoll
5. The Essential Shakespeare – G. Wilson Knight
6. A Glossary of Literary teims – M.H Abrams

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SEMESTER SYLLABUS

M.A. ENGLISH

SEMESTER I

PAPER – III

PROSE

UNIT – I

Annotations from the detailed text six (6) to be asked (3) three to be attempted

UNIT – II

Francis Bacon – Of youth & age, Of Ambition of Death. (D) John Milton – Aewpagitica Areopagi

UNIT – III

James Boswell – Life of Samuel Johnson

Joseph Addison – Coverley papers, Sir Roger at church. (D)

The Spectators account of himself. (D)

UNIT – IV

Thomas Carlyle – The Hero as a Poet

Charles Lamb – 1. Bachelor's complaint on the Behavior of Married people. (D)

2. Christ Hospital (D)

UNIT – V

R.L. Stevenson 1. El Dorado

2. Walking Tours

Hazlitt 1. [illegible] and Acting

2. [illegible] Journey

NOTE:

1. [illegible] Section A and Section B.
2. [illegible] entire units/ contents of the paper. The [illegible]
3. [illegible] each of two marks.
4. [illegible] questions from unit II to V of equal marks [illegible] internal choice.
5. [illegible] of annotations from the detailed text (D) [illegible] annotations to be asked and 3 be attempted [illegible]

Recommended Books:

1. [illegible] The [illegible] book 6 Essay 1991.
2. [illegible] 6 Essay 1969.
3. English Prose Anthology of English Essays, Short Stories Delhi OUP 1988.
4. Bacon's Essays, Sekanta Chowdhary
5. A Glossary of Literary Terms - M.H Abrams

SEMESTER I
PAPER – IV
FICTION

UINT – I
Samuel Richardsen – Ramela
Henry Fielding Tom – Jones

UNIT – II
Daniel Defoe – Robinson Crusoe
Charles Dickens-Great Expectations

UNIT – III
Jane Austen= Emma
M. M. Thaekeray = Vanity Fair

UNIT – IV Hardy
Thomas Hardy= Return of the Native
Virginia Woolf = Dalloway

NOTE:

1. The Question Paper will comprise of two sections. [illegible]
2. There will be objective questions covering the entire unit [illegible] The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to IV of equal marks (16 for each questions) with 50% internal choice.

Recommended Books:
1. The English Novel – Walter Allen
2. History of English Novel – Earnest Baker
3. Representative English Novels : McCullough Bruse

SEMESTER II
PAPER – I
POETRY-II

UNIT – I
Annotations from the detailed text six (6) to be asked three (3) to be attempted.

UNIT – II
William Wordsworth – Tintern Abby. (D)
S.T. Colоridge- Rime of Ancient Mariner

UNIT – III
P.B. Shelley – Adonais
John Keats – Ode to a Nightingale (D)
Ode on a Grecian urn (D)

UNIT – IV
Byron – She walks in Beauty,
When we two parted
Alfred Tennyson – [illegible], Ulysses

UNIT – V
[illegible]
[illegible]
Matthew Arnold [illegible]

NOTE:
1. The Question [illegible] sections Section A and section B.
2. There will be [illegible] entire units/contents of the paper. The number [illegible]
3. There will be [illegible] marks.
4. In section B there will be descriptive answer type questions from unit II to V of equal marks [illegible] internal choice.
5. The first question [illegible] will comprise of annotations from the detailed text (D) mentioned in syllabus. [illegible] passages for annotations to be asked and 3 to be attempted.

Recommended Books:
1. Desmond King – Hele – Shelley – His Thought and work, McMillian London.
2. Graham Hough – The Last Romantic
3. Humphry House – Coleridge
4. C.M. Bowra – The Romantic Imagination.

SEMESTER II
PAPER – II
DRAMA-II

UNIT – I
Annotations from the detailed text six (6) to be asked three (3) to be attempted

UNIT – II
Oliver Goldsmith – She stoops to conquer
R.B. Sheridian - The School for scandal (D)

UNIT – III
G.B. Shaw – Arms and the Man (D)
Galsworthy – Justice

UNIT – IV
T.S. Eliot – Murder in the Cathedral
John Osborne - Look back in Anger

UNIT – V
Henrik Ibson – A Dolls Hose (D)
Brecht - Mother Courage and her Children

NOTE:

1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit II to V of equal marks (12 for each question) with 50% internal choice.
5. The first questions of section B will comprise of annotations from the detailed text (D) mentioned in syllabus. 6 passages for annotations to be asked and 3 to be attempted.

Recommended Books :

1. Raymond Williams : Drama from Ibson to Eliot
2. Allardyee Nicols – British Drama
3. Raynond Williams : Drama from Ibson to Brecht
4. David Clark : Twentieth Century Interpretation of Murder in the Cathedral

SEMESTER II
PAPER- III
MODERN LITERATURE (POETRY & PROSE)

UNIT – I

Annotations from the detailed text six (6) to be asked three (3) to be attempted.

UNIT - II

W.B. Yeats – Sailing to Byzantium, (D), The Second coming, (D)
G.M. Hopkins –God's Grandeur, Pied beauty, The sea and The sky lark, The Wind Hover

UNIT – III

T.S. Eliot – The waste land, W.H. Auden - In memory of W.B. Yeats, (D)

UNIT – IV

Robert Lynd – Back to the desk, (D), Forgetting, (D), A.G. Gardiner– On the Rule of Road, On saying please.

UNIT – V

J.K. Chesterton – On running after one's hat patriotism and sports. Hillaric Belloc – On Preserving English, On Books

NOTE:

1. The Question Paper will consist of two sections, Section A and section B.
2. There will be [illegible] and the entire unit contents of the paper. The number of [illegible]
3. There will be [illegible] marks.
4. In section B there will be [illegible] questions from unit II to V of equal marks and [illegible]
5. The first question of [illegible] passages for annotations from the detailed text (D) mentioned in syllabus. 6 passages for annotation to be asked and 3 to be attempted

Recommended Books:

1. A.G. Gardiner: Selected Essays, R.P. Tiwari (Ed)
2. The English Essays and Essayists, Hugh Walker
3. A Manual of English Prose : Minto

SEMESTER II
PAPER – IV
FICTION AND SHORT STORIES

UNIT – I
James Joyce – Portrait of the Artist as a young man
D.H. Lawrence – Sons and Lovers.

UNIT – II
E.M. Forster – Passage to India
Joseph Conrad – Heart of Darkness

UNIT – III
Oscar wilde – The Happy Prince,The Selfish giant
O Henry - The Gift of Magi, the Last Leaf.

UNIT – IV
Katherine Mansfield – A cup of Tea, the Fly
Anton Chekhov – The lady with the Dog, The Grass Hopper

NOTE:
1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for each questions) with 50% internal choice.

Recommended Books:

1. The English Novel from Dickens to Lawrence: William Raymond (1970)
2. Conrad's Heart of Darkness a critical and contextual Discussion: Cadric Walts

SEMESTER III
PAPER– I
CRITICAL THEORY

UNIT- I
A. Aristotle – The Poetics
B. Bharat Muni – Natya Shastra

UNIT- II
A. Wordsworth – Preface to Lyrical Ballads
B. T.S. Eliot – Tradition and Individual Talent.

UNIT –III
A. Ernest Jones: Hamlet, the Psychological Solution
B. I.A. Richards – Two uses of language.

UNIT- IV
A. Roland Barthes – The Death of the Author
B. Edward Said – From Culture and Imperialism

NOTE:
1. The Question Paper will comprise of two sections, Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of question will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. IN section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for each questions) with 50% internal choice.

RECOMMENDED READING:
1. English Critical Texts by Euright and D chikera.
2. The critical tradition by David H. Richter (Bed Ford/St. Martins, Boston)
3. Five Approaches of Literary Criticous by Willbur Scitt (Collier Books New York)
4. Indian Aesthetics by C.S. Seturaman (Macmillian).
5. Practical Criticism by I.A. Richards (Allied Publishers, New Delhi)
6. S. Ramswamy and V.S. Sethruman eds. The English Critical Tradition, Volume II Delhi Macmillan 1977, For Jonthan Culler.
7. David lodge, ed. Modern criticism and Theory: A Reader London Longman 1988 for Ronald Barthes,Elaine Showiter.
8. David Lodge, ed. Twentieth Century Literary Criticism, London, Longman, 1972 for Northrop Frye, George Lukacs.
9. Phillip Rice and Patricia Waugh, Eds. A modern Literary Theory: A Reader Third edition. Arnold, 1999, for Ferdinand de Saussure, Stephe, Greenblatt, Edward said.

SEMESTER-III
Paper –II (COMPULSORY)
INDIAN LITERATURE

UNIT - I
Annotations from the detailed text six (6) to be asked three (3) to be attempted.

UNIT - II
1. Rabindranath Tagore – Gitanjali (1 to 10) (D)
2. Sri Aurobindo – Savitri Book I (canto 1)

UNIT - III
1. Sarojini Naidu – Broken Wing, (D)
   Indian Weavers, (D)
   Village song.(D)
2. Nissiem Ezekiel – Enterprise, Philosophy, Poet Lover, and Bird Watcher

UNIT - IV:
1. Rabindranath Tagore – Post office (D)
2. Girish karnad – Naga Mandala

UNIT - V:
1. M.R. Anand – Coolie
2. R. k. Narayan – Guide

NOTE:
1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units' contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit II to V of equal marks (12 for each questions) with 50% internal choice.
5. The first questions of section B will comprise of annotations from the detailed text (D) mentioned in syllabus. 6 Passages for annotations to be asked and 3 to be attempted.

RECOMMENDED READING:
1. Indian writing in English by K.R. Srinivas Iyengar (sterling New Delhi)
2. Modern Indo English Fiction by Dhawan R.K. (1982) New Delhi, Bhari Publication.
3. Dimensions ^ Indian English literature by Naik M.k. (1984) New Delhi Sterling Publisher.

SEMESTER III
PAPER- III
AMERICAN LITERATURE

UNIT – I
Annotations from the detailed text six 6to be asked 3 three to be attempted.

UNIT - II
Poetry
Walt Whitman – 1. I hear America Singing.
2. When lilacs last in the Dooryard Bloom'd
Robert Frost – 1. Mending Walls. (D)
2. Birches. (D)
3. Stopping by the Woods on a Snowy Evening (D)

UNIT - III
Drama
Arthur Miller – Death of a Salesman. (D)
Eugene O Neil – Emperor Jones

UNIT – IV
Prose
Emerson – Self Reliance. (D)
Thoreau – Civil Disobedience

UNIT - V
Fiction
Hemingway – Old Man and the Sea
William Faulkner – The Sound and the Fury.

NOTE:
1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units' contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit II to V of equal marks (12 for each questions) with 50% internal choice.
5. The first questions of section B will comprise of annotations from the detailed text (D mentioned in syllabus. 6 passages for annotations to be asked and to be attempted

RECOMMENDED READING:
1. The cycle of American literature by Robert E. spiller.
2. American literature by An Anthology by Oliver (S.Chand and Company New Delhi)
3. Modern American Literature – by A.A. Mutalik Desai & T.S. Anand.

SEMESTER III
PAPER – IV
(OPTIONAL)
1. HISTORY OF ENGLISH LITERATURE

UNIT – I
Elizabethan Age

UNIT – II
Neo Classical Age

UNIT – III
Romantic Age

UNIT – IV
Victorian Age

NOTE:

1. The question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of question will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for each questions) with 50% internal choice.

RECOMMENDED READING:

1. Rickett, AC History of English Literature New Delhi; U.BS 1998.
2. Evans, Ifor, A short History of English Literature Penguin, 1996.
3. Legouis & Cazamion History of English Literature, Macmillan India Ltd.1983.
4. Sampson, George. Concise Cambridge History of English Literature C.U.P. 1976

SEMESTER III
PAPER -IV
(OPTIONAL)
2. LINGUISTICS

UNIT – I
History of English Language

UNIT - II
Linguistics: Definition, Nature and its Scope,
Branches of Linguistics, History of Linguistics,
Some Basic Concepts in Linguistics, (Synchrony and Diachrony)
Languages and Parole, Competence and Performance, Syntagmatic and
Paradigmatic relations Language and communication, Language Variation (Dialect,
Register, Style, Idiolect, Pidgin Creole) And Language Change.

UNIT – III
Phonetics and Phonology.
Phoneme, Allophone, Human Speech Mechanism
Vowels and Consonants in English
Syllable Structure, Supra-Segmental Features
IPA, Phonetic Transcription.

UNIT – IV
Morphology and Syntax: Morpheme,
Word Formation Processes in English,
Traditional Grammar, IC Analysis,
Phrase Structure grammar,
Transformation – Generative Grammar.

NOTE:
1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper. The number of questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section b there will be descriptive answer type questions from unit I to IV of equal marks (15 for each questions) with 50% internal choice.

Recommended Books

1. Abercrombie, D. Elements of general Phonetics (Edinburg university Press, 1967)
2. Balasubramaniam, T.A. Textbook of English Phonetics for Indian Students (Macmillan 1981)

3. Chomsky, Noam. Aspects of the Theory of Syntax (Cambridge, Mass : MIT Press, 1965)
4. Crystal, David, Linguistics (Penguin, 1971)
5. Hockett, C.F. A. Course on Modern Linguistics (New York : Macmillan, 1958)
6. Katamba, F. Morphology (Basingstoke : Macmillan, 1993)
7. Lyons J. 1968. Introduction to Theoretical Linguistics (CUP, 1981)
8. O' Connor, J.D. Phonetics (Penguin, 1973)
9. Robins, R.H. General Linguistics (Longman, 3rd Edition 1980)
10. Saussure, Ferdinand de. A Course in General Linguistics, Trans. Wade Baskin (New York: McGraw Hill.)
11. Verma S.K. and n. Krishnaswamy. Introduction to modem linguistics (OUP, 1993)

SEMESTER IV
PAPER – I
LITERATURE IN TRANSLATION

Unit - I

Kalidas – Abhigyan Shakuntalam from the book (The loom of Life) Translated by Chandra Rajan.

Banabhatta – Kadambari

Unit - II

Tagore – The Home and the Word translated by Shri Surendra Nath Tagore

Amrita Pritam– Panjar (The Skeleton) translated by Khushwant Singh.

(pinjar)

Unit - III

Premchand – Godan translated by Jai rattan and P. Lal

Mohan Rakesh- Aadhe Adhure

Unit - IV

Girish Karnad – "The Fire and the Rain

Vijay Tendulkar – Ghashiram Kotwal

NOTE:

1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/contents of the paper.
3. The number of questions will be 10 each of one mark.
4. There will be 5 short answer type questions each of two marks.
5. In section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for each questions) with 50% internal choice.

Recommended Books:

1. Das, B. K. A Handbook of Translation Studies. New Delhi: Atlantic Publishers.
2. Munday, Jeremy, Introduction Translation Studies London: Rout ledge 2001.
3. Naikar, Basavaraj. Indian Literature in English Translation. Delhi: National Publishing House, 2004.
4. Encyclopaedia of Indian Literature. Vol. 1-6, New Delhi: Sahitya Academy.

SEMESTER IV
PAPER – II
DIASPORA AND DALIT LITERATURE

UNIT – I
V. S. Naipul – The House of Mr. Biswas
Amitav Ghosh – The Shadow Lines

UNIT – II
Bharti Mukherjee – Jasmine
Arundhati Roy – The God of Small Things

UNIT – III
Mulk Raj Anand – Untouchable
Vijay Tendulkar – Kanyadaan

UNIT – IV
U.R. Anand Murthy – Samskar
Om Valmiki – Jhootan

NOTE:
1. The Question Paper will comprise of two sections. Sections A and section B.
2. There will be objective questions covering the entire units/ contents of the paper. The number of question will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B (15 for each questions) with 50% internal choice.

Recommended Books:
1. K. Satyanarayan & Susie Tharu (ed). No Alphabet in sight: New Dalit Writing from South India. New Delhi: Penguine Books 2001.
2. R. Kumar Dalit Personal Narratives. New Delhi: Orient Sharmila Rege. Writing Caste: Writing Gender, Delhi: Ivban 2006.

SEMESTER IV
PAPER – III
WORLD LITERATURE

UNIT – I

Annotations from the detailed text 4 to be asked and 2 to be attempted.

UNIT – II

1.	Emily Dickenson –	1.	I felt a funeral in my Brain. (D)
		2.	Success is counted sweetest. (D)
		3.	After great pain a formal feeling comes. (D)
2.	Wallace Stevens -	1.	Sunday morning.
		2.	Emperor of Ice cream
		3.	Vacancy in the park.

UNIT – III

1.	Toru Dutt -	1.	Casuarina Tree (D)
		2.	Lakshman (D)
2.	Kamla Das -	1.	A Hot noon in Malabar
		2.	Nani
		3.	My Grand Mother's House

UNIT – IV

1.	Mahatma Gandhi -	My experiments with Truth
2.	A.P.J. Abdul Kalam -	Wings of Fire.

UNIT - V

1.	Benokri –	The Famished Road
2.	Taslima Nasreen –	Lajja

NOTE:

1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/ contents of the paper. The number if questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit II to V of equal marks (12 for each questions) with 50% internal choice.
5. The first questions of section B will comprise of annotations from the detailed text (D) mentioned in syllabus. 6 passages for annotations to be asked and 3 to be attempted

Recommended Books:

1. Dhavan, R.k. (Ed) Common wealth Literature Vol. – 4 New Delhi: Creative Books. Naikar, Bhasavaraj: Perspective on Common we alit literature, Jaipur: Book Enclave 2003.

SEMESTER IV
PAPER – IV
(OPTIONAL)
1. COLONIAL AND POST COLONICAL LITERTURE

UNIT – I
George Orwell – Animal Farm
Chinuae Achebe – Things fall apart.

UNIT – II
Salman Rushdie – Midnight Children
Arvind Adiga – The White Tiger

UNIT – IIII
Tonni Morison – The Bluest eye.
Margaret Atwood – Surfacing

UNIT – IV
Alice walker – The Color Purple
Jhumpa Lahiri – The Name Sake.

NOTE:
1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/ contents of the paper. The number if questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for questions) with 50% internal choice.

Recommended Books:
1. Jayafoxmraw Culture and anarchy in the novels of Chinuae Achebe.

SEMESTER IV
PAPER – IV
(OPTIONAL)
2. GENDER STUDIES

UNIT – I

Defining the concept, Sex and Gender. Stereotypes, Gynocriticism, Body Politics, Female Creativity, Social Practices, Sati, Dowry, Rape, Child Marriage, widow hood, Female feticide and prostitution.

UNIT – II

Simon de Beauvoir "The Second Sex"
Kate Mikkett "Sexual Politice"

UNIT – III

Virginia Woolf "A Room for one's own"
Elaine Showalter "Speaking of Gender"

UNIT – IV

Ellen moers "Literary Women"

NOTE:

1. The Question Paper will comprise of two sections. Section A and section B.
2. There will be objective questions covering the entire units/ contents of the paper. The number if questions will be 10 each of one mark.
3. There will be 5 short answer type questions each of two marks.
4. In section B there will be descriptive answer type questions from unit I to IV of equal marks (15 for questions) with 50% internal choice.

Recommended Books:

1. Nayar, Pramod K Literary Theory Today, New Delhi : Pratige Asia Book Club (2002)

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

टीप :– एम.ए. इतिहास सेमेस्टर पद्धति में सेमेस्टर I एवं II में तीन अनिवार्य प्रश्न पत्रों के अतिरिक्त परीक्षार्थियों को कोई एक वैकल्पिक प्रश्न पत्र का चयन करना होगा। प्रत्येक प्रश्न पत्र 100–100 अंकों का होगा। 100 अंकों में 80 अंक सैद्धांतिक एवं 20 अंक आंतरिक मूल्यांकन के होंगे।

प्रथम सेमेस्टर SEMESTER I

प्रश्न पत्र	प्रश्न पत्र का नाम	पूर्णांक	सैद्धांतिक	आंतरिक मूल्यांकन
I	इतिहास पद्धतियां (अनिवार्य) Historical Mathods (Compulsory)	100	80	20
II	आधुनिक विश्व (अनिवार्य) Modern world (Compulsory)	100	80	20
III	प्राचीन एवं मध्यकालीन छत्तीसगढ़ (अनिवार्य) Ancient and Medieval Chhattisgarh (Compulsory)	100	80	20
OPTIONAL IV (A)	ग्रेट ब्रिटेन का इतिहास 1815–1885 History of Great Britain 1815-1885	100	80	20
OPTIONAL IV (B)	चीन और जापान का इतिहास1800–1911 History of China & Japan 1800-1911	100	80	20
OPTIONAL IV (C)	भारतीय इतिहास में नारी–प्राचीन एवं मध्यकालीन Women in Indian History in Ancient Medieval Period	100	80	20
			TOTAL	400

द्वितीय सेमेस्टर SEMESTER II

प्रश्न पत्र	प्रश्न पत्र का नाम	पूर्णांक	सैद्धांतिक	आंतरिक मूल्यांकन
I	इतिहास लेखन (अनिवार्य) Historigraphy (Compulsory)	100	80	20
II	समकालीन विश्व (अनिवार्य) Contemporary world (Compulsory)	100	80	20
III	आधुनिक छत्तीसगढ़ (अनिवार्य) Modern Chhattisgarh (Compulsory)	100	80	20
OPTIONAL IV (A)	आधुनिक इंग्लैण्ड 1885–1956 Modern England 1885-1956	100	80	20
OPTIONAL IV (B)	चीन और जापान का इतिहास 1911–1950 History of China & Japan 1911-1950	100	80	20
OPTIONAL IV (C)	आधुनिक भारत में नारी Women in Modern India	100	80	20
			TOTAL	400

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

टीप :– एम.ए. इतिहास सेमेस्टर पद्धति में सेमेस्टर III एवं IV में परीक्षार्थियों को निम्नलिखित खण्ड–अ एवं खण्ड–ब में से किसी एक खण्ड का चयन कर उसके दोनों प्रश्न पत्रों को हल करना होगा। उपरोक्त 4 वैकल्पिक प्रश्न पत्रों में से परीक्षार्थियों को सरल क्रमांक 1, 3 में से कोई एक एवं 2, 4 में से कोई एक वैकल्पिक प्रश्न पत्रों का चयन करना होगा। सभी प्रश्न पत्रों में 100–100 अंक होंगे। 100 अंकों में 80 अंक सैद्धांतिक एवं 20 अंक आंतरिक मूल्यांकन के होंगे।

तृतीय सेमेस्टर SEMESTER III

प्रश्न पत्र	प्रश्न पत्र का नाम	पूर्णांक	सैद्धांतिक	आंतरिक मूल्यांकन
खण्ड अ : मध्यकालीन भारत **SECTION A : MEDIEVAL INDIA**				
I	सल्तनतकालीन भारतीय राजनय एवं अर्थव्यवस्था (1200 से 1526 ई. तक) Indian polity and economy in Sultanate period (1200-1526 A.D.)	100	80	20
II	सल्तनत कालीन समाज एवं संस्कृति (1200 से 1526 ई.) Society and culture in Sultanate Period (1200-1526 A.D.)	100	80	20
खण्ड ब : आधुनिक भारत **SECTION B : MODERN INDIA**				
I	आधुनिक भारत 1757 ई. से 1857 ईसवी (राजनीतिक, प्रशासनिक) Modern India 1757 A.D. to 1857 A.D. (Political, Administrative)	100	80	20
II	आधुनिक भारत 1757 ई. से 1857 ई. तक (आर्थिक, सामाजिक, सांस्कृतिक) Modern India 1757 A.D. to 1857 A.D. (Economic, Social, Cultural)	100	80	20
वैकल्पिक प्रश्न पत्र **(OPTIONAL PAPER)**				
OPTIONAL I	भारतीय राष्ट्रीय आंदोलन का इतिहास (1857 से 1922 ई. तक) History of National Movement (1857 to 1922 A.D.)	100	80	20
OPTIONAL II	भारत का सांस्कृतिक इतिहास (प्रारंभ से 1526 ई. तक) Cultural History of India (Begining to 1526 A.D.)	100	80	20
OPTIONAL III	भारतीय संविधान और शासन व्यवस्था Indian Constitution and Administrative System	100	80	20
OPTIONAL IV	पर्यटन सिद्धांत Tourism Theory	100	80	20

TOTAL	400

टीप :– एम.ए. इतिहास सेमेस्टर पद्धति में सेमेस्टर III एवं IV में परीक्षार्थियों को निम्नलिखित खण्ड–अ एवं खण्ड–ब में से किसी एक खण्ड का चयन कर उसके दोनों प्रश्न पत्रों को हल करना होगा। उपरोक्त 4 वैकल्पिक प्रश्न पत्रों में से परीक्षार्थियों को सरल क्रमांक 1, 3 में से कोई एक एवं 2, 4 में से कोई एक वैकल्पिक प्रश्न पत्रों का चयन करना होगा। सभी प्रश्न पत्रों में 100–100 अंक होंगे। 100 अंकों में 80 अंक सैद्धांतिक एवं 20 अंक आंतरिक मूल्यांकन के होंगे।

चतुर्थ सेमेस्टर SEMESTER IV

प्रश्न पत्र	प्रश्न पत्र का नाम	पूर्णांक	सैद्धांतिक	आंतरिक मूल्यांकन
खण्ड अ : मध्यकालीन भारत **SECTION A : MEDIEVAL INDIA**				
I	मुगलकालीन भारतीय राजनय एवं अर्थव्यवस्था (1526 से 1750 ई. तक) Indian polity and economy in Mughal period (1526-1750 A.D.)	100	80	20
II	मुगलकालीन समाज एवं संस्कृति (1526 से 1750 ई.) Society and culture in Mughal period (1526-1750 A.D.)	100	80	20
खण्ड ब : आधुनिक भारत **SECTION B : MODERN INDIA**				
I	आधुनिक भारत 1858 ई. से 1964 ई.तक (राजनीतिक, प्रशासनिक) Modern India 1858 A.D. to 1964 A.D. (Political, Administrative)	100	80	20
II	आधुनिक भारत 1858 ई. से 1964 ई. तक (आर्थिक, सामाजिक, सांस्कृतिक) Modern India 1858 A.D. to 1964 A.D. (Economic, Social, Cultural)	100	80	20
वैकल्पिक प्रश्न पत्र **(OPTIONAL PAPER)**				
OPTIONAL I	भारतीय राष्ट्रीय आंदोलन का इतिहास (1922 से 1947 ई. तक) History of National Movement (1922 to 1947 A.D.)	100	80	20
OPTIONAL II	भारत का सांस्कृतिक इतिहास (1526 से 1950 ई.) Cultural History of India (Begining to 1526 AD	100	80	20
OPTIONAL III	भारतीय की केन्द्रीय तथा प्रांतीय शासन व्यवस्था Central and State Administrative System of India	100	80	20
OPTIONAL IV	पर्यटन सिद्धांत एवं व्यवहार–इतिहास के संदर्भ में Tourism Theory and Priniciples In Reference of History	100	80	20
			TOTAL	**400**

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

GRAND TOTAL 1600

SEMESTER I
PAPER I (COMPULSORY)
HISTORICAL MATHODS
इतिहास पद्धतियां

इकाई– 1

1. इतिहास का अर्थ एवं परिभाषा
2. इतिहास का स्वरूप
3. इतिहास विज्ञान एवं कला के रूप में
4. इतिहास के प्रकार

इकाई– 2

5. इतिहास का अन्य सभी सामाजिक विज्ञान विषयों के साथ संबंध
6. इतिहास का साहित्य के साथ संबंध
7. इतिहास में तथ्य
8. तथ्यों की व्याख्या

इकाई– 3

9. इतिहास में उपकरण
10. इतिहास में कारण एवं नियतिवाद
11. इतिहास में वस्तुनिष्ठता
12. इतिहास में पूर्वाग्रह

इकाई– 4

13. इतिहास का चक्रवादी सिद्धांत
14. इतिहास का समाज शास्त्रीय सिद्धांत
15. इतिहास का आदर्शवादी सिद्धांत
16. इतिहास का तुलनात्मक सिद्धांत

इकाई– 5

17. इतिहास का आलोचनात्मक सिद्धांत
18. इतिहास का भौतिकवादी सिद्धांत
19. इतिहास का सापेक्षवादी सिद्धांत
20. इतिहासवाद

संदर्भ ग्रंथ :

(1) झारखण्ड चौबे – इतिहास दर्शन
(2) के.एल.खुराना एवं आर.के.बंसल – इतिहास लेखन, धारणाएं तथा पद्धतियां
(3) परमानन्द सिंह – इतिहास दर्शन
(4) प्रो.राधेशरण – इतिहास पद्धति, इतिहास लेखन
(5) गोविन्द चन्द्रपांडे – इतिहास स्वरूप एवं सिद्धांत
(6) ब्रजेश कुमार श्रीवास्तव – इतिहास लेखन : अवधारणा, विधाएं एवं साधन
(7) E.H.Car - What is History
(8) R.G. Collingwood - The Idea of History
(9) बुद्ध प्रकाश – इतिहास दर्शन
(10) बुद्ध प्रकाश – इतिहास दर्शन उद्देश्य एवं विधि
(11) मानिक लाल गुप्ता – इतिहास–स्वरूप, अवधारणाएं एवं उपयोगिता
(12) रामकुमार बेहार, ऋषिराज पांडेय – इतिहास पद्धति एवं इतिहास लेखन
(13) कौलेश्वर राय – इतिहास दर्शन

(14) Erich Kahler - The Meaning of History

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER I
PAPER II (COMPULSORY)
MODERN WORLD
आधुनिक विश्व

इकाई– 1

1. विश्व में पूंजीवाद का विकास
2. साम्राज्यवाद का विकास–इंग्लैंड और फ्रांस में
3. साम्राज्यवाद का विकास–जर्मनी और जापान में
4. इंग्लैंड में उदारवाद का विकास

इकाई– 2

5. बिस्मार्क की आंतरिक एवं विदेश नीति
6. कैसर विलियम द्वितीय की विश्व राजनीति
7. 1900–1910 तक अंतर्राष्ट्रीय संधियां
8. 1912 तक पूर्वी समस्या

इकाई– 3

9. प्रथम एवं द्वितीय बाल्कन युद्ध एवं प्रभाव
10. प्रथम विश्वयुद्ध कारण एवं परिणाम
11. पेरिस की शांति सम्मेलन एवं वर्साय की संधि
12. विश्व में समाजवाद का विकास

इकाई– 4

13. 1917 की रूसी क्रांति
14. बोलेशेविक क्रांति एवं लेनिन
15. राष्ट्रसंघ संगठन
16. राष्ट्रसंघ की उपलब्धियां एवं असफलताएं

इकाई– 5

17. प्रथम विश्वयुद्ध के पश्चात् विश्व आर्थिक मंदी का उदय
18. न्यूडील
19. इटली में फांसीवाद–उदय के कारण
20. मुसोलिनी–गृह एवं विदेश नीति

संदर्भ ग्रंथ :

(1) दीनानाथ वर्मा – आधुनिक विश्व का इतिहास
(2) के.एल.खुराना एवं शर्मा – विश्व का इतिहास
(3) बिनाके – सुदूरपूर्व का इतिहास
(4) H.G.Wells - World History
(5) Moon & Parker - Imperialism & world politieces
(6) मथुरालाल शर्मा – आधुनिक यूरोप
(7) कालूराम शर्मा – आधुनिक विश्व का इतिहास

(8) केटेलबी – आधुनिक यूरोप (1815 से 1919)
(9) देवेन्द्र सिंह चौहान – आधुनिक यूरोप (1815 से 1919)
(10) सत्यकेतु विद्यालंकार – एशिया का इतिहास
(11) जार्ज बर्नाद्सकी – रूस का इतिहास
(12) B.V. Rao - History of Modern world
(13) D.N.Ghosh - The History of Europe
(14) B.R.Gokhale - Modern Europe
(15) डॉ.मथुरालाल शर्मा – आधुनिक विश्व
(16) विपिन बिहारी सिन्हा – आधुनिक विश्व
(17) दीनानाथ वर्मा एवं शिवकुमार सिंह – विश्व इतिहास का सर्वेक्षण
(18) जैन एवं माथुर – आधुनिक विश्व
(19) डॉ.एस.आर. वर्मा – आधुनिक विश्व का इतिहास
(20) मानिक लाल गुप्ता – विश्व का इतिहास
(21) इंदिरा अर्जुन देव – समकालीन विश्व का इतिहास (1890–2008)
(22) बी.एन. लुणिया – आधुनिक पाश्चात्य इतिहास की प्रमुख धाराएं (भाग–2)
(23) कौलेश्वर राय – आधुनिक एशिया (1839–1949)
(24) कौलेश्वर राय – आधुनिक यूरोप (1789–1945)

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-I
PAPER-III (COMPULSORY)
ANCIENT & MEDIEVAL CHHATTISGARH
प्राचीन एवं मध्यकालीन छत्तीसगढ़

इकाई– 1

1. छत्तीसगढ़ का परिचय एवं भौगोलिक स्थिति
2. छत्तीसगढ़ का नामकरण
3. छत्तीसगढ़ का जनजीवन
4. प्राचीन छत्तीसगढ़–मौर्य वंश के पूर्व तक

इकाई– 2

5. छत्तीसगढ़ में मौर्यकालीन एवं गुप्तकालीन छत्तीसगढ़
6. छत्तीसगढ़ में सातवाहनों का प्रभाव
7. क्षेत्रीय राजवंश–नलवंश, राजर्षितुल्य कुल वंश, शरभपुरीय वंश
8. पाण्डु वंश, छिन्दकनाग वंश, फणिनाग वंश

इकाई– 3

9. छत्तीसगढ़ में कल्चुरियों का आगमन
10. छत्तीसगढ़ में कल्चुरि वंश एवं रत्नदेव से मोहन सिंह तक
11. कल्चुरि कालीन शासन व्यवस्था
12. कल्चुरि कालीन आर्थिक दशा

इकाई– 4

13. कल्चुरि कालीन सामाजिक एवं सांस्कृतिक दशा
14. कल्चुरि स्थापत्य
15. छत्तीसगढ़ में मराठा शासन –बिंबाजी एवं उनका प्रशासन
16. छत्तीसगढ़ में मराठों की सूबा शासन व्यवस्था

इकाई– 5

17. रघुजी तृतीय
18. मराठा कालीन छत्तीसगढ़
19. मराठा कालीन छत्तीसगढ़ की सामाजिक एवं सांस्कृतिक दशा
20. ब्रिटिश नियंत्रण काल

संदर्भ ग्रंथ :

(1) प्यारेलाल गुप्त – प्राचीन छत्तीसगढ़
(2) पी.एल. मिश्र – दक्षिण कोशल का प्राचीन इतिहास
(3) पी.एल. मिश्र – मराठाकालीन छत्तीसगढ़
(4) भगवान सिंह वर्मा – छत्तीसगढ़ का इतिहास
5) राम कुमार बेहार – छत्तीसगढ़ का इतिहास
(6) एल.एस. निगम – दक्षिण कोशल का इतिहास
(7) मदनलाल गुप्ता – छत्तीसगढ़दिग्दर्शन भाग 1, भाग 2
(8) जे.आर. वार्ल्यानी एवं वासुदेव साहसी – छत्तीसगढ़ का राजनीतिक एवं सांस्कृतिक इतिहास
(9) सुरेश चंद्र शुक्ल –छत्तीसगढ़ का समग्र अध्ययन
(10) ऋषिराज पांडेय –छत्तीसगढ़ (दक्षिण कोशल के कल्चुरि)
(11) व्ही.व्ही मिराशी – कल्चुरि नरेश और उनका काल
(12) श्रीमति शांता शुक्ला –छत्तीसगढ़ की सामाजिक एवं आर्थिक स्थिति

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-I Optional

PAPER-IV (-A)

HISTORY OF GREAT BRITAIN 1815-1885

ग्रेट ब्रिटेन का इतिहास (1815 से 1885)

इकाई– 1

1. 1815 से 1822 तक आंतरिक समस्याएं
2. 1822 से 1830 तक इंग्लैंड की आंतरिक स्थिति
3. कैसलरे की विदेश नीति
4. कैनिंग की विदेश नीति

इकाई– 2

5. ब्रिटेन में उदारवाद का उदय
6. ब्रिटेन में उदारवाद के विकास का कारण
7. 1832 का सुधार अधिनियम
8. 1830 से 1841 तक अन्य सुधार

इकाई– 3

9. चार्टिस्ट आंदोलन
10. ग्रेट ब्रिटेन की विदेश नीति (1830–1841)
11. सर राबर्ट पील
12. लार्ड जॉन रसेल

इकाई– 4

13. लार्ड पामर्स्टन
14. 1867 का सुधार अधिनियम
15. बेंजामिन डिजरैली – विदेश नीति
16. नवीन टोरीवाद

इकाई– 5

17. ग्रेट ब्रिटेन और मुक्त व्यापार
18. ग्रेट ब्रिटेन और पूर्वी समस्या (1828–1878)
19. ब्रिटिश साम्राज्यवाद (1880 तक)
20. 1884 तथा 1885 के संसदीय सुधार

संदर्भ ग्रंथ :

(1) एल.पी. शर्मा – इंग्लैंड का इतिहास

(2) विद्याधर महाजन – इंग्लै ंड का इतिहास

(3) J.A.R.Marriott - Modern England

(4) G.M.Trevelyan - Social History of England

(5) Ramsay Muir - History of England

(6) बिपीन बिहारी सिन्हा – आधुनिक ग्रेट ब्रिटेन

(7) मेरियट– आधुनिक इंग्लैंड का इतिहास

(8) रामकिशोर पाण्डेय – आधुनिक इंग्लैंड का इतिहास

(9) Maitland - Constitutional History of England

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सेमेस्टर पाठ्यक्रम

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SEMESTER-I Optional

PAPER-IV (-B)

HISTORY OF CHINA & JAPAN 1800 - 1911

चीन और जापान का इतिहास (1800 से 1911 तक)

इकाई– 1

1. चीन में यूरोपियों का प्रवेश
2. प्रथम अफीम युद्ध – कारण एवं परिणाम
3. द्वितीय अफीम युद्ध – कारण एवं परिणाम
4. ताइपिंग विद्रोह

इकाई– 2

5. जापान में यूरोपियों का प्रवेश
6. जापान में शोगुन व्यवस्था
7. शोगुन व्यवस्था का अंत और मेईजी पुर्नस्थापना के कारण
8. मेईजी काल में जापान का आधुनिकीकरण

इकाई– 3

9. चीन में विदेशी साम्राज्य का प्रसार एवं चीन की लूट–खसोट
10. जापान का औद्योगिकीकरण
11. चीन–जापान युद्ध–कारण एवं परिणाम
12. चीन में बॉक्सर विद्रोह कारण, घटनाएं एवं परिणाम

इकाई– 4

13. आंग्ल–जापान संधि 1902, कारण एवं परिणाम
14. रूस जापान युद्ध – कारण एवं परिणाम
15. देशोत्तर अधिकार, खुलेद्वार की नीति
16. ईवाकुस मिशन, फारमोसा अभियान

इकाई– 5

17. 1895 से 1911 तक चीन मे राजनीतिक सुधार आंदोलन
18. चीन में 1911 की क्रांति – कारण, प्रसार, परिणाम एवं महत्व
19. डॉ. सनयात् सेन
20. मंचूवंश के पतन के कारण

संदर्भ ग्रंथ :

(1) बिनाके – सुदूरपूर्व का इतिहास
(2) सत्यकेतु विद्यालंकार – एशिया का इतिहास
(3) दीनानाथ वर्मा – एशिया का इतिहास
(4) क्लाउड – सुदूर पूर्व का इतिहास
(5) के.एल.खुराना – एशिया का आधुनिक इतिहास
(6) बुस – द फार ईस्ट
(7) A.C. Gupta - A History of China
(8) F.H.B. Clyde - The Far East
(9) Goodridge - A Short History of Far East

SEMESTER-I Optional
PAPER-IV (-C)
WOMEN IN INDIAN HISTORY - ANCIENT & MEDIEVAL PERIOD
भारतीय इतिहास में नारी–प्राचीन एवं मध्यकालीन

इकाई– 1

1. नारी अध्ययन की विचार धारा, उदारवादी, समाजवादी, मार्क्सवादी, मनोवैज्ञानिक
2. नारी अध्ययन संबंधी स्रोत–ऐतिहासिक स्त्रोत
3. नारी अध्ययन की स्रोत गैर अभिलेखागारीय
4. नारी अध्ययन का महत्व एवं उपयोगिता

इकाई– 2

5. वैदिक साहित्य एवं महाकाव्य में नारी चित्रण
6. मौर्य एवं मौर्योत्तर काल में नारी की स्थिति
7. गुप्त एवं गुप्तोत्तर काल में नारी की स्थिति
8. राजपूत काल में नारी की स्थिति

इकाई– 3

9. बौद्ध धर्म में महिलाओं की स्थिति
10. जैन धर्म में महिलाओं की स्थिति
11. ईस्लाम में महिलाओं की स्थिति
12. सिक्ख धर्म में महिलाओं की स्थिति

इकाई– 4

13. प्राचीन भारत में महिला शिक्षा
14. मध्यकालीन भारत में महिला शिक्षा
15. प्राचीन भारत में महिलाओं की वैधानिक स्थिति
16. मध्यकालीन भारत में महिलाओं की वैधानिक स्थिति

इकाई– 5

17. प्राचीन कालीन दक्षिण भारत में महिलाओं की दशा
18. भक्ति आंदोलन और महिलाएं
19. मध्यकालीन राजनीति और महिलाएं
20. मध्यकालीन मराठा राजनीति एवं महिलाएं

संदर्भ ग्रंथ :

(1) कमलेश्वर प्रसाद – भारत का इतिहास खंड 1, 2, 3
(2) सुगम आनंद – भारतीय इतिहास में नारी
(3) के.सी.श्रीवास्तव – प्राचीन भारत का इतिहास तथा संस्कृति
(4) सुरेश चंद्र शुक्ला – भारतीय इतिहास में नारी
(5) रामधारी सिंह दिनकर – संस्कृति के चार अध्याय
(6) पुरी, दास, चोपड़ा – भारत का सामाजिक, आर्थिक, सांस्कृतिक इतिहास (भाग 1 एवं 2)
(7) प्रताप सिंह – आधुनिक भारत का सामाजिक, आर्थिक इतिहास
(8) राम शरण शर्मा – प्राचीन भारत
(9) सुधा गोस्वामी – भारत की चर्चित महिलाएं
(10) डॉ.एम.के. गिरि – द रोल एंड स्टेट्स ऑफ वीमन इन सिक्खिज्म
(11) राजपाल – वीमेन इन अरली मिडिवल नार्थ इंडिया

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-II
PAPER-I (COMPULSORY)
HISTORIOGRAPHY
इतिहास लेखन

इकाई– 1

1. यूनानी एवं रोमन इतिहास लेखन
2. चीनी इतिहास लेखन
3. मध्यकालीन यूरोपीय इतिहास लेखन
4. प्रबुद्धतावादी इतिहास लेखन

इकाई– 2

5. अरबी तथा परशियन (फारसी) इतिहास लेखन
6. प्राचीन भारत में इतिहास लेखन की परम्परा
7. मध्यकालीन भारतीय इतिहास लेखन–सल्तनत काल
8. मध्यकालीन भारतीय इतिहास लेखन–मुगल कालीन

इकाई– 3

9. भारतीय इतिहास की साम्राज्यवादी व्याख्या
10. भारतीय इतिहास की राष्ट्रवादी व्याख्या
11. भारतीय इतिहास की मार्क्सवादी व्याख्या
12. भारतीय इतिहास की सबालटर्न अथवा जनवादी व्याख्या

इकाई– 4

13. भारतीय इतिहास की विषय वस्तु–आर्थिक इतिहास
14. भारतीय इतिहास की विषय वस्तु–सामाजिक–सांस्कृतिक इतिहास
15. जातीय एवं जनजातीय इतिहास
16. क्षेत्रीय इतिहास लेखन

इकाई– 5

17. भारतीय इतिहास की विषय वस्तु–कृषक एवं श्रमिक
18. भारतीय इतिहास की विषय वस्तु–विज्ञान एवं प्रौद्योगिकी
19. भारतीय इतिहास की विषय वस्तु–नारी
20. भारतीय इतिहास लेखन में वामपंथी, दक्षिण पंथी वाद–विवाद

संदर्भ ग्रंथ :

(1) गोविन्द चन्द्र पांडे – इतिहास स्वरूप एवं सिद्धांत
(2) के.एल.खुराना, आर.के.बंसल – इतिहास–लेखन, धारणाएं तथा पद्धतियां
(3) प्रो. राधेशरण – इतिहास पद्धतियां इतिहास लेखन
(4) कौलेश्वर राय – इतिहास दर्शन
(5) कंवर बहादुर कौशिक – इतिहास दर्शन एवं भारतीय–इतिहास लेखन
(6) Gyanendra Pandey & Subaltern Studies
(7) ई. श्रीधरन – इतिहास लेख एक पाठ्य पुस्तक 500 ई.पूसे 2000 तक
(8) S.P.Sen - History & Historiography in Modern India
(9) Ranjit Guha - Subaltern Studies (All Volumes)
(10) बी.के. श्रीवास्तव – इतिहास के सिद्धांत स्वरूप एवं इतिहास लेखन
(11) हेरम्ब चतुर्वेदी – मध्यकालीन इतिहासकार
(12) R.C.Majumdar - Historiography of Modern India

(13) बी. शेख अली – हिस्ट्री इट्स थ्योरी एंड मेथड
(14) ए.आर. देसाई –Peasant strugales in India

SEMESTER-II
PAPER-II (COMPULSORY)
CONTEMPORARY WORLD
समकालीन विश्व

इकाई– 1

1. जर्मनी में नाजीवाद का उदय–कारण
2. हिटलर की गृह नीति
3. हिटलर की विदेश नीति
4. जापान में सैन्यवाद

इकाई– 2

5. द्वितीय विश्व युद्ध – कारण एवं परिणाम
6. संयुक्त राष्ट्रसंघ – उद्देश्य एवं संगठन
7. संयुक्त राष्ट्रसंघ – उपलब्धियां एवं योगदान
8. निशस्त्रीकरण की समस्याएं

इकाई– 3

9. चीनी क्रांति 1911
10. चीन में गृहयुद्ध एवं राष्ट्रवादी सरकार की स्थापना।
11. चीन में साम्यवादी सरकार का अभ्युदय।
12. हिन्द चीन एवं इंडोनेशिया में राष्ट्रीय आंदोलन

इकाई– 4

13. शीत युद्ध – परिभाषा एवं स्वरूप
14. शीत युद्ध – अंतर्राष्ट्रीय संधियां एवं तनाव
15. साम्यवादी रूस का विघटन – कारण एवं परिणाम
16. एक ध्रुवीय विश्व

इकाई– 5

17. गुटनिरपेक्ष आंदोलन एवं भारत, पंचशील
18. अरब राष्ट्रवाद
19. आधुनिक तुर्की
20. अंतर्राष्ट्रीय समस्या – फिलीस्तीन, कोरिया एवं वियतनाम

संदर्भ ग्रंथ :

(1) दीनानाथ वर्मा – आधुनिक विश्व का इतिहास
(2) सत्यकेतु विद्यालंकार – एशिया का इतिहास
(3) के.एल.खुराना एवं शर्मा – विश्व का इतिहास
(4) देवेन्द्र सिंह चौहान –समकालीन यूरोप
(5) S.P. Nanda - History of Modern World
(6) सुरेश च द्र एवं शिवकुमार – आधुनिक विश्व का इतिहास

(7) कालू राम शर्मा – आधुनिक विश्व
(8) ई.एच.कार – दो विश्व युद्ध के बीच
(9) जैन एवं माथुर – विश्व का इतिहास
(10) D.G.E. Hall - Soul Eori Asia
(11) B.V.E. Rao - History of World
(12) Leyender - The Mieldie East
(13) A.C.Ray - Contemporary World since 1919
(14) P.K. Chhatterjee - Modern World
(15) D.C.Bhattacharya - International relation in the 20th century
(16) अजय चंद्र बनर्जी – माडर्न वर्ल्ड
(17) अर्जुन देव, इंदिरा अर्जुन देव – समकालीन विश्व का इतिहास (1890–2008)
(18) बी.एन.लुणिया – आधुनिक पाश्चात्य इतिहास की प्रमुख धाराएं (भाग–2)
(19) कौलेश्वर राय – आधुनिक यूरोप (1789–1945)

SEMESTER-II
PAPER-III (COMPULSORY)
MODERN CHHATTISGARH आधुनिक छत्तीसगढ़

इकाई– 1

1. ब्रिटिश सत्ता की स्थापना
2. ब्रिटिश कालीन प्रशासनिक व्यवस्था
3. ब्रिटिश कालीन छत्तीसगढ़ की सामाजिक, सांस्कृतिक दशा
4. छत्तीसगढ़ के रियासतों के प्रति ब्रिटिश नीति

इकाई– 2

5. 1857 का विप्लव – छत्तीसगढ़ में सिपाही विद्रोह
6. जमींदारी विद्रोह – वीरनारायण सिंह
7. बस्तर में आदिवासी विद्रोह – 1876 एवं 1910
8. छत्तीसगढ़ में राष्ट्रीय आंदोलन 1920 तक

इकाई– 3

9. छत्तीसगढ़ में असहयोग आंदोलन
10. छत्तीसगढ़ में सविनय अवज्ञा आंदोलन
11. छत्तीसगढ़ में जंगल सत्याग्रह
12. छत्तीसगढ़ में व्यक्तिगत सत्याग्रह

इकाई– 4

13. छत्तीसगढ़ में भारत छोड़ो आंदोलन
14. छत्तीसगढ़ में किसान आंदोलन
15. छत्तीसगढ़ में श्रमिक आंदोलन
16. छत्तीसगढ़ में रियासतों का विलीनीकरण

इकाई– 5

17. छत्तीसगढ़ में धार्मिक आस्थाएँ, शैव, वैष्णव, शाक्त, जैन एवं बौद्ध धर्म
18. छत्तीसगढ़ में कबीर एवं सतनाम ग्रंथ
19. छत्तीसगढ़ की लोक संस्कृति
20. छत्तीसगढ़ राज्य निर्माण की पृष्ठभूमि

संदर्भ ग्रंथ :

1. किशोर अग्रवाल – बीसवीं शताब्दी का छत्तीसगढ़
2. किशोर अग्रवाल – स्वातंत्र्योत्तर छत्तीसगढ़
3. अरविंद शर्मा – छत्तीसगढ़ का इतिहास
4. तृषा शर्मा – छत्तीसगढ़ इतिहास, संस्कृति एवं परंपरा
5. अशोक शुक्ला – का रातनीतिक इतिहास
6. भगवान सिह वर्मा –छत्तीसगढ़ का इतिहास
7. सुरेश चन्द्र –छत्तीसगढ़ का समग्र इतिहास
8. हीरालाल शुक्ला –छत्तीसगढ़ का इतिहास
9. दिनेश कुमार राठौर – कांकेर का इतिहास
10. ऋषिराज पांडेय – सारंगढ़ रियासत

11. देवेश चौबे – मध्यप्रांत में छत्तीसगढ
12. रश्मि चौबे – राष्ट्रीय चेतना के विकास में छत्तीसगढ़ के साहित्यकारों का योगदान "पंडित सुंदरलाल शर्मा के विशेष में"

SEMESTER-II
PAPER-IV (A)
MODERN ENGLAND (1885-1956)
आधुनिक इंग्लैंड (1885 से 1956 तक)

इकाई– 1

1. ग्लैडस्टन – आयरिश नीति
2. ग्लैडस्टन – गृह नीति
3. सेलिसबरी– गृह नीति

इकाई– 2

4. सेलिसबरी– विदेश नीति
5. चेम्बरलेन का साम्राज्यवाद
6. 1911 का सुधार अधिनियम
7. इंग्लैंड की गृह नीति (1902–1914)

इकाई– 3

8. इंग्लैंड की विदेश नीति (1902–1914)
9. इंग्लैंड और पूर्वी समस्या (1878–1914)
10. प्रथम विश्व युद्ध में इंग्लैंड की भूमिका
11. दो विश्व युद्धों के बीच इंग्लैंड

इकाई– 4

12. विश्व आर्थिक मंदी और इंग्लैंड
13. अफ्रीका के विभाजन में इंग्लैंड की भूमिका
14. ग्रेट ब्रिटेन की गृह नीति (1919–1939)
15. ग्रेट ब्रिटेन की विदेश नीति (1919–1935)

इकाई– 5

16. चेम्बरलेन की तुष्टीकरण की नीति (1935–1939)
17. द्वितीय विश्व युद्ध में इंग्लैंड की भूमिका
18. द्वितीय विश्व युद्ध के पश्चात इंग्लैंड की स्थिति
19. इंग्लैंड और शीत युद्ध

संदर्भ ग्रंथ :

(1) एल.पी.शर्मा – इंग्लैंड का इतिहास
(2) विद्याधर महाजन – इंग्लैंड का इतिहास
(3) J.A.R. Marriott - Modern England
(4) G.M. Trevelyan - Social History of England
(5) अरूण कुमार मित्तल – इंग्लैंड का इतिहास
(6) रमेश चंद्र सिन्हा – इंग्लैंड का इतिहास
(7) Ramsay Muir - History of England

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-II Optional

PAPER-IV (-B)

HISTORY OF CHINA & JAPAN 1911-1950

चीन और जापान का इतिहास (1911 से 1950 तक)

इकाई– 1

1. चीनी गणराज्य
2. युवान–शिह–काई का शासन
3. चीन एवं प्रथम विश्व युद्ध
4. चीन में राष्ट्रवादी सरकार की स्थापना

इकाई– 2

5. नानकिंग की गणतंत्र (कुओमिंगतांग सरकार)
6. जापान एवं प्रथम विश्व युद्ध
7. जापान का आधुनिकीकरण – कारण एवं प्रगति
8. जापान में सैन्यवाद

इकाई– 3

9. जापान में साम्राज्यवाद 1932–1939
10. चीन में गृह युद्ध
11. चीन में राष्ट्रवादियों की पराजय
12. मंचूरिया संकट

इकाई– 4

13. चीन में साम्यवाद का उत्कर्ष
14. चीन में औद्योगिकीकरण
15. जापान एवं एंटिकोमिंटर्न पैक्ट
16. चीन–जापान में द्वितीय युद्ध

इकाई– 5

17. चीन एवं द्वितीय विश्व युद्ध
18. द्वितीय विश्व युद्ध में जापान का प्रवेश
19. चीन में साम्यवादी सरकार
20. द्वितीय विश्व युद्ध में जापान के पराजय का कारण

संदर्भ ग्रंथ :

(1) बिनाके – सुदूरपूर्व का इतिहास
(2) सत्यकेतु विद्यालंकार – एशिया का इतिहास
(3) दीनानाथ वर्मा – एशिया का इतिहास
(4) क्लाउड – सुदूरपूर्व का इतिहास
(5) के.एल.खुराना – एशिया का आधुनिक इतिहास
(6) बुस – द फार ईस्ट
(7) A.C. Gupta - A History of China
(8) F.H.B. Clyde - The Far East

(9) Goodridge - A Short History of Far East

SEMESTER-II (Optional)
PAPER-IV (C)
WOMEN IN MODERN INDIA
आधुनिक भारत में नारी

इकाई– 1

1. औपनिवेशिक काल में नारी शिक्षा
2. पुनर्जागरण आंदोलन और महिलाएं
3. उन्नीसवीं शताब्दी के नारी संगठन
4. बीसवीं शताब्दी के नारी संगठन

इकाई– 2

5. भारतीय स्वतंत्रता आंदोलन और महिलाएं, 1857 की क्रांति
6. भारतीय स्वतंत्रता आंदोलन और महिलाएं, गांधीवादी आंदोलन
7. भारतीय स्वतंत्रता आंदोलन और महिलाएं, क्रांतिकारी आंदोलन
8. भारतीय स्वतंत्रता आंदोलन और महिलाएं, आजाद हिंद फौज

इकाई– 3

9. स्वतंत्रता के पश्चात् राजनीति और महिलाएं– पंचायत
10. स्वतंत्रता के पश्चात् राजनीति और महिलाएं– विधानसभा से संसद तक
11. मताधिकार और महिलाएं
12. पंचवर्षीय योजनाएं और महिलाएं

इकाई– 4

13. भारतीय संविधान में महिलाओं की स्थिति
14. स्वत त्रोत्तर भारत में महिलाओं की वैधानिक स्थिति
15. जनजातीय समाज में महिलाओं की स्थिति
16. महिलाओं के प्रति हिंसा एवं अपराध

इकाई– 5

17. महिलाएं – कला एवं साहित्य के क्षेत्र में
18. मानवाधिकार एवं महिलाएं
19. स्वतंत्रोत्तर भारत में महिला शिक्षा
20. काम काजी महिलाएं – स्वावलंबन एवं सशक्तिकरण

संदर्भ ग्रंथ :

(1) कमलेश्वर प्रसाद – भारत का इतिहास खंड 1, 2, 3
(2) सुगम आनंद – भारतीय इतिहास में नारी
(3) विपिन चंद्र – आजादी के बाद का भारत
(4) पुरी, दास, चोपड़ा – भारत का सामाजिक, आर्थिक, सांस्कृतिक इतिहास (खंड तीन)
(5) प्रताप सिंह – आधुनिक भारत का सामाजिक, आर्थिक इतिहास
(6) आनंद मूर्ति – भारतीय इतिहास में नारी
(7) गोपा जोशी – भारत में स्त्री असमानता
(8) नीतू केंग – इंडियन वीमेन एक्टीविस्ट
(9) सी.एन.मंगल, यशोदा भट्ट – बीयांड द थ्रेस होल्ड–इंडियन वीमेन ऑन द मूव

(10) सुधा गोस्वामी – भारत की चर्चित महिलाएं
(11) कौरोलिय एम बायर्ली और कारेन रास – महिलायें और संचार माध्यम
(12) साधना आर्य, नवोदिता मेनन आदि (संपादक) – नारीवादी राजनीति संघर्ष एवं मुद्दे
(13) यशोदा भट्ट – वीमेन इन इंडिया इन फिफ्टी इयर्स ऑफ इंडिपेंडेंस
(14) वृंदा करात – भारतीय नारी संघर्ष और मुक्ति

SEMESTER-III

PAPER-I

खण्ड–अ मध्यकालीन भारत (Section -A Medieval India)

सल्तनतकालीन भारतीय राजनय एवं अर्थव्यवस्था (1200 से 1526 ई.)

(INDIAN POLITY AND ECONOMY IN SULTANATE PERIOD (1200-1526 A.D.)

इकाई– 1

1. सल्तनत कालीन इतिहास के स्रोत
2. दिल्ली सल्तनत की स्थापना एवं प्रसार
3. सल्तनत कालीन इतिहास लेखन – विभिन्न विचारधाराएं
4. सल्तनत कालीन राज्य का स्वरूप एवं सिद्धांत

इकाई– 2

5. सल्तनत कालीन केन्द्रीय प्रशासन
6. सल्तनत कालीन प्रांतीय व्यवस्था–इक्ता
7. अलाउद्दीन खिलजी की आर्थिक नीति–बाजार नियंत्रण
8. अलाउद्दीन खिलजी की विजयें–उत्तर भारत, दक्षिण भारत

इकाई– 3

9. मुहम्मद बिन तुगलक की योजनाएं
10. फिरोजशाह तुगलक का प्रशासन
11. सल्तनतकालीन क्षेत्रीय राज्य – उत्तर भारत
12. सल्तनतकालीन क्षेत्रीय राज्य – दक्षिण भारत

इकाई– 4

13. सल्तनतकालीन भूराजस्व व्यवस्था
14. सल्तनतकालीन शिल्प व उद्योग
15. सल्तनतकालीन आंतरिक व्यापार
16. सल्तनतकालीन विदेशी व्यापार

इकाई– 5

17. तैमूर का आक्रमण एवं प्रभाव
18. सल्तनत काल में नगरों का उदय
19. सल्तनत कालीन मुद्राएं एवं बैंकिंग
20. सल्तनत कालीन – कृषि एवं उद्योग

संदर्भ ग्रंथ :

(1) हरिशचंद्र वर्मा – मध्यकालीन भारत भाग – 1
(2) ए.एल. श्रीवास्तव – सल्तनतकालीन भारत
(3) विपिन बिहारी सिन्हा – मध्यकालीन भारत
(4) बी.एन. लूणिया – पूर्व मध्यकालीन भारत
(5) इरफान हबीब – सल्तनतकालीन भारत
(6) एल.पी. शर्मा – मध्यकालीन भारत

(7) हेरम्ब चतुर्वेदी – मध्यकालीन इतिहासकार
(8) सतीश चंद्र – मध्यकालीन भारत–राजनीति, समाज और संस्कृति–आठवीं से सत्रहवीं सदी तक

SEMESTER-III
PAPER-II
खण्ड–अ मध्यकालीन भारत (Section -A Medieval India)
सल्तनतकालीन समाज एवं संस्कृति (1200 से 1526 ई. तक)
(SOCIETY AND CULTURE IN SULTANATE PERIOD (1200-1526 A.D.)

इकाई– 1

1. सल्तनत कालीन समाज – संरचना एवं परिवर्तन
2. सल्तनत कालीन नगरीय समाज – नये सामाजिक वर्गों का उदय
3. सल्तनत कालीन हिन्दू समाज
4. सल्तनत कालीन मुस्लिम समाज

इकाई– 2

5. भक्ति आंदोलन – उदय के लिए उत्तरदायी तत्व
6. सगुण भक्ति की विशेषताएं
7. कृष्ण भक्ति शाखा
8. राम भक्ति शाखा

इकाई– 3

9. निर्गुण भक्ति सम्प्रदाय – कबीर और नानक
10. भक्ति आंदोलन की क्षेत्रीय विशेषताएं
11. भक्ति आंदोलन की भारतीय समाज एवं संस्कृति पर प्रभाव
12. भक्ति आंदोलन का साहित्य पर प्रभाव

इकाई– 4

13. सूफीवाद
14. प्रमुख सूफी सिलसिलें और उनकी विशेषताएं
15. इण्डो–इस्लामिक संस्कृति का उदय एवं विकास
16. सल्तनत कालीन विज्ञान एवं तकनीकी

इकाई– 5

17. सल्तनत कालीन स्थापत्य कला
18. सल्तनत कालीन क्षेत्रीय स्थापत्य कला
19. सल्तनत काल में साहित्य का विकास

संदर्भ ग्रंथ :

(1) बी.के. पंजाबी – मध्यकालीन भारतीय इतिहास
(2) हरिशचंद्र वर्मा – मध्यकालीन भारत भाग–1
(3) रामधारी सिंह दिनकर – संस्कृति के चार अध्याय
(4) बी.एन. लूणिया – पूर्व मध्यकालीन भारत
(5) विपिन बिहारी सिन्हा – मध्यकालीन भारत
(6) प्रताप सिंह – मध्यकालीन संस्कृति
(7) राजबली सिंह – सूफीवाद
(8) एल.पी. शर्मा – मध्यकालीन भारत
(9) ए.एल. श्रीवास्तव – मध्यकालीन संस्कृति

(10) पुरी, दास, चोपड़ा (भाग–2) – भारत का सामाजिक, आर्थिक एवं सांस्कृतिक इतिहास

SEMESTER-III
PAPER-I
खण्ड–ब आधुनिक भारत (Section -B Modern India)
आधुनिक भारत (1757 ई. से 1857 ई. तक) राजनीतिक, प्रशासनिक
(MODERN INDIA 1757 A.D. TO 1857 A.D.) POLITICAL, ADMINISTRATIVE)

इकाई– 1

1. आधुनिक भारतीय इतिहास के स्रोत
2. आधुनिक भारतीय इतिहास लेखन की विचारधाराएं–साम्राज्यवादी राष्ट्रवादी
3. आधुनिक भारतीय इतिहास लेखन की विचारधाराएं–मार्क्सवादी, जनवादी
4. पूर्व औपनिवेशिक भारत की राजनीतिक व्यवस्था

इकाई– 2

5. भारत में यूरोपियों का आगमन
6. कर्नाटक में आंग्ल–फ्रांसीसी प्रतिस्पर्द्धा
7. बंगाल में अंग्रेजी शक्ति का उदय
8. ब्रिटिश साम्राज्य का विस्तार–नीतियां तथा कार्यक्रम

इकाई– 3

9. आंग्ल– मैसूर संबंध
10. आंग्ल– मराठा संबंध
11. आंग्ल–अफगान संबंध
12. आंग्ल– सिक्ख संबंध

इकाई– 4

13. आंग्ल– अवध संबंध
14. भारत की औपनिवेशिक संरचना–प्रशासनिक स्वरूप
15. संवैधानिक विकास – 1773–1784
16. संवैधानिक विकास – 1784–1854

इकाई– 5

17. कंपनी एवं रियासतों के संबंध
18. कंपनी प्रशासन के अंतर्गत पुलिस, लोकसेवा एवं न्याय व्यवस्था
19. उपनिवेशवाद का प्रतिरोध–जनजातीय व कृषक आंदोलन
20. 1857 की क्रांति–विचारधाराएं, कारण, स्वरूप एवं महत्व

संदर्भ ग्रंथ :

(1) एल.पी. शर्मा – आधुनिक भारत
(2) रजनीपाम दत्त – इंडिया टुडे
(3) प्रताप सिंह – आधुनिक भारत का इतिहास

(4) एम.एस. जैन – आधुनिक भारत
(5) सुमित सरकार – आधुनिक भारत का इतिहास
(6) बी.एल. ग्रोवर एवं यशपाल – आधुनिक भारत का इतिहास
(7) एग्नेस ठाकुर – भारत का इतिहास 1757–1857
(8) वीरकेश्वर प्रसाद सिंह – भारतीय राष्ट्रीय आंदोलन एवं संवैधानिक विकास
(9) एस.आर. शर्मा – मेकिंग आफ मार्डन इंडिया
(10) बी.बी. मिश्र – सेंट्रल एडमिनिस्ट्रेशन आफ ईस्ट इंडिया कंपनी
(11) शेखर बंधोपाध्याय – प्लासी से विभाजन तक
(12) विपिन चंद्रा – आधुनिक भारत का इतिहास
(13) वी.डी. महाजन – मार्डन इंडियन हिस्ट्री फ्राम 1707 टू प्रजेन्ट डे
(14) के.सी. चौधरी – हिस्ट्री आफ मार्डन इंडिया
(15) कौलेश्वर राय – आधुनिक भारत 1757–1950

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-III
PAPER-II
खण्ड–ब आधुनिक भारत (Section -B Modern India)
आर्थिक, सामाजिक, सांस्कृतिक (1757 ई. से 1857ई. तक)
(ECONOMIC, SOCIAL, CULTURAL 1757 A.D TO 1857 A.D.)

इकाई– 1

1. पूर्व औपनिवेशिक भारत की आर्थिक व्यवस्था
2. यूरोपीय वाणिज्यवाद का उदय
3. अंग्रेजों की व्यापारिक, वाणिज्यिक नीति
4. कृषि का वाणिज्यीकरण

इकाई– 2

5. ग्रामीण अर्थव्यवस्था – कृषि की स्थिति एवं समस्याएं
6. नवीन भूराजस्व व्यवस्था – स्थाई बंदोबस्त तक
7. नवीन भूराजस्व व्यवस्था– रैयतवाड़ी, महालवाड़ी
8. ग्रामीण ऋण ग्रस्तता, अकाल नीति

इकाई– 3

9. शहरी अर्थव्यवस्था– हस्तशिल्प, उद्योगोंकी स्थिति
10. औद्योगीकरण 1757–1857
11. आंतरिक बाजार और शहरी केन्द्र, विदेश व्यापार
12. धन का निष्कासन

इकाई– 4

13. पूर्व औपनिवेशिक भारत की सामाजिक एवं सांस्कृतिक व्यवस्था
14. भारतीय पुनर्जागरण
15. समन्वयवादी समाज सुधार आंदोलन–बंगाल एवं महाराष्ट्र के संदर्भ में
16. सामाजिक सुधार शासन द्वारा किये गए सुधार कार्य

इकाई– 5

17. प्रतिक्रियावाद – बहावी आंदोलन
18. नवीन सामाजिक वर्गों का उदय
19. शिक्षा का विकास
20. भारतीय प्रेस (1857 तक)

संदर्भ ग्रंथ :

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

(1) एल.पी. शर्मा	– आधुनिक भारत
(2) ए.आर. देसाई	– आधुनिक राष्ट्रवाद की सामाजिक पृष्ठभूमि
(3) रजनी पामदत्त	– इंडिया टुडे
(4) ग्रीवर एवं यशपाल	– आधुनिक भारत का इतिहास एवं नवीन मूल्यांकन (1707–1969)
(5) एस.आर. शर्मा	– मेकिंग आफ मार्डन इंडिया
(6) प्रताप सिंह	– आधुनिक भारत–1, खंड–3
(7) एम.एस. जैन	– आधुनिक भारत का इतिहास
(8) एस.पी. नायर	– सोशल एंड इकॉनामिक हिस्ट्री ऑफ मॉडर्न इंडिया
(9) S.P. Nanda	- Economic and Social History of Modern India
(10) V.A. Narain	- Social History of Modern India
(11) एन्नेस ठाकुर	– भारत का आर्थिक इतिहास (1757–1950)
(12) पुरी, दास, चोपड़ा	– भारत का सामाजिक आर्थिक एवं सांस्कृतिक इतिहास
(13) अतुल भट्टाचार्य	– हिस्ट्री आफ मार्डन इंडिया (1757–1947)
(14) नीलकंठ शास्त्री	– एडवांस हिस्ट्री ऑफ इंडिया
(15) आर.सी. मजुमदार एवं एच.सी. राय	– ऐन एडवांश हिस्ट्री ऑफ़ इंडिया
(16) कौलेश्वर राय	– आधुनिक भारत 1757–1950

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-III

OPTIONAL - I

भारतीय राष्ट्रीय आंदोलन का इतिहास (1857ई. से 1922ई. तक)

(HISTORY OF NATIONAL MOVEMENT (1857 TO 1922 A.D.)

इकाई– 1

1. 1857 के विप्लव के कारण
2. 1857 के विप्लव का स्वरूप एवं परिणाम
3. भारत में राष्ट्रवाद की वैचारिक पृष्ठभूमि
4. कांग्रेस की स्थापना के पूर्व राजनीतिक संगठन

इकाई– 2

5. भारतीय राष्ट्रीय कांग्रेस की स्थापना – अवधारणाएं एवं उद्देश्य
6. कांग्रेस का नरमपंथी युग – विचारधारा एवं कार्यक्रम
7. कांग्रेस में उग्रवाद का उदय – विचारधारा एवं कार्यक्रम
8. नरमपंथी– उग्रवाद संघर्ष

इकाई– 3

9. बंग–भंग एवं स्वदेशी आंदोलन
10. साम्प्रदायिक राजनीति का उदय, मुस्लिम लीग
11. लखनऊ समझौता
12. होमरूल आंदोलन

इकाई– 4

13. गांधीजी का भारतीय राजनीति में प्रवेश एवं उनके नेतृत्व में प्रारंभिक आंदोलन
14. रोलेक्ट एक्ट
15. जलियावाला बाग हत्याकांड और उसका प्रभाव
16. हण्टर कमीशन रिपोर्ट

इकाई– 5

17. 1919 के अधिनियम
18. क्रांतिकारी आंदोलन–प्रथम चरण–महाराष्ट्र, बंगाल, पंजाब एवं अन्य क्षेत्र
19. असहयोग आंदोलन
20. असहयोग आंदोलन का भारतीय राजनीति पर प्रभाव

संदर्भ ग्रंथ :

(1) ताराचंद – भारतीय स्वाधीनता आंदोलन का इतिहास भाग 1 व 2
(2) सुमित सरकार – आधुनिक भारत
(3) पं.सुंदरलाल शर्मा – भारत में अंग्रेजी राज
(4) डॉ. आभा सक्सेना – इंडियन नेशनल मूवमेंट एंड द लिबरलस
(5) ए.आर. देसाई – भारतीय राष्ट्रवाद की सामाजिक पृष्ठभूमि
(6) शर्मा एवं शर्मा – भारतीय राष्ट्रीय आंदोलन एवं राजनैतिक विकास
(7) कौलेश्वर राय – फ्रीडम स्ट्रगल

(8) विपिन चन्द्र – भारतीय स्वतंत्रता संग्राम का इतिहास
(9) बीरकेश्वर प्रसाद सिंह – भारतीय राष्ट्रीय आंदोलन एवं संवैधानिक विकास
(10) रामलखन शुक्ला – आधुनिक भारत का इतिहास
(11) विनोद कुमार सक्सेना – द पार्टीशन ऑफ बंगाल
(12) के.पी. बहादुर – हिस्ट्री ऑफ फ्रीडम मूवमेंट इन इंडिया
(13) योगेन्द्र श्रीवास्तव – हिस्ट्री ऑफ फ्रीडम मूवमेंट 1857–1947
(14) यशपाल एवं ग्रोवर – आधुनिक भारत का इतिहास
(15) कौलेश्वर राय – आधुनिक भारत 1757–1950

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-III

OPTIONAL - II

भारत का सांस्कृतिक इतिहास (प्रारंभ से 1526 ई. तक)

(CULTURAL HISTORY OF INDIA (BEGINING TO 1526 A.D.)

इकाई– 1

1. हड़प्पाकालीन सामाजिक एवं आर्थिक जीवन
2. हड़प्पाकालीन कला एवं स्थापत्य कला
3. आर्यों का मूल निवास संबंधी अवधारणाएं
4. आर्यों का भारत में प्रसार

इकाई– 2

5. ऋग्वेद कालीन समाज एवं संस्कृति
6. उत्तरवैदिक कालीन समाज एवं संस्कृति
7. वेद, उपनिषद, सूत्र, स्मृतिग्रंथ 8. महाकाव्य युगीन संस्कृति

इकाई– 3

9. महाजनपद कालीन समाज एवं संस्कृति
10. जैन धर्म, बौद्ध धर्म
11. मौर्यकालीन समाज एवं संस्कृति
12. भारतीय संस्कृति में अशोक का योगदान

इकाई– 4

13. गुप्तकालीन समाज एवं धर्म
14. गुप्तकालीन कला विज्ञान एवं साहित्य
15. राजपूत कालीन समाज
16. राजपूत कालीन कला एवं स्थापत्य

इकाई– 5

17. सल्तनत कालीन समाज
18. सल्तनतकालीन संस्कृति की विशेषताएं
19. भक्ति आंदोलन
20. सूफी आंदोलन

संदर्भ ग्रंथ :

(1) रामशरण शर्मा – प्राचीन भारत
(2) विमल चन्द्र पाण्डेय – प्राचीन भारत का राजनीतिक, सांस्कृतिक इतिहास
(3) रोमिला थापर – अशोक तथा मौर्य साम्राज्य का पतन
(4) के.एन. शास्त्री – दक्षिण भारत का इतिहास
(5) ए.एल. बाशम – अद्भुत भारत
(6) भारद्वाज – मध्यकालीन भारतीय संस्कृति
(7) जयनारायण पांडे – सिंधु सभ्यता
(8) के.सी. श्रीवास्तव – प्राचीन भारत का इतिहास तथा संस्कृति

(9) शिवशंकर शर्मा – भारतीय संस्कृति
(10) नीरज श्रीवास्तव – मध्यकालीन भारत–प्रशासन, समाज एवं संस्कृति
(11) रामशरण शर्मा – प्रारंभिक भारत का परिचय
(12) कृष्ण मोहन श्रीमाली – धर्म, समाज एवं संस्कृति
(13) रमेन्द्र नाथ नंदी – प्राचीन भारत में धर्म के सामाजिक आधार
(14) राधाकुमुद मुखर्जी – हिन्दू सभ्यता
(15) बी.एन. लूणिया – प्राचीन भारतीय संस्कृति
(16) राजबली – सूफीवाद

SEMESTER-III
OPTIONAL - III
भारतीय संविधान और शासन व्यवस्था
INDIAN CONSTITUTION AND ADMINISTRATIVE SYSTEM

इकाई– 1

1. भारत की संविधान सभा का गठन
2. भारत का संविधा सभा की विभिन्न समितियाँ
3. भारतीय स विधान की प्रस्तावना
4. भारतीय स विधान की प्रमुख विशेषताएं

इकाई– 2

5. भारतीय संविधान के स्रोत
6. मौलिक अधिकार एवं संवैधानिक उपचार
7. नीति निर्देशक तत्व
8. मौलिक कर्तव्य

इकाई– 3

9. राष्ट्रपति–निर्वाचन शक्तियाँ एवं कर्तव्य
10. उपराष्ट्रपति–निर्वाचन शक्तियाँ एवं कर्तव्य
11. प्रधानमंत्री एवं मंत्रि परिषद तथा उनके कार्य
12. संसद का गठन – राज्य सभा एवं लोक सभा

इकाई– 4

13. संविधान संशोधन प्रक्रिया एवं प्रमुख संशोधन
14. आपात कालीन उपबंध
15. महान्यायवादी
16. नियंत्रक एवं महालेखा परीक्षक

इकाई– 5

17. सर्वोच्च न्यायालय
18. संघ लोक सेवा आयोग, निर्वाचन आयोग
19. नीति आयोग एवं राष्ट्रीय विकास परिषद
20. वित्त आयोग

संदर्भ ग्रंथ :

(1) डी.डी. बसु – भारत का संविधान एक परिचय
(2) हिर मोहन जैन – भारतीय शासन और राजनीति
(3) सुशीला कौशिक – भारतीय शासन और राजनीति
(4) सुभाष कश्यप – हमारा संविधान
(5) R.C Agrawal - Indian Political System
(6) A.G. Noorani . Constitutional Question in India
(7) A. S. Narang . Indian Government and Politics
(8) G. Austin . The Indian Constitution
(9) M.V. Paylee . An Introduction to the constitution of India

SEMESTER-III
OPTIONAL - IV
पर्यटन सिद्धान्त
TOURISM THEORY

इकाई– 1

1. पर्यटन का अर्थ एवं परिभाषा
2. पर्यटन की अवधारणा
3. पर्यटन का उद्देश्य एवं महत्व
4. पर्यटन के सिद्धान्त एवं व्यवहार

इकाई– 2

5. पर्यटन संगठन
6. भारतीय पर्यटन संगठन केन्द्रीय
7. प्रान्तीय पर्यटन विभाग

इकाई– 3

8. ट्रैवल एजेंसी– गठन
9. ट्रैवल एजेंसी– कार्य
10. पर्यटन एवं यातायात
11. टिकट एव आरक्षण कार्य

इकाई– 4

12. पर्यटन एवं आवास तथा होटल उद्योग मुद्रा विनिमय
13. अंतर्राष्ट्रीय पर्यटन – पासपोर्ट, वीसा विदेशी संबंधी नियम
14. अंतर्राष्ट्रीय पर्यटन सुविधाएं एवं समस्याएं

इकाई– 5

15. पर्यटन एवं हस्तशिल्प उद्योग
16. पर्यटन एवं कला
17. पर्यटन एवं लोक संस्कृति
18. पर्यटन एवं मेले त्यौहार

संदर्भ ग्रंथ :

(1) जगमोहन नेगी – पर्यटन एवं यात्रा के सिद्धांत
(2) जगमोहन नगी – पर्यटन एवं मार्केटिंग तथा विकास
(3) के.के. दीक्षित – पर्यटन के विविध आयाम
(4) ताज राव – पर्यटन विकास के विविध आयाम
(5) ताज राव – पर्यटन का प्रभाव एवं प्रबंधन
(6) ए.के. भाटिया – टूरिज्म डेवलेपमेंट प्रिंसिपल एंड प्रैक्टिसेज
(7) राम आचार्य – टूरिज्म इन इंडिया

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

PAPER-I

(खंड ब मध्यकालीन भारत) (Section - B Medieval India)

मुगलकालीन भारतीय राजनय एवं अर्थव्यवस्था (1526 से 1750 ई. तक)

(INDIAN POLITIY AND ECONOMY IN MUGHAL PERIOD (1526-1750 A.D.)

इकाई– 1

1. मुगलकालीन इतिहास के स्रोत
2. मुगलकालीन इतिहास लेखन – विभिन्न विचारधाराएं
3. मुगलकालीन राजनय – दैवीय अधिकार का सिद्धांत
4. मुगल शासकों की राजत्व नीति

इकाई– 2

5. मुगलकालीन केन्द्रीय प्रशासन
6. मुगलकालीन प्रांतीय प्रशासन विशेषताएं
7. मनसब एवं जागीर
8. शेरशाह का प्रशासन

इकाई– 3

9. मुगलकालीन दरबारी राजनीति एवं संघर्ष
10. मराठा इतिहास के स्रोत
11. मराठा राज्य की स्थापना एवं विकास
12. शिवाजी का प्रशासन

इकाई– 4

13. मुगलकालीन कृषि अर्थव्यवस्था एवं भू–राजस्व
14. मुगलकाल में शिल्प उद्योग
15. मुगलकालीन आंतरिक व्यापार
16. मुगलकालीन विदेशी व्यापार

इकाई– 5

17. मुगलकाल में नगरों का उदय–नगरीय प्रशासन
18. मुगलकालीन मुद्रा एवं बैंकिंग
19. नए व्यापारिक वर्गों का उदय
20. मुगल काल में कृषि एवं उद्योग में तकनीकी परिवर्तन

संदर्भ ग्रंथ :

1. हरिशचन्द्र – मध्यकालीन भारत – भाग 2
2. सर जदुनाथ सरकार – शिवाजी एंड हिज टाईम्स
3. ए.एल. श्रीवास्तव – मुगलकालीन भारत
4. बी.एन. लुनिया – मुगल साम्राज्य का उत्कर्ष
5. बी.के. पंजाबी – मध्यकालीन भारत का इतिहास
6. हेरम्ब चतुर्वेदी – मुगलकालीन इतिहासकार
7. हेरम्ब चतुर्वेदी – मुगलकालीन राजनय एवं अर्थव्यवस्था
8. पी.पी. सिन्हा – मध्यकालीन भारत

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

PAPER-II

(खंड अ मध्यकालीन भारत) (Section - A Medieval India)

मुगलकालीन भारतीय समाज एवं संस्कृति (1526 से 1750 ई. तक)

(SOCIETY AND CULTURE IN MUGHAL PERIOD (1526-1750 A.D.)

इकाई– 1

1. मुगलकालीन हिन्दू समाज
2. मुगलकालीन मुस्लिम समाज
3. मुगलकालीन समाज में शासक वर्ग की भूमिका
4. मुगलकाल में स्त्रियों की दशा

इकाई– 2

5. मुगलकालीन स्थापत्यकला
6. मुगलंकालीन क्षेत्रीय स्थापत्य कला
7. मुगलकालीन चित्रकला
8. क्षेत्रीय चित्रकला का विकास

इकाई– 3

9. फारसी भाषा एवं साहित्य का विकास
10. हिन्दी साहित्य का विकास
11. संस्कृत साहित्य का विकास
12. उर्दू भाषा एवं साहित्य का विकास

इकाई– 4

13. मुगलकाल में समन्वयवादी संस्कृति का विकास
14. मुगलकाल में संस्कृति के विकास में अकबर का योगदान
15. समन्वयवादी संस्कृति का विघटन और औरंगज़ेब
16. मुगलकाल में नृत्य एवं संगीतकला का विकास

इकाई– 5

17. मुगलकाल में धार्मिक आंदोलन
18. सामंती व्यवस्था का समाज पर प्रभाव
19. मराठा संस्कृति की विशेषताएं
20. मुगलकाल में ईसाई धर्म का आगमन

संदर्भ ग्रंथ :

1. आर्शीवादी लाल श्रीवास्तव — मध्यकालीन भारत
2. हरिशचन्द्र वर्मा — मध्यकालीन भारत – 2
3. बी.एन. लुनिया — मुगल साम्राज्य का उत्कर्ष
4. ए.एल. श्रीवास्तव — मध्यकालीन संस्कृति
5. दिनेश चन्द्र भारद्वाज — मध्यकालीन संस्कृति
6. पुरीदास एवं चोपड़ा — भारत का सामाजिक, सांस्कृतिक एवं आर्थिक इतिहास भाग –2
7. एल.पी. शर्मा — मध्यकालीन भारत

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

PAPER-I

(खंड ब आधुनिक भारत) (Section - B Modern India)

आधुनिक भारत (1858 से 1964 ई. तक) राजनीतिक, प्रशासनिक

(MODERN INDIA 1858 A.D. TO 1964 A.D. (POLITICAL, ADMINISTRATIVE)

इकाई– 1

1. प्रशासनिक परिवर्तन – संवैधानिक सुधारों के संदर्भ में (1858–1892)
2. प्रशासनिक परिवर्तन – संवैधानिक सुधारों के संदर्भ में (1909–1919)
3. प्रशासनिक परिवर्तन – संवैधानिक सुधारों के संदर्भ में (1935–1947)
4. भारतीय गणतंत्र का स विधान

इकाई– 2

5. प्रशासनिकढ़ाचा – स्थानीय स्वाशासन के संदर्भ में
6. प्रशासनिकढ़ाचा – लोकसेवा के संदर्भ में
7. प्रशासनिकढ़ाचा – न्याय व्यवस्था के संदर्भ में
8. प्रशासनिकढ़ाचा – पुलिस प्रशासन के संदर्भ में

इकाई– 3

9. पड़ोसी राज्यों से संबंध – अफगानिस्तान एवं फारस के संदर्भ में
10. पड़ोसी राज्यों से संबंध – नेपाल एवं बर्मा के संदर्भ में
11. देशी रियासतों के साथ संबंध – नीतिगत विस्तार
12. रियासतों का भारतीय संघ में विलीनीकरण

इकाई– 4

13. भारतीय राष्ट्रवाद का उदय – अवधारणाएं एवं मतिविधियां
14. 1919 तक संगठित राष्ट्रवाद की प्रवृत्तियां
15. कृषक, श्रमिक एवं क्रांतिकारी आंदोलन
16. गांधीवादी आंदोलन – विचारधारा, स्वरूप एवं कार्यक्रम

इकाई– 5

17. साम्प्रदायिकता का उदय एवं विकास – मुस्लिम लीग की स्थापना तक
18. साम्प्रदायिकता का विकास – भारत विभाजन तक
19. स्वाधीनता की प्राप्ति
20. भारत की विदेश नीति –गुटनिरपेक्षता

संदर्भ ग्रंथ :

1. एल.पी.शर्मा – आधुनिक भारत
2. रजमी पाम दत्त – इंडिया टुडे
3. प्रताप सिंह – आधुनिक भारत का इतिहास
4. एम.एस. जैन – आधुनिक भारत
5. सुमित सरकार – आधुनिक भारत का इतिहास
6. बी.एल.ग्रोवर एवं यशपाल – आधुनिक भारत का इतिहास
7. एग्नेस ठाकुर – भारत का इतिहास 1757–1857
8. वीरकेश्वर प्रसाद सिंह – भारतीय राष्ट्रीय आंदोलन एवं संवैधानिक विकास
9. एस.आर. शर्मा – मेकिंग ऑफ मॉर्डन इंडिया
10. बी.बी. मिश्र – सेंट्रल एडमिनिस्ट्रेशन ऑफ ईस्ट इंडिया कंपनी
11. शेखर बंधोपाध्याय – प्लासी से विभाजन तक
12. विपन चन्द्र – आधुनिक भारत का इतिहास
13. बी.डी. महाजन – मार्डन इंडियन हिस्ट्री 1707 टू प्रजेन्ट डे
14. के.सी. चौधरी – हिस्ट्री ऑफ माडर्न इंडिया

15. कौलेश्वर राय — आधुनिक भारत 1757–1950

SEMESTER-IV

PAPER-II

(खंड ब आधुनिक भारत) (Section - B Modern India)

आधुनिक भारत (1858 से 1964 ई. तक) आर्थिक, सामाजिक, सांस्कृतिक

(MODERN INDIA 1858 A.D. TO 1964 A.D. (ECONOMIC, SOCIAL, CULTURAL)

इकाई– 1

1. ग्रामीण अर्थव्यवस्था – कृषि की स्थिति
2. अकाल नीति
3. शहरी अर्थव्यवस्था– औद्योगिकीकरण का विकास 1858–1947
4. वृहद पैमाने के उद्योग

इकाई– 2

5. औद्योगिक श्रम, श्रम संघों का विकास व आंदोलन
6. जनसंख्या
7. रेल्वे का विकास एवं भारतीय अर्थव्यवस्था
8. रेलपथ के सामाजिक, आर्थिक प्रभाव

इकाई– 3

9. भूमि सुधार – 1964 तक
10. नियोजित अर्थव्यवस्था–पंयवर्षीय योजनाए
11. योजनाओं के आर्थिक परिणाम

इकाई– 4

12. आर्य समाज, प्रार्थना समाज
13. थियोसोफिकल सोसाइटी, रामकृष्ण मिशन
14. अलीगढ़ आंदोलन
15. निम्न जातीय आंदोलन, सिक्ख सुधार आंदोलन

इकाई– 5

16. ब्रिटिश शासन काल में नारी उत्थान के प्रयास
17. आधुनिक शिक्षा का विकास
18. समाचार पत्रो का विकास
19. स्वास्थ्य एवं विज्ञान – तकनीकी विकास

संदर्भ ग्रंथ :

1. बी.एल.ग्रोवर एवं यशपाल – आधुनिक भारत का इतिहास एक नवीन मूल्यांकन (1707–1969)
2. एल.पी.शर्मा – आधुनिक भारत
3. एस.आर.शर्मा – मेकिंग ऑफ मार्डन इंडिया
4. ए.आर.देसाई – भारतीय राष्ट्रवाद की सामाजिक पृष्ठभूमि
5. आर.सी. दत्त – इकोनामिक हिस्ट्री ऑफ इंडिया
6. विपिन चंद्र – भारतीय स्वतंत्रता संग्राम का इतिहास 1857–1947
7. विपिन चंद्र – आजादी के बाद भारत (1947–2000)
8. सुमित सरकार – आधुनिक भारत
9. एम.ए. जैन – आधुनिक भारत का इतिहास
10. प्रताप सिंह – आधुनिक भारत का सामाजिक आर्थिक इतिहास
11. प्रताप सिंह – आधुनिक भारत, 3 खंड
12. एग्नेस ठाकुर – भारत का आर्थिक इतिहास 1757–1950
13. पुरी दास ठाकुर – भारत का सामाजिक, आर्थिक एवं सांस्कृतिक इतिहास
14. अरूण भट टाचार्य – हिस्ट्री ऑफ मार्डन इंडिया

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

OPTIONAL - I

भारतीय राष्ट्रीय आंदोलन का इतिहास (1922 से 1947 ई. तक)

(HISTORY OF INDIAN NATIONAL MOVEMENT (1922 TO 1947 A.D.)

इकाई– 1

1. स्वराज्य दल
2. साइमन कमीशन का विरोध एवं नेहरू रिपोर्ट
2. सविनय अवज्ञा के समय भारत की राजनीतिक स्थिति
4. सविनय अवज्ञा आंदोलन

इकाई– 2

5. गोलमेज सम्मेलन
6. पूना समझौता एवं श्वेत पत्र
7. प्रांतीय स्वायत्ता का क्रियान्वयन
8. राजनीतिक गतिरोध 1940–45

इकाई– 3

9. क्रांतिकारी आंदोलन द्वितीय चरण
10. भारतीय राजनीति में वामपंथी विचारधारा
11. कृषक एवं जनजातीय आंदोलन
12. श्रमिक आंदोलन

इकाई– 4

13. व्यक्तिगत सत्याग्रह
14. क्रिप्स मिशन
15. भारत छोड़ो आंदोलन
16. भारतीय राजनीति में गांधीजी का योगदान

इकाई– 5

17. भारत विभाजन की योजनाएं
18. केबिनेट मिशन एवं अंतरिम सरकार
19. आजाद हिन्द फौज एव सुभाष चंद्र बोस
20. सांप्रदायिक राजनीति का विकास एवं भारत विभाजन

संदर्भ ग्रंथ :

1. बी.एल. ग्रोवर – आधुनिक भारत का नवीन मूल्यांकन
2. कौलेश्वर राय – आधुनिक भारत
3. सुमित सरकार – आधुनिक भारत
4. बिरकेश्वर प्रसाद सिंह – भारतीय राष्ट्रीय आंदोलन एवं संवैधानिक विकास
5. पुखराज जैन – भारत का स्वतंत्रता संग्राम एवं राजनैतिक विकास
6. डी.सी. गुप्ता – भारत का राष्ट्रीय आंदोलन
7. विपन श्रीवास्तव – भारतीय स्वतंत्रता संग्राम का इतिहास
8. योगेन्द्रा चंद्रा – हिस्ट्री ऑफ फ्रीडम मूवमेंट इन इंडिया
9. यशपाल एवं ग्रोवर – आधुनिक भारत
10. रामलखन शुक्ला – आधुनिक भारत का इतिहास

अटल बिहारी वाजपेयी विश्वविद्यालय, बिलासपुर(छत्तीसगढ़)

सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

OPTIONAL - II

भारत का सांस्कृतिक इतिहास (1526 से 1950 ई. तक)

Cultural History of India (1526 A.D. to 1950 A.D.)

इकाई– 1

1. भारतीय संस्कृति में अकबर का योगदान
2. मुगलकालीन समाज
3. मुगलकालीन स्थापत्य
4. मुगलकालीन चित्रकला

इकाई– 2

5. मुगलकालीन संगीतकला
6. मुगल कालीन साहित्य
7. दक्षिण भारतीय सांस्कृतिक जीवन
8. दक्षिण भारत की कला एवं स्थापत्यकला

इकाई– 3

9. यूरोपियों के आगमन का आर्थिक प्रभाव
10. भारतीय संस्कृति पर पाश्चात्य प्रभाव
11. भारतीय संस्कृति में ईसाई मिशनरियों का योगदान
12. यूरोपीय प्राच्यवादियों का भारतीय संस्कृति में योगदान

इकाई– 4

13. राजा राममोहन राय एवं ब्रह्म समाज
14. आर्य समाज तथा थियोसोफिकल सोसाइटी
15. रामकृष्ण मिशन एवं विवेकानंद
16. मुस्लिम समाज सुधार आंदोलन

इकाई– 5

17. ब्रिटिश भारत में नारी की स्थिति – सामाजिक कुरीतियां
18. ब्रिटिश भारत में नारी सुधार के प्रयास
19. कंपनी शासन काल में शिक्षा का विकास 1857 तक
20. ब्रिटिश शासन काल में शिक्षा का विकास 1858 से 1947

संदर्भ ग्रंथ :

1. ए.एल. श्रीवास्तव – सल्तनतकालीन भारत
2. हरिशचन्द्र वर्मा – मध्यकालीन भारत – भाग – 1 एवं 2
3. राजबली पांडे – सूफीज्म
4. पं. सुन्दर लाल शर्मा – भारत में अंग्रेजी राज
5. डाडवेल – कैम्ब्रिज हिस्ट्री ऑफ इंडिया
6. रोमिला थापर – आधुनिक भारत का इतिहास
7. बी.एन. लुणिया – मुगल साम्राज्य का उत्कर्ष
8. शिवशंकर शर्मा – भारतीय संस्कृति
9. बी.एन. लुणिया – भारतीय संस्कृति
10. पुरी, दास, चोपड़ा – भारत का सामाजिक, आर्थिक सांस्कृतिक इतिहास, खंड 2, 3।

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

OPTIONAL - III

भारत की केन्द्रीय तथा प्रान्तीय शासन व्यवस्था

CENTRAL AND STATE ADMINISTRATIVE SYSTEM OF INDIA

इकाई– 1

1. लोकपाल
2. भाषाएं एवं राजभाषा आयोग
3. राष्ट्रीय अनुसूचित जाति एवं जनजाति आयोग
4. सूचना आयोग एवं सूचना का अधिकार

इकाई– 2

5. राज्यपाल – नियुक्ति, शर्तें एवं शक्तियाँ
6. मुख्यमंत्री एवं मंत्रिपरिषद तथा उनके कार्य
7. विधान परिषद एवं विधान सभा
8. संघ राज्य क्षेत्र

इकाई– 3

9. उच्च न्यायालय
10. अधीनस्थ न्यायालय
11. महाधिवक्ता
12. राज्य लोक सेवा आयोग

इकाई– 4

13. नौकरशाही का विकास
14. पंचायती राज संस्थाएं
15. नगरीय स्वायत्त शासन व्यवस्था
16. शासन में दबाव समूह

इकाई– 5

17. राज्य के मुख्य सचिव एवं उनकी प्रशासन में भूमिका
18. राज्य में कानून व्यवस्था एवं पुलिस प्रशासन
19. संभाग एवं संभागायुक्त, उनके कार्य तथा शक्तियां
20. जिला एवं जिला दंडाधिकारी, उनके कार्य तथा शक्तियां

संदर्भ ग्रंथ :

(1) डी.डी. बसु – भारत का संविधान एक परिचय
(2) हरिमोहन जैन – भारतीय शासन और राजनीति
(3) सुशीला कौशिक – भारतीय शासन और राजनीति
(4) सुभाष कश्यप – हमारा संविधान
(5) R.C Agrawal - Indian Political System
(6) A.G. Noorani - Constitutional Question in India
(7) A. S. Narang - Indian Government and Politics
(8) G. Austin - The Indian Constitution
(9) M.V. Paylee - An Introduction to the constitution of India

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सेमेस्टर पाठ्यक्रम

एम.ए. इतिहास

SEMESTER-IV

OPTIONAL - IV

पर्यटन सिद्धान्त एवं व्यवहार इतिहास के संदर्भ में

TOURISM THEORY AND PRINCIPLES IN REFERENCE OF HISTORY

इकाई– 1

1. पर्यटन का इतिहास से संबंध
2. पर्यटन का संस्कृति से संबंध
3. पर्यटन विकास के कारक

इकाई– 2

4. पर्यटन उद्योग
5. पर्यटन विपणन
6. पर्यटन और पर्यावरण

इकाई– 3

7. पर्यटन में राष्ट्रीय उद्यानों का महत्व
8. भारत में प्रमुख राष्ट्रीय उद्यान
9. छत्तीसगढ़प्रमुख राष्ट्रीय उद्यान

इकाई– 4

10. उत्तर भारत के प्रमुख ऐतिहासिक पर्यटन स्थल
11. दक्षिण भारत के प्रमुख ऐतिहासिक पर्यटन स्थल
12. पूर्वी भारत के प्रमुख ऐतिहासिक पर्यटन स्थल
13. पश्चिमी भारत के प्रमुख ऐतिहासिक पर्यटन स्थल

इकाई– 5

14. छत्तीसगढ़ के प्रमुख ऐतिहासिक पर्यटन स्थल
15. छत्तीसगढ़ के प्रमुख धार्मिक पर्यटन स्थल
16. छत्तीसगढ़ के प्रमुख प्राकृतिक पर्यटन स्थल
17. छत्तीसगढ़में पर्यटन की सुविधाएं एवं समस्याएं

संदर्भ ग्रंथ :

1. जगमोहन नेगी – राष्ट्रीय संस्कृति, संपदा, सांस्कृतिक पर्यटन एवं पर्यावरण
2. रामआचार्य – टूरिज्म एंड कल्चरल हेरीटेज ऑफ इंडिया
3. ताज रावत – पर्यटन का प्रभाव एवं प्रबंधन
4. शिवाकांत बाजपेयी – सिरपुर – पुरातत्व एवं पर्यटन
5. पर्यटन विभाग – भारत शासन एवं छत्तीसगढ. शासन द्वारा प्रकाशित

बिलासपुर विश्वविद्यालय, बिलासपुर (छत्तीसगढ़)

SEMESTER SYLLABUS

M.A. ECONOMICS

SCHEME OF EXAMINATION AND DISTRIBUTION OF MARKS

At post graduate level candidate required to study 16 compulsory papers and 4 optional papers during 4 Semesters. There shall be 04 compulsory papers and 01 optional paper in I, II, III & IV semester.

Note: It is compulsory for the candidate to qualify first question paper of any one group of the optional paper in semester-I. Similarly one has to qualify the second question paper of the same group in semester-II. In the same way in semester-III & IV it is compulsory for the candidate to qualify both the question paper of any other group.

SEMESTER-I

Paper No.	Title of the Paper	Internal Assessment	Term End Exam	Total Marks
1.	Micro Economic Analysis	20	80	100
2.	Quantitative Methods	20	80	100
3.	Indian Economic Policy	20	80	100
4.	International Trade & Finance	20	80	100
OPTIONAL (Choose Any one Group)				
5.	Group A 1. Industrial Economics	20	80	100
5.	Group B 1. Labour Economics	20	80	100
5.	Group C 1. Demography	20	80	100
5.	Group D 1. Agriculture Economics	20	80	100
5.	Group E 1. Computer Application in Economic analysis	20	80	100
			TOTAL	**500**

SEMESTER-II

Paper No.	Title of the Paper	Internal Assessment	Term End Exam	Total Marks
1.	Micro Economic Analysis	20	80	100
2.	Research Methodology and Computer Application	20	80	100
3.	Indian Economic Policy	20	80	100
4.	International Trade & Finance	20	80	100
OPTIONAL (Choose Any one Group)				
5.	Group A 2. Industrial Economics	20	80	100
5.	Group B 2. Labour Economics	20	80	100
5.	Group C 2. Demography	20	80	100
5.	Group D 2. Agriculture Economics	20	80	100
5.	Group E 2. Computer Application in Economic analysis	20	80	100
			TOTAL	**500**

बिलासपुर विश्वविद्यालय, बिलासपुर (छत्तीसगढ़)

SEMESTER SYLLABUS

M.A. ECONOMICS

SEMESTER-III

Paper No.	Title of the Paper	Internal Assessment	Term End Exam	Total Marks
1.	Macro Economic Analysis	20	80	100
2.	Public Economics	20	80	100
3.	Economics of Growth	20	80	100
4.	Environmental and Welfare Economics	20	80	100
OPTIONAL (Choose Any one Group)				
5.	Group A 1. Industrial Economics	20	80	100
5.	Group B 1. Labour Economics	20	80	100
5.	Group C 1. Demography	20	80	100
5.	Group D 1. Agriculture Economics	20	80	100
5.	Group E 1. Computer Application in Economic analysis	20	80	100
			TOTAL	500

SEMESTER-IV

Paper No.	Title of the Paper	Internal Assessment	Term End Exam	Total Marks
1.	Macro Economic Analysis	20	80	100
2.	Public Economics	20	80	100
3.	Economic Development and Planning	20	80	100
4.	Economics of Social Sector	20	80	100
OPTIONAL (Choose Any one Group)				
5.	Group A 2. Industrial Economics	20	80	100
5.	Group B 2. Labour Economics	20	80	100
5.	Group C 2. Demography	20	80	100
5.	Group D 2. Agriculture Economics	20	80	100
5.	Group E 2. Computer Application in Economic analysis	20	80	100
			TOTAL	500
			Grand Total	2000

SEMESTER I
PAPER- I
(COMPULSORY)
MICRO ECONOMIC ANALYSIS

UNIT– I Basic Economic Problems, Deductive and inductive methods of analysis, Elasticity of demand (Price, Cross, Income) elasticity of supply, Theories of demand.

UNIT – II Utility, Indifference curve Income and Substitution effects Slutksy theorem, Compensated demand curve and their application.

UNIT–III Revealed Preference theory, Revision of demand theory of hicks, Consumer's surplus.

UNIT – IV Production function – Short period and long period, law of variable proportion and return of scale Isoquants – least cost combination of inputs, Economics of scale, elasticity of substitution.

UNIT – V Euler's Theorem, Game Theory Technical Progress and production function Cob- Douglas, Cost and Revenue analysis.

SEMESTER I
PAPER- II
(COMPULSORY)
QUANTITATIVE METHODS

UNIT– I Basic Concept – formulation of a linear programming problem its structure and variables, nature of feasible, basic and optional solution symmetrical and symmetrical distribution, measurement of Skewness-Karl Pearson's coefficient of Skewness, Blowley's coefficient of Skewness.

UNIT– II Simple Correlation, Measurement of correlation, Karl Pearson's coefficient of correlation, Partial and multiple coefficient of Correlation, Spearman's Coefficient of correlation, Interpretation of coefficient of correlation.

UNIT– III Regression analysis, regression and correlation, regression lines and regression coefficient, regression equations multiple regression analysis (up to three variables) standard error of the estimates, Inter Pollution and extrapolation, Method of fitting a parabolic curve, Newton's method of advancing difference, direct binomial expansion method and Lagrange's method.

UNIT– IV Probability, meaning and definition, Permutation and combination, Types of events, Measurements of Probability– addition and multiplication theorem, conditional probability.

UNIT– V Index Number, Meaning importance, points to remember while constructing index number, chain index number, cost of living index number, Fishers ideal index number Reversibility test– time Reversibility & factor Reversibility.

SEMESTER- I
PAPER- III
(COMPULSORY)
INDIAN ECONOMIC POLICY

UNIT – I GDP and National Income of India – Components and structure of GDP and national Income, Role of Primary, Secondary & Tertiary Sectors in GDP of India, National income and per Capita Income, Growth rates of GDP and per Capita income, saving Investment and Capital Formation Rates in India.

UNIT – II Economic Development and its Determinants – Approaches to economic Development and its measurement sustainable development; Role of State Market and other institution, Indicators of development PQLI, Human Development Index (HDI) gender Development Indices.

UNIT– III Planning in India- Objectives and strategy of planning, Failure and achievements of Plan, Developing grass-root organization for development Panchayat, NGO's and pressure groups.

UNIT– IV Demographic Features, Poverty and equality, Broad demographic features of Indian population, Rural- Urban Migration, Urbanization and civic annuities, poverty and Inequality.

UNIT– V The agriculture sector, institution Structure– Land reforms in India, Technological change in agriculture– input and output, agriculture finance policy, Agriculture marketing and warehousing, issues in food security policies for sustainable agriculture.

SEMESTER I
PAPER- IV
(COMPULSORY)
INTERNATIONAL TRADE & FINANCE

UNIT – I Theory of International trade– Meaning and distinguishing features of interregional and international trade, Difference and similarities between inter-regional and international trade, Smith's theory of absolute advantage, Ricardo's theory of comparative cost and Haberler' support unity cost theory.

UNIT – II Mill's Theory of reciprocal demand, offer curve analysis, Hecksher– Ohlin theory of international trade, factor price equalization, Stopler- Samuelson and Rybczynski theorems.

UNIT– III Measurement of gains from trade and their limitations, The terms of Trade –Concept, Determination of terms of trade, Factor affecting terms of trade, Terms of trade and Economic development, Terms of Trade and welfare implications, Trade as an engine of economic growth.

UNIT– IV The theory of interventions (Tariff, Quotas and non- tariff barriers) Economic effects of tariff Quotas on national income, output, consumption, Price employment, Terms of trade, and income distribution, Dumping– Type, objective and effects of dumping, current incidence of dumping in India and its impact on our economy, anti-dumping measure.

UNIT– V Meaning and components of balance of Payment (BOP), Equilibrium and disequilibrium in the BOP, measures to correct the adverse BOP, Marshall –Lerner's conditions under devaluation, expenditure switching policies and direct control.

SEMESTER II
PAPER- I
(COMPULSORY)
MICRO ECONOMIC ANALYSIS

UNIT– I Price and output determination– perfect competition – short run and long run, Equilibrium of the firm and industry, monopoly – price and output equilibrium under monopoly, price discrimination, monopoly control and regulation.

UNIT– II Monopolistic competition– General and Chamberlin approaches to equilibrium and selling cost, oligopoly- non collusive (Curnot, Bertrad, Kinked Demand Curve) and collusive (Cartels mergers & Price leadership) Baumols sales revenue maximization model, Baines limits pricing theory.

UNIT– III Distribution- Marginal Productivity theory of distribution, Modern Theory of Distribution, Rent- Recardian and modern theory, Theory of interest and IS-LM Curve model.

UNIT– IV Theory of wages-wage determination under perfect and imperfect competition, Theories of profit, risk uncertainty and innovation theory, Welfare economics and general Equilibrium-Pigouvian welfare economics, Pareto optional condition.

UNIT – V Social welfare function, compensation principle, theory of second best – Arrow's impossibility theorem, partial and general equilibrium, walrasian excess demand and inputs output approaches to general equilibrium.

SEMESTER II
PAPER- II
(COMPULSORY)
RESEARCH METHODOLOGY AND COMPUTER APPLICATION

UNIT– I Association of attributes, Meaning and types of association, consistency of data, methods of determination association – method of comparison of observed and expected frequency, method of comparison of proportion, coefficient of association using Yule's method. Time series analysis, Short period oscillation, Trend, Semi average method, Moving average method, Method of least squares, Graphical presentation.

UNIT– II Research methodology and research methods, Research meaning, types and motivation of research, main stages of statistical research, primary and secondary data, methods of collecting primary data, secondary data; different sources, precautions while constructing questionnaire.

UNIT– III Sampling and sample design, census and sample methods, methods of sampling: random sampling methods and non random sampling methods, size of sample, merits and limitations of sampling, classification, types of classifications, types of classifications, tabulation of data parts of a table, types of tables.

UNIT– IV Hypothesis, meaning and types of hypothesis, procedure of test of significance, student's "T" test, Chi-square test and F ration test, Practical problems related to significance of the difference between small samples.

UNIT– V Computer, What is computer, Different parts of computer, Hardware and software, Types of computer, Main characteristics of a computer, Role of Computer in economic research.

SEMESTER II
PAPER- III
(COMPULSORY)
INDIAN ECONOMIC POLICY

UNIT– I Industrial Sector, Industrial Policy, Public sector enterprises and their performance, Problem of sick units in India, Privatization and disinvestment debate growth and pattern of industrialization.

UNIT– II Public Finances & Banking, Fiscal federalism: Centre – state financial relation: Finances of central government, Finances of state government; Fiscal sector reforms in India, Review of monetary policy of RBI.

UNIT– III External Sector & Economic Reforms- Issues is export – import policy and FEMA, Exchange Rate policy foreign capital and MNCs in India, the Progress of trade reforms in India.

UNIT– IV Balanced Regional Development indicators of regional, imbalance courses of Economic backwardness and regional imbalances

UNIT– V WTO and its Impact on different sector of economy, Economic, Reforms Rational of internal and external reforms, Budget (Country and states), How to Prepare a budget of central and state Government

SEMESTER II
PAPER- IV
(COMPULSORY)
INTERNATIONAL TRADE & FINANCE

UNIT– I Theories of Exchange rate – Equilibrium Exchange rate free market theory of exchange rate, Concept of foreign exchange rate, the purchasing power parity theory, balance of payments theory, spot and forward exchange rates, fixed and flexible exchange rates, their merits & demerits.

UNI – II Emerging international monetary system, Reform of international monetary system in India and developing countries, Functions, achievements and failure of WTO (TRIPS, TRIMS) UNCTAD, IMF, World Bank.

UNIT– III Asian Development Bank, World Bank and India, European Economic Community, Rational and Economical progress of SAARC and ASEAN regions.

UNIT– IV Theory of short term and long term capital movement and international trade-I port folio investment and international trade, 2. FDI & FII international trade, Merits & demerit of long term capital movement, Global financial crisis and global recovery.

UNIT– V Trade Problems and trade policies in India after reforms, Recent change in the direction and composition of trade and their implications, impact of trade reforms since 1991, instruments of export promotion, Recent import & export policies in India, Problems of India's international debt.

SEMESTER III
PAPER- I
(COMPULSORY)
MACRO ECONOMIC ANALYSIS

UNIT– I Definitions and concepts of National Income (NI) and national product, methods of measurements of NI and difficulties in the measurement of NI, Different forms of national income accounting, social accounting, input–output accounting, NI and welfare.

UNIT – II Consumption– Marginal and average propensity to consume, Keynes Psychological laws of consumption, determinants of consumption function, Income consumption relationship-absolute income hypothesis, Duisenberg's relative hypothesis, Permanent Income hypothesis and life cycle hypothesis.

UNIT – III Meaning and types of investment, determinants of investment, marginal efficiency of capital investment, saving and investment equality, multiplies, accelerator, super multiplier, employment, Theory– Classical theory, Keynesian theory of income and employment, Comparative Study

UNIT – IV Demand for Money– Fundamental equation of Keynes post Keynesian approach to demand for money– Patinkin, Boumol's, James Tabin, Friedman, Gurley & Shaw's approaches.

UNIT – V The Product market equilibrium, the money market equilibrium, General Equilibrium of product and money market, changes in general Equilibrium.

SEMESTER III
PAPER- II
(COMPULSORY)
PUBLIC FINANCE

UNIT – I Role of Government in organize society, Principles of maximum social advantage taxation– different forms, principals of taxation, Shifting, effects and incidents of taxation, Impact of tax under laws of returns and perfect competition.

UNIT – II Indian tax System, Indirect & direct tax, corporate tax, personal income tax, estate duty, central excise, custom duties, taxes on land and agriculture, value added tax, MODVAT, Service tax, taxable capacity, tax reforms in India.

UNIT – III Public expenditure- Different forms of expenditure, structure and growth of public expenditure in India, trends in central govt. expenditure, economic effects of public expenditure on production and distribution, public expenditure and economic growth.

UNIT – IV Public debt– Different source of public debt, Redemption of public debt, principles of public debt management, Growth of Public debt in India

UNIT – V Budget– budget process in India, objectives of budget, kinds of budget– traditional budget, performance budget, zero based budget, out come budget, gender budget, budget theory–classical view point, balance budget, modern view point, imbalance budget.

SEMESTER III
PAPER- III
(COMPULSORY)
ECONOMICS OF GROWTH

UNIT – I Economic Growth: Economic growth and development, measurement of economic growth, Economic growth model vicious circle of poverty, Physical Quality of life index, Human development index, UNDP Human development report 2010, inclusive growth.

UNIT – II The concept of capital output ratio, input– output analysis, project evaluation and cost-benefit analysis, Methods of project evaluation.

UNIT – III Theories of Development: the Marxian model, The Schumpeterian model, Keynesian Model, theory of development, mahalanobis four sector model.

UNIT – IV Theories of development Harrod- Domar Model: Arthur Lewis Model unlimited supply of labour, Ranis & Fie Mode, Kaldor Model of distribution.

UNIT – V John Robinson model, Meads New- Classical model Hicks and Hayek model, Solow model of long-run growth.

SEMESTER III
PAPER- IV
(COMPULSORY)
ENVIRONMENTAL AND WELFARE ECONOMICS

UNIT – I Welfare Economics - Definition of welfare economics, Criterion of social welfare, Cardinal Criterion, Pareto Optimality Criteria, Kaldor– Hicks Compensation Criterion, The Bergson Criterion, the problem of second best.

UNIT – II Social welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods, market failure & public goods.

UNIT – III Environmental Economics– Beneficiation of Environmental Economics, Relation between environmental Economics and economics, Environmental Economics and eco logical economics, environmental and resource economics, important issues in environmental Economics, Macroeconomic policy and environment.

UNIT – IV Theories of Externalities– Economies and diseconomies, External Cost, Marginal social cost, Marginal private cost, Pigeons taxes and subsidies.

UNIT – V Environmental value– Use value, option value and non use value, International carbon tax, environment and W.T.O.

SEMESTER IV
PAPER- I
(COMPULSORY)
MACRO ECONOMIC ANALYSIS

UNIT – I **Supply for Money**

Quantity Theory of Money– Fisher's and cash balance (Cambridge) approach, definition of money supply, determinants of money supply, RBI approach to money supply, budget deficits and money supply, High Powered money, control of money supply.

UNIT – II Concept of inflation, semi and full inflation, Demand pull and cost push Inflation, theory of structural inflation, causes & effects of inflation, Stagflation, control of inflation, The Philips curve analysis.

UNIT – III **Business cycles-** main features of business cycles, Types of Business cycle, Theories of Business cycles, Hawtrey's monetary theory of trade cycle, Schumpeter's Keynes Hicks, Samuelson's, Friedman, Kaldor model of trade cycle, Control of business cycle.

UNIT – IV **Monetary policy–** Meaning of monetary policy, instrument of monetary policy, Objective of Monetary policy, limitations of monetary policy, monetary policy and economic development, new classical macro economics.

UNIT – V **International Monetary System & Fiscal Policy-** International Monetary system, International Liquidity problem, SDR & New International Economic Order, Meaning & objectives of Fiscal Policy, instruments of fiscal Policy.

SEMESTER IV
PAPER- II
(COMPULSORY)
PUBLIC ECONOMICS

UNIT – I Fiscal federalism in India, principles of fiscal federalism, finance commission report, vertical and horizontal imbalance

UNIT – II Fiscal Policy– Objectives of Fiscal policy, theory of Fiscal Policy, Policy in under developed countries, Economic Stability and fiscal policy and full employment, Fiscal policy and economic development: A Study in Development finance.

UNIT – III Federal finance – Principle of federal finance in India, Centre–state financial relation, resource transfer from centre to state, Godgil formula.

UNIT – IV Analysis of central & Chhattisgarh Govt. budget, Taxable and non taxable income of Chhattisgarh, Structure and growth of public expenditure in Chhattisgarh.

UNIT – V Financial responsibilities and budget management Act, Performance of the Chhattisgarh Govt. Budget, Plan & Non plan, Expenditure in Chhattisgarh.

SEMESTER IV
PAPER- III
(COMPULSORY)
ECONOMIC DEVELOPMENT & PLANNING

UNIT– I Economic Planning: Objective, achievements and failure of Indian Plans, Resource mobilization in Indian plan, Strategy of Indian Plan, Saving capital formation and overall growth rate, Eleventh five year plan (2007-12) Midterm appraisal of eleventh five year plan.

UNIT– II Approaches to development – Vicious circle of poverty, Big-Push theory, theory of critical minimum efforts, balanced and unbalanced growth.

UNIT– III Investment criteria in economic development, The social marginal productivity criteria, the capital turnover criteria, The Re-investment criterion, Time series criterion Fiscal.

UNIT–IV Fiscal and monetary policy, human capital formation in developing countries, Economic crises in developed and developing countries with special reference to economic development

UNIT– V Problems of development, measuring poverty of world and India, Income inequalities, unemployment, the choice of techniques, sustainable Development, role of state in economic development, problem of price–rise in India.

SEMESTER IV
PAPER- IV
(COMPULSORY)
ECONOMICS OF SOCIAL SECTOR

UNIT– I Pollution– Classification of pollution, Control of pollution, Air pollution control, water pollution control, pollution control strategies, cost benefits analysis of pollution environment and pollution.

UNIT– II Environmental protection, Environmental laws, Protection, Environment and development, Sustainable development, population growth and environmental issues-global warming, climate change, green house effect.

UNIT– III Resource – Classification of Resource, Renewable Resource, Non-renewable, optimum use of resource, land resource, forest resources, social forestry, peoples participation in the management of common and forest land energy efficiency and environment energy taxation, atomic & Solar Energy.

UNIT– IV Education– Economics of education, Expenditure on education, Productive expenditure on education, productivity of education, the return education, Human capital Vs. Physical capital, Educational reforms and Right the Education Act.

UNIT– V Health Economics, Determination of health care, malnutrition, the concept of Human life, Inequalities in Health-Class and Gender, Prospective HDI GDI, GEM and HPI.

SEMESTER – I / III
GROUP- A
(OPTIONAL)
1. INDUSTRIAL ECONOMICS

UNIT – I Framework and Problems of Industrial Economics– Concept and organization of a firm ownership, Control and objectives of the firm, passive and active behavior of the firm

UNIT – II Market Structure– Seller's concentration Product differentiation; Entry conditions; Economics of scale; Market structure and profitability; Market structure and innovation; Theories of industrial location; Weber and Sergeant Florence Factors affecting location.

UNIT – III Market Performance– Growth of the firm– Size and growth of a firm; Growth and profitability of the firm; Constraints on growth; Productivity, efficiency and capacity utilization– Concept and measurement, Indian situation.

UNIT – IV Indian industrial Growth and Pattern– Classification of industry, Industrial policy in India– Role of Public and private sectors, Recent trends in Indian industrial growth, MNCs and transfer of technology.

UNIT – V Liberalization and Privatization– Regional Industrial growth in India, Industrial economic concentration and remedial measures, issues in Industrial proliferation and environmental preservation, Pollution control policies.

SEMESTER – I / III
GROUP- B
(OPTIONAL)
1. LABOUR ECONOMICS

UNIT – I Labour Market– Nature and characteristics of labour market, Analysis classical, new classical. Analysis of demand and supply, labour forces, demand for labour relating to choice of technology.

UNIT – II Supply of labour in relation to growth of labour force– Rationalization, methods of recruitment and placement, Employments revise organization in India.

UNIT – III Employment– Employment and development relationship poverty and unemployment-concept, Types and measurement, particularly in India, Causes of unemployment issues relating to employment rationalization.

UNIT – IV Technological change and modernization on employment in organized. Private industry, public sector and employment in agriculture sector

UNIT – V Wage determination– Various classical, neo classical and bargaining theories of wage determination, various concepts of minimum wages and fair living, Problem of implementation of minimum wages.

SEMESTER – I / III
GROUP- C
(OPTIONAL)
1. DEMOGRAPHY

UNIT – I Demography– Meaning, Scope and importance of demography sources of demographic data. Tools of demography analysis, Measurement of population growth and population pyramid.

UNIT – II Theories of population – Malthus theory, Socio–culture and economic theories of population, Biological theories of population, Theory of optimum population, Theory of demographic transition.

UNIT – III Fertility– Meaning and definition of fertility, Measurement of fertility – child woman ratio, crude birth rate, corrected birth rate, General fertility rate.

UNIT – IV Age specific fertility rate, Total fertility rate, Gross reproduction rate, and Net reproduction rate, calculation of fertility rates, determination of fertility Trends fertility in India.

UNIT – V Mortality and morbidity– Importance of mortality data causes of death, Meanings of morbidity, Differentials in mortality and morbidity.

SEMESTER – I / III
GROUP- D
(OPTIONAL)
1. AGRICULTURE ECONOMICS

UNIT – I Nature and scope of Agriculture economics, Traditional and modern agriculture, Role of agriculture in economic development, Problem in rural industrialization.

UNIT – II Development of agro– based industries, between agriculture and industry, Green revelation, Agricultural Production, Production function analysis, cost concept in agriculture product, form budgeting,

UNIT – III Resource use and efficiency in agricultural sector, Land use, Principles of land utilization, land use, Principles of land utilization, land distribution, Land values and rent, Land reform measures and performance, Land tenures and farming system.

UNIT – IV Problem of marginal and small farmers, Rural Labour Supply, Mobility of labour and labour market in agriculture sector

UNIT – V Nature of employment in rural sector Agriculture wages in India. Male – Female wage difference in agriculture.

SEMESTER – I / III
GROUP- E
(OPTIONAL)
1. COMPUTER APPLICATION IN ECONOMIC ANALYSIS

UNIT – I Introduction to commuter and peripherals: Basic components of computer CPU input–device, Keyboard, Mouse and Scanner, Video display, Printer and Plotters.

UNIT – II Data storage and retrieval, hard disk, floppy disk and CD ROM: Types of computers and their applications, computers networking and resources sharing hardware, Software and firmware.

UNIT – III Examples and techniques in programming languages elementary Knowledge only, Data processing, Techniques and algorithms concepts of data record and file. Types of data and data structure, data analysis, file handling and operations like opening.

UNIT – IV Appending and cascading, closing and attribute control, data storage and retrieval, data Operations algorithms like sorting, merging, joining and bifurcation database and operation on database, DBMS and RDBMS.

UNIT – V Statistical Processing Techniques and Methods series, tables, Graphs and object time and frequency series,

SEMESTER – II / IV
GROUP- A
(OPTIONAL)
2. INDUSTRIAL ECONOMICS

UNIT– I Industrial Finance – Owned external and other components of funds; Role, nature, volume and types of institutional finance – IDBI, IFCI, SFCs, SIDC. Commercial banks etc

UNIT– II Financial Statement– balance sheet, profit and loss account, assessment of financial soundness

UNIT– III Project Appraisal-Cost– Benefits analysis– Net Present Value (NPV) and internal rate of return (IRR) criteria – balancing private and social returns.

UNIT– IV Industrial Labour – Structure of industrial labour, Employment dimensions of Indian industry; Industrial legislation; Industrial relations; Exit policy and social security; Wages and problem of bonus – labour market reforms.

UNIT– V Current Problems of selected Industries– Iron and Steel, Cotton textiles, jute, sugar, coal, cement and engineering goods, development of small–scale and collage industries in India.

SEMESTER – II/ IV
GROUP- B
(OPTIONAL)
2. LABOUR ECONOMICS

UNIT– I Wage determination by Qatar- urban & rural, Organized and unorganized. Wages and inflation, Productivity and wage relationship, Profit sharing scheme, Causes of wage differentials in terms of firm, occupation and region.

UNIT– II Industrial Relation– Industrial Relation and trade Unions Industrialization and emergence of trade unionism, Growth structure and pattern of trade unionism Achievements and failures of trade union movement.

UNIT– III Causes of industrial disputes, Step to achieve industrial peace, Method of settlement of industrial disputes collective bargaining, Conciliation arbitration role of judicial activism, labour legislation in India, Indian labour law and practices in relation to international labour standard.

UNIT – IV State and labour in India– State and social security of labour, concept of social security and its evolution social assistance, Review and appraisal of state policies with respect to social security and labour welfare in India.

UNIT – V Special problem of labour, Child labour, Female labour, discrimination and genderbrias in treatment of labour, Labour market reform– exit policy need for safety nets, Measures impairing, Flexibility in labour markets, Social Insurance, Second National commission of labour, globalization and labour markets.

SEMESTER – II / IV
GROUP- C
(OPTIONAL)
2. DEMOGRAPHY

UNIT – I Measurement of mortality, crude death rate, age- specific death rate, Infant mortality rate, Standardized death rate and maternal mortality rate, calculation of mortality rates.

UNIT – II Trends in mortality in India, life table, Migration and urbanization, Population projection, growth of population in India, Population and economic development.

UNIT– III Population explosion in India, Demographic characteristics of developing countries, Population policy of India.

UNIT – IV Women Empowerment – Economics status, Women in decision making, Women and labour market, Evolution of population policy in India– The shift in policy from population control to family welfare, to women empowerment.

UNIT – V Family planning strategies and their outcomes, the new population policy, Tasks before the National Population Commission.

SEMESTER – II / IV
GROUP- E
(OPTIONAL)
2. COMPUTER APPLICATION IN ECONOMIC ANALYSIS

UNIT– I Regression methods and technique regression analysis data validation, trends and cycle city forecasting system modeling and description;

UNIT– II System equation, specification, error and correction strategies, statistical modeling and descriptive statistic, distribution functions, regression statistics.

UNIT– III I.T. application commerce, Online Banking ATN's Electronic stock, Exchange electronic trading data sharing and decimation, electronic transition, documents delivery, authentication and validation transaction, processing.

UNIT– IV I.T. Application to commerce electronic trading and marketing, Online shopping and malls, B2B, B2C, and G2B, models and their applications.

UNIT – V Document and transaction security and digital signature, integrated transition on mobile platforms.

SEMESTER – II / IV
GROUP- D
(OPTIONAL)
2. AGRICULTURE ECONOMICS

UNIT– I Rural finance: Rural Finance– role of rural capital and rural credit, rural capital and capital formation, characteristics and source of rural credit, Institutional and non institutional rural credit, Rural bank, Regional Rural banks and rural credit co-operative societies.

UNIT– II Agriculture price Agriculture market, behavior of agriculture price, agriculture, Markets and agriculture marketable surplus, Taxation, crop insurance, state policy and agriculture price policy.

UNIT– III Agricultural Growth in India: Agricultural growth in India– recent trends, interregional variation in growth of agriculture product, cropping pattern, factors affecting productivity, pricing of input, role of subsidies, role of technology and input of irrigation in agricultural sector.

UNIT– IV Problem and prospects of Globalization and W.T.O. in India, Agricultural commodities, Infrastructure and economic development, the structure of Transportation costs.

UNIT– V Demand for transportation, cost function in the transport Sector, Telephone utilities, role of postal services, Demand for energy, energy conservation, renewable and non-conventional sources of energy.