

Paper title [CONCEPTS : THEORIES AND INSTITUTIONS]

Paper number

Group Paper - 1

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

PAPER –I – CONCEPTS : THEORIES AND INSTITUTIONS

- 1) Introduction, definitions, scope and importance of Political Science.
- 2) Different approaches to the study of political science Traditional and Modern.
- 3) Relation with other Social Sciences: History, Economics, Public Administration, Sociology and Ethics.
- 4) Society – State – Nation.
- 5) The theories of origin of the state : Divine Right , Social contract and evolutionary .
- 6) Sovereignty: Monism and pluralism.
- 7) Law, Liberty and Equality:
 - a) Law: Source of Law - Concept of Rule of Law
 - b) Liberty and Equality – Their relationship
 - c) Theories of Rights
 - d) Kinds of Rights
- 8) Classification of Government.
Traditional (Aristotle)
Modern:
 - a) Democracy : Direct and Indirect Democratic devices.
 - b) Unitary and Federal
 - c) Parliamentary and Presidential
- 9) The theory of separation of powers
- 10) Organs of Government:
 - A)Legislature : a) Types – Unicameral, Bicameral
 - b) Committee System
 - c) Functions of Legislature
 - d) Decline of legislature
 - B)Executive : a) Types – Parliamentary and presidential
 - b) Rise of executive in modern times.
 - C)Judiciary : a) Functions
 - b) Independence of Judiciary
 - c) Judicial Review
- 11) Electorate : Methods of Representation , voting behaviour.
- 12) Political parties – Functions – Types of party System
- 13) Popular control – Methods of control – public opinion – Mass Media.

BOOKS RECOMMENDED:

- 1) Introduction to political science : Garner, J.M.
- 2) A grammar of Politics : Laski, H.J.
- 3) The modern State : Mac Iver, R.M.
- 4) Political Theory : Asearvadam, E.
- 5) Substance of politics : Appa Dorai.
- 6) Great Political Issues : Lipson
- 7) Political Theory : Annual Roy & mohit, Bhattachari.
- 8) Rajniti Sastram : Acharya, K.R.
- 9) Modern Governments : Sharma, Sitaram
- 10) Select Constitutions ; Mahajan V.D.
- 11) Foreign Governments : Ogg & Zink
- 12) The Government of the United States : Ghosh, R.C.

Paper title: Economics Theory

Paper number

Group Paper - 1

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper-I - Economics Theory

i) Scope:

Micro and macro Economics – Circular flow of economic activities.

ii) Demand:

Concept of ordinal utility – indifference curve analysis - Consumer's Equilibrium price, Income and substitution effects – Derivation of Demand Curve – Law of Demand Elasticity of Demand – Types and measurement.

iii) Production:

Production function – Law variable proportions – Returns to scale – concept Of cost – opportunity cost – Types of costs total, average and marginal costs – short – run, longrun costs – Supply curves.

iv) Markets:

Concept of equilibrium of firm – price and output determination under perfect competition – monopoly and discriminating monopoly – monopolistic competition – concept of kindly demand curve in oligopoly

IV) National income:

National Income – Concepts and components – measurement of National Income pricing factors of production – Marginal productivity theory.

V) Income and employment theory:

Elements of classical theory – Keynes's theory of Income determination - Concept of APC and MPC in consumption function – concept of MEC in investment function - Multiplier and accalerator – Liquidity preference theory of interest – relevance of Keynes's theory to developing economics.

VI) Money & Banking:

Concept of money and RBI classification – M1 M2 M3 M4 – Value of money
And cost of living index – Credit creation by commercial banks – outline of RBI monetary policy - concept of inflation – Constpush demand pull and phillips's curve – Consequences

Paper title: DIFFERENTIAL EQUATIONS, ABSTRACT ALGEBRA AND VECTOR CALCULUS

Paper number

Group Paper - 1

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A / B.Sc. Mathematics I year Common core Syllabus

Title: DIFFERENTIAL EQUATIONS, ABSTRACT ALGEBRA AND VECTOR CALCULUS

Differential Equations:

Unit - 1

Differential Equations of First Order and First Degree

Linear Differential Equations

Differential Equations Reducible to Linear Form

Exact Differential Equations

Integrating Factors

Change of Variables

Total Differential Equations

Simultaneous Total Differential Equations

Equations of the Form

(i) Method of Grouping (ii) Method of Multipliers

Differential Equations of the First Order but not of the First Degree

Equations solvable for p

Equations solvable for y

Equations solvable for x

Equations that do not contain x (or y)

Equations Homogeneous in x and y

Equations of the First Degree in x and y - Clairaut's Equation

Unit - 2

Higher Order Linear Differential Equations

Solution of Homogeneous Linear Differential Equations of Order n with constant Coefficients.

Solution of the Non-homogeneous Linear Differential Equations with Constant Coefficients by means of Polynomial Operators.

(i) When and

(ii) When and

(iii) When

(iv) When or

(v) When , where V is a function of x

(vi) When and

(vii) When , where V is any function x.

Method of Undetermined Coefficients

Method of Variation of Parameters

Linear Differential Equations with Non-constant Coefficients

The Cauchy-Euler Equation

System of Linear Differential Equations

Solution of a system of Linear Equations with Constant Coefficients

An Equivalent Triangular System

Degenerate Case

(Scope as in Differential Equations and their Applications, by Zafar Ahsan, published by Prentice- Hall of India Private Limited, New Delhi).

Abstract Algebra

Unit-3

Elements of Number Theory

Divisibility, Primes

Congruences, Solutions of Congruences, Congruences of Degree 1

The Function

(Scope as in An Introduction to the Theory of Numbers by Ivan Niven, Herbert S. Zuckerman, published by Wiley Eastern Limited)

Binary Operations

Definition and Properties, Tables
 Groups
 Definition and Elementary Properties
 Finite Groups and Group Tables
 Sub Groups
 Subsets and Subgroups
 Cyclic Subgroups
 Permutations
 Functions and Permutations
 Groups of Permutations
 Cycles and Cyclic Notation
 Even and odd permutation
 The Alternating Groups
 Cyclic Groups
 Elementary Properties
 The Classification of Cyclic Groups
 Subgroups of Finite Cyclic Groups
 Isomorphism
 Definition and Elementary Properties
 How to Show that Groups are Isomorphic
 How to Show that Groups are Not Isomorphic
 Cayley's Theorem
 Groups of Cosets
 Cosets
 Applications
 Normal Subgroups and Factor Groups
 Criteria for the Existence of a Coset Group
 Inner Automorphisms and Normal Subgroups
 Factor Groups
 Simple Groups
 Homomorphisms
 Definition and Elementary Properties
 The Fundamental Homomorphism theorem
 Applications
 (Scope as in A First Course in Abstract Algebra by John B. Fraleigh, published by Narosa Publishing House).

Unit-4

Vector Differentiation
 Differential Operator
 Gradient
 Divergence
 Curl
 Vector Integration
 Theorems of Gauss, Green and Stokes and Problems related to them
 (Scope as in Advanced Engineering Mathematics by Erwin Kreyszig, published by John Wiley & Sons, Inc.) Abstract Algebra

Unit-3

Elements of Number Theory
 Divisibility, Primes
 Congruences, Solutions of Congruences, Congruences of Degree 1
 The Function
 (Scope as in An Introduction to the Theory of Numbers by Ivan Niven, Herbert S. Zuckerman, published by Wiley Eastern Limited)

Binary Operations
 Definition and Properties, Tables
 Groups
 Definition and Elementary Properties
 Finite Groups and Group Tables
 Sub Groups
 Subsets and Subgroups
 Cyclic Subgroups
 Permutations
 Functions and Permutations
 Groups of Permutations
 Cycles and Cyclic Notation

Even and odd permutation
 The Alternating Groups
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 Elementary Properties
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 Subgroups of Finite Cyclic Groups
 Isomorphism
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 How to Show that Groups are Isomorphic
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 (Scope as in A First Course in Abstract Algebra by John B. Fraleigh, published by Narosa Publishing House).
 Unit-4
 Vector Differentiation
 Differential Operator
 Gradient
 Divergence
 Curl
 Vector Integration
 Theorems of Gauss, Green and Stokes and Problems related to them
 (Scope as in Advanced Engineering Mathematics by Erwin Kreyszig, published by John Wiley & Sons, Inc.)
 1. D.A. Murray, Introductory Course on Differential Equations, Orient Longman, (India), 1967.
 2. A.R.Forsyth, A Treatise on Differential Equations, Macmillan and Co. Ltd., London.
 3. Jane Cronin, Differential Equations, Marcel Dekkar, 1994.
 4. Frank Ayres, Theory and Problems of Differential Equations, McGraw Hill Book Company, 1972.
 5. Richard Bronson, Theory and Problems of Differential Equations, McGraw Hill, Inc. 1973.
 6. I.N.Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975.
 7. N.Jacobson, Basic Algebra, Vols. I & II W.H.Freeman, 1980 (also published by Hindustan Publishing Company)
 8. Shanti Narayan, A.Text Book of Modern Abstract Algebra, S.Chand & Co. New Delhi.
 9. S.K.Jain, A. Gunawardena & P.B.Battacharya , Basic Linear Algebra with MATLAB, Key College publishing (Springer - Verlag) 2001.
 10. Vivek Sahai and Vikas Bist, Algebra, Norosa Publishing House, 1997.
 11. Murray R. Spiegel, Theory and Problems of advanced calculus, Schaum Publishing company, New York
 12. Murray R.Spiegel, Vector Analysis, Schaum publishing Company, New York.
 13. N.Saran and S.N.Nigam, Introduction to Vector Analysis, Pothishala, Pvt. Ltd., Allahabad.
 14. Shanti Narayana, A Text Book of Vector Calculus, S.Chand & Co., New Delhi.

Paper title: General English-I

Paper number

Paper - 1

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., B.B.M. General English First Year Syllabus

1) PROSE: "Selection from English Prose" O.U.P.

1. A chat with Mrs. Smiles : W.R. Lee
2. Lovers' Reimop'm : D.H.Spencer
3. Blood, Toil, Sweat and Tears : Sir Winston Churchill
4. A Snake in the Grass : R.K. Narayan
5. The Topaz Cufflinks Mystery : James Thurber
6. Letter to Indu : Jawaharlal Nehru
7. Dilly at the Dentists : George Bernard Shaw
8. A Sense of the Future : J.Bronowski
9. The Thief's Story : Ruskin Bond

2) POETRY: "Poetry for Pleasure" – Maruthi

1. On His Having Arrived at the
Age of Twenty – Three : John Milton
2. Go Lovely Rose : Edmond Walker
3. Tables Turned : William Wordsworth
4. Sonnet to science : Edger Allan Poe
5. The Express : Stephen Spender
6. Laugh and Be Merry : John Masefield
7. On Killing a Tree : Gieve Patel
8. Piano and Drums : Gabriel Okara

3) SHORT STORIES: "Best – Loved Stories" – Anu Chitra

1. The Refugee : pearls S. Buck
2. The Gold Watch : Mulk Raj Anand
3. The Open Window : Saki
4. Lemon; Yellow and Fig : Manohar Malgonkar
5. The Fortune – Teller : Karel Capak
6. God Sees the Truth but waits : Leo Tolstoy

4) LANGUAGE STUDY: "Enrich your Communication in English" – Lorven

1. Vocabulary and Spelling
2. Parts of Speech
3. Sentences, Clauses and Phrases
4. Prepositions and Conjunctions
5. Verbs
6. Tenses
7. Concord : Agreement of the subject and the verb
8. Transformation of Sentences:
 - a. Degrees of Comparison
 - b. Active and Passive voice
 - c. Direct and Indirect Speech
9. Simple, Complex and Compound Sentences
10. Writing Paragraphs
11. Letter writing

Paper title: Hindi-I

Paper number
Maximum marks

Paper - 2

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., B.B.M. HINDI First Year Common Core Syllabus

1) Syllabus applicable with effect from 2006-07 Academic Year Batch

Prose Test: Gadya Gaurav: Edited by Dr. Ajaya Kumar Patnaik published by: Sonam Prakasham. Uttarak Non-detailed Text: Charchit Kahaniya: Edited: Dr. Ghulam M.Khan published by Shabnam Pustak Mahal, Uttarak.

Grammar Pertaining to the following Topics:

Rewriting of sentences as directed based on Case, Gender, Number, Tense, Voice

Correction of sentences Usage of words into sentences

Karyalay Hindi: Administrative terminology (Prashasanik shabdavali), official designations in Hindi (padnam) Sandhi Vichhed & Identifying the Samas

Letter Writing: Personal letters, Letters of orders, Application for Appointment, letter of complaint.

Book Recommended:

Sarala Hindi Vyakaran: Part I, II & III (Dakshin Bharat Hindi Prachar Sabha, Hyderabad.

Samanya Hindi by Dwij Ram Yadav Sanjaya Book Centre, Varanasi)

Hindi Roop Rachana, Published by Lokbharti Prakashan, Allahabad.

Gadya Gavrav:

Omitted Lessons:

1. Lajja our glance
2. Sona Hiranee
3. Bajar Darshan
4. Apne meri Rachana Padhee
5. Maree Rumal Kho gayee
6. Jaha Akash Nahee Dikhee Deta

Selected Lessons:

Kavi our Kavitha

Earshya too Na gauee mere dilse

Bharateeya Sahitya Kee Ekhattha

Atithi

Ashunikathe our Sahitya

Neela Kanth

Nondetail book is Charchit Kahaniya

Stories Omitted:

Aadami ka Bacha

Lal pap kee begum

Sadachar ka taveej

Har

Stories Selected:

Usne Kaha tha

Puraskar

Thakur ka kuva

Roj

Chur hi da vat

Paper title: SANSKRIT-I

Paper number

Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., B.B.M. SANSKRIT First Year Common Core Syllabus

1) Syllabus applicable with effect from 2006-07 Academic Year Batch

(I) Poetry (II) Prose (III) Grammar

I. Poetry – Lesson No. 1 - Dasharathasya Rajyapalanam, from Ramanyana, Balakanda, Sixth Sarga, Shloka no. 1 to 28.

Lesson No. 2 – Yiduraneetayah Form Vidura Neeti, 1st Chapter

I) Pandita laxanani, Shloka No. 20 to 34

II) Moorkha Laxanani, Shloka no. 35 to 45

Lesson No. 3 – Aparna jatilam

From Kumara Sambhava, Vth Canto

Sloka No. 37 to 86

Lesson No. 4 – Rtughoshana

from Yashodhara Mahakavya of Ogeti Parikshit
Sharma, 1st Canto

1. Vasanta varmanam – Shloka No.1, 2, 5, 7, 8, 9

2. Greeshma varnanam – Shloka No. 13, 14, 16, 17, 19

3. Varshartu varnanam – Shloka No. 20, 21, 22

4. Sharadrtu varnanam – Shloka No. 29, 30, 31

5. Hemantartu varnanam – 34, 35, 36, 37

6. Shishirartu varnanam – 39, 40, 41, 42, 43

II. Prose – Lesson No. 5 – Dvijopakrtih

from Dashakumaracharitam

Lesson No. 6 - Mrtojeevanam

from Dwatrimsha Puttalika Simhasanam

Saptamopakhyanam

Lesson No. 7 – Catura Shashkah

from Panchatantra, Kakolukeeyam,

First story, Samskriti Sansthan Edition

Bareilly (U.P.), 1972

Page No.332 to 338, Upto 89th Shloka

III. Grammar: Conjugations;

1st Conjugation – Bhoo, Gam, Shtha, Drsh, Ghush, Vi+ tr, Labh, Mud

2nd Conjugation – As ()

3rd Conjugation – Div, Yudh, Sam + Tush

4th Conjugation – Pra + Vish, Mune, Ish

8th Conjugation – Likh, Kri ()

9th Conjugation – Kreen ()

10th Conjugation – Cur, kath, Bhash, Ram, Vand

Declensions:

Nouns ending in Vowels:

Deva, Kavi, Bhanu Dhatr, Pitr, Go, Rama, Mati, Nadee, Tanu, Vadhoo, Matr, Phala, Vari, Madhu

Sandhi:

Swara Sandhi: Savarnadeergha, Ayavayava, Guna, Vrddhi, Yanadesha
Vyanjana Sandhi: Scutva, Stutva, Anunasikadhitva, Anunasika, Latva, Jastva
Visarga Sandhi: Visarga Utva Sandhi, Visargalopa Sandhi, visarga Repha
sandhi, Ooshama Sandhi

samasa :

1. Dvandva
2. Tatpurusha (common)
 - a. Karmadharaya
 - b. Dwigu
 - c. Paradi Tatpurusha
 - d. Gatitaturusha
 - e. Upapada Tatpurusha
3. Bahuvrihi
4. Avyayibhava

Paper title: INDIAN HERITAGE AND CULTURE

Paper number

Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., : INDIAN HERITAGE AND CULTURE First Year Common Core Syllabus

PART: A

1. Fundamental Unity of Indian Harappan and Vedic Culture – Evolution of Caste System – Jainism and Buddhism – Gandhara Art.
2. Political unification of India under Mauryas and Guptas – Cultural achievements
3. Cultural conditions under the Satavahanas
4. Contribution of Pallavas and Cholas to Art and letters – Chola Administrative Systems
5. Influence of Islam on Indian Culture – The Sufi, Bhakthi and Vishnavite movements
6. Cultural Achievements of Vijayanagara Rulers
7. Contribution of Shershah and Akbar to the evolution of administration system in India – Cultural Development under Mughals
8. Western Impact on India – Introduction of Western Education – Social and Cultural awakening and social reform movements – Raja Rama Mohan Roy – Dayananda Saraswathi – Theosophical Society – Ramakrishna Paramahansa and Vivekananda – Iswara Chandra Vidyasagar and Veeresalingam – Emancipation of women and struggle against Caste
9. Rise of Indian Nationalism – Mahatma Gandhi – Non Violence and Satyagraha – Eradication of untouchability – Legacy of British rule

Books for Consultation:

- Majumdar, A.L. : Advanced History India (Macmillan, 1983)
Basham, A.L. : The wonder that was India (OUP, Madras 1983)
Basham, A.L. : Cultural heritage of India Vols.I to IV
(Published by Ramakrishna Mission, Calcutta during different years)
Luniya, B.A. : Evolution of Indian Culture
(From the earliest times to the present day)
(L.N.Agarwal, Book – sellers & Publishers, Agra 1980)
Bipan Chandra et.al.: Freedom struggle (New Delhi, 1972)

PART-B

- I. a. On the nature of Culture : Meaning, Definition and various interpretations of Culture
 - b. Culture and its salient features
 - II. The Vedic – Upanishadic culture and society
Human aspirations in those societies – Values – Chaturvidha Purusharthas
Chaturvarna theory Chaturasramsa theory
 - III. The Culture in Artha Sastra : Kautilyan conception of the function of philosophy, State, Religion and King
 - IV. Culture in Ramayana and Mahabharatha
 - a. The Ideal Man and Woman
 - b. Concepts Maitri, Karuna, Seela, Vinaya, Kshama, Santi, Anuraga as exemplified in the stories and anecdotes of the Epics.
 - V. a) The Culture of Jainism: Jaina Conception of Soul, Karma and Liberation.
 - b) Buddhism as a humanistic culture : The four noble Truths of Buddhism.
- Vedanta and Indian Culture.
Religion and Ethical Practices : The Hindu View.

Text Books:

- F. Max Mullar : Heritage of India, Chapter III & IV, 'Vedic Deities and Veda and Vedanta' (Susil Gupta India Ltd. Calcutta, 1951).
K.Satchidananda Murthy (Ed.): Reading in Indian History, Politics and Philosophy, Part – C "The Culture of India" (Allied Publishers, Bombay 1967)
-do- : The Indian Spirit, PP.185 – 217 (Andhra University Press, Waltair, 1965.)

Reference Books:

Theodore de Barry (Ed.) : Sources of Indian Tradition (Motilal Banarasi Das, Varanasi)□

Nirmal Kumar Bose : Culture and Society in India (Manimala, Calcutta, 1967)

B.S.Sanyal : Culture:An Introduction (Macmillan, Madras, 1927)

S.Radhakrishnan : Hindu View of Life, (Asia Publishing House, Bombay,1962)

S.Radhakrishnan : Idealistic View of Life, (Allen & Unwin, London, 1964)

Sri Aurobindo : Foundations of Indian Culture, (Sri Aurobindo Library, New York,□
1953)

Paper title : INDIAN GOVERNMENT OF POLITICS

Paper number

Group Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper – II : INDIAN GOVERNMENT OF POLITICS

1. Introductory Note on the Nationalist Movement in India

Brief and Sketch survey from 1885 to 1947

2. Constitutional Assembly – Making of the Indian Constitution

Salient Features of the Constitution - Amending Procedure.

3. Indian Federation: Union – State Relations – Recent Trends.

4. Fundamental Rights, Fundamental Duties and Directive Principles of State Policy.

5. President – Election, Powers and Functions.

6. Council of Ministers – Cabinet – Prime Minister. Position and importance of office of the Prime Minister.

7. Parliament: Composition, Powers and Functions.

8. Judiciary: Structure and Organisation: Supreme Court – Composition, Powers and Functions. Judicial Review – Judiciary as an arm of Social Change

9. Indian Party System: Major National Parties and Regional Parties.

10. Social and Economic Factors in Indian Politics: Language, Religion Caste, Regionalism, Peasant, Trade Union, Youth and Tribal. Movements – their impact on National Integration.

11. Election Trends and Voting Behaviour.

Recommended Books:

1. Studies in Indian Democracy: Aiyer SP & Srinivasan R.

2. Introduction to the Constitution of India: Basu D.D

3. Aspects of Indian Constitution: MG Gupta

4. Indian: Government and Politics in a Developing Nation: Hardgrave, R.L.

5. Select Constitutions: A.C. Kapoor

6. Modern Government : Mahajan V.D.

7. The Government and Politics of India: Morris James, W.H.

8. Indian's Constitution : Pylee, M.V.

9. The Indian Political System: Palmer, N.D.

10. Landmarks in the National and Constitutional Development: Singh, G.N.

Paper title: DEVELOPMENT ECONOMICS AND ISSUES IN INDIAN ECONOMY

Paper number

Group Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper – II : DEVELOPMENT ECONOMICS AND ISSUES IN INDIAN ECONOMY

1. Concepts: Development and underdevelopment – Factors conducive and hindrance to development Measurement with reference to per capital income, physical quality of life Index, Human Development. Index and Net Economic welfare.
2. Approaches to Development: Balanced and Unbalanced growth – Import substitution and exported growth – Investment criteria – Sen's choice of techniques.
3. Structure of Indian Economy: Structural changes in India economy since independence – Trends in the composition of national – income distribution – Poverty and inequalities – A critical appraisal.
4. Human Resources: Population – Changes in occupational structure – Age, genders, rural and urban – Literacy, Education, Health and National Policies – Unemployment.
5. Planning and State Intervention: A brief review of achievements of earlier plans – current five year plan, its objectives and allocation – Current fiscal policy – On overview of public distribution system.
6. Agriculture and Rural Development: A brief review of land reforms – Impact of New agricultural strategy – Agricultural Finance – Marketing and Agricultural price policy – Rural Development Programmes with reference to IRDP, Rozgar Yojanas and their impact on women and weaker sections.
7. Industry and Trade: Structure and problems of industry including public sector – role of small scale industries and sickness among them – Household Industries: Hand – looms. Dairy and Poultry – Source of Industrial Finance an outline of institutional finance and role of IDBI and IFCI – New Industrial policy – Trade policy – Balance of payments – Role of IMF and IBRD in Indian economic development – State policy – CATT.

Books for Reference and Study:

1. G.M. Meri : Leading issues in Economic Development
2. A.K. Sen : Choice of Techniques, Bodil Blockwell
3. Gatak S. : Development Economics, Longmen.
4. Agarwal, A.N. : Indian Economy, Vikas
5. Dutt & Sundaram : Indian Economy, S. Chand & Co.,
6. Gahosh A. : Indian Economy, World Press
7. Hicks J.R.M. Mukherjee and S.Ghosh :The Frame work of the Indian Economy, Oxford.
8. Misra S.K. and V.K. Puri : Indian Economy, Himalaya
9. Wadha, C.D. : Some problems of Indian Economy, Tata – MC Graw Hill.
10. Srivastava : Advanced Economics of Development and Planning allied Publishers.
11. Ghosh A and SK : Planning Techniques and Indian Plans
12. S. Chandrasekhar and Ranigopal : Population growth, Health and Nutrition.
13. Meri and Baldwin : Economic Development
14. Telugu Akdemi Publications

Paper title: SOLID GEOMETRY AND REAL ANALYSIS

Paper number

Group Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A./B.Sc. MATHEMATICS SECOND YEAR

Paper - II Solid Geometry and Real Analysis

SYLLABUS

SOLID GEOMETRY

UNIT - I

The Plane

Every equation of the first degree in x, y, z represents a plane

Converse of the preceding theorem B.A./B.Sc. MATHEMATICS, PRACTICAL SYLLABUS

Paper - II : SOLID GEOMETRY AND REAL ANALYSIS

Bisectors of angles between two planes

The length and equations of the line of shortest distance between two straight lines

Sphere through a given circle

Angle of intersection of two spheres

Condition that the general equation of the second degree should represent a cone

Reciprocal cones

Right circular cone

The right circular cylinder

Sequences and Their Limits

Series

Limits of Functions

Continuous Functions

The Mean value Theorem

L'Hospital Rules

Riemann Sums

Transformation to the normal form

Determination of a plane under given conditions

(i) Equation of a plane in terms of its intercepts on the axes

(ii) Equations of the plane through three given points

Systems of planes

Two sides of a plane

Length of the perpendicular from a given point to a given plane

Bisectors of angles between two planes

Joint equation of two planes

Orthogonal Project of the Plane

Volume of a tetrahedron in terms of the co-ordinates of its vertices

Equations of a line

Right line

Equations of a line

Angle between a line and a plane

The condition that a given line may lie in a given plane

The condition that two given lines are coplanar

Number of arbitrary constants in the equations of a straight line. Sets of conditions which determine a line.

The shortest distance between two lines. The length and equations of the line shortest distance between two straight lines.

Length of the perpendicular from a given point to a given line

Intersection of three planes Triangular prism.

The Sphere

Definition and equation of the sphere Equation of the sphere through four given points

Plane sections of a sphere. Intersection of two spheres

Equation of a circle. Sphere through a given circle.

Intersection of a sphere and a line. Power of a point.
Tangent plane. Plane of contact. Polar plane. Pole of plane.
Angle of intersection of two spheres. Conditions for two spheres to be orthogonal
Radical plane. Coaxial system of spheres
Simplified form of the equation of two spheres.

UNIT - II

Cones, Cylinders

Definitions of a cone, vertex, guiding curve, generators. Equation of the cone with a given vertex and guiding curve. Enveloping cone of a sphere. Equations of cones with vertex at origin are homogeneous.

Condition that the general equation of the second degree should represent a cone.

Condition that a cone may have three mutually perpendicular generators.

Intersection of a line and a quadric cone. Tangent lines and tangent plane at a point.

Condition that a plane may touch a cone. Reciprocal cones.

Intersection of two cones with a common vertex.

Right circular cone. Equation of the right circular cone with a given vertex, axis and semi-vertical angle.

Definition of a cylinder. Equation to the cylinder whose generators intersect a given conic and are parallel to a given line, Enveloping cylinder of a sphere.

The right circular cylinder. Equation of the right circular cylinder with a given axis and radius.

The Conicoid

The general equation of the second degree and the various surfaces represented by it

Shapes of some surfaces. Nature of Ellipsoid. Nature of hyperboloid of one sheet

Enveloping Cone

Enveloping Cylinder

(Scope as in Analytical Solid Geometry by Shanti Narayan, published by S. Chand & Company Ltd.)

REAL ANALYSIS

UNIT - III

The Real Numbers The Algebraic and Order Properties of $\mathbb{R}$

Absolute Value and Real Line

The completeness property of $\mathbb{R}$

Applications of the Supremum property.

Intervals

(No question should be set from this part)

Sequences and Series

Sequences and Their Limits

Limit Theorems

Monotone Sequences

Subsequences and the Bolzano - Weierstrass Theorem

The Cauchy Criterion

Properly Divergent Sequences

Series

Limits

Limits of Functions

Limit Theorems

Some Extensions of the Limit Concept

Continuous Functions

Continuous Functions

Combinations of Continuous Functions

Continuous Functions on Intervals

Uniform Continuity, Definition, Non Uniform Continuity Criteria,

Uniform Continuity Theorem.

UNIT - IV

Differentiation

The Derivative

The Mean Value Theorem

L'Hospital Rules

Taylor's Theorem

The Riemann Integral

The Riemann Integral Riemann Integrable Functions

The Fundamental Theorem

(Scope as in Introduction to Real Analysis by Robert G. Bartle & Donald R. Sherbert, published by John Wiley & Sons, Inc.)

SUGGESTED READINGS:

1. S.L. Loney, The Elements of Coordinate Geometry, Macmillan and Company, London.
2. Gorakh Prasad and H.C. Gupta, Text Book on Coordinate Geometry, Pothishala Pvt.Ltd., Allahabad.
3. R.J.T. Bill, Elementary Treatise on Coordinate Geometry of Three Dimensions, Macmillan India Ltd., 1994.
4. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of Two Dimensions, Wiley Eastern Ltd., 1994.
5. P.K. Jain and Khalil Ahmad, A Text Book of a Analytical Geometry of Three Dimensions, Wiley Eastern Ltd., 1999.
6. N. Saran and R.S. Gupta, Analytical Geometry of Three Dimensions. Pothishala Pvt. Ltd., Allahabad.
7. R.R. Goldberg, Real Analysis, Oxford & IBH Publishing Co., New Delhi, 1970.
8. S. Lang, Undergraduate Analysis, Springer - Verlag, New York, 1983.
9. D. Somasundaram and B. Choudhary, A. First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
10. Shanti Narayan, A Course of Mathematical Analysis, S. Chand & Co., New Delhi.
11. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.

B.A./B.Sc. MATHEMATICS, PRACTICAL SYLLABUS Paper - II : SOLID GEOMETRY AND REAL ANALYSIS

Bisectors of angles between two planes
The length and equations of the line of shortest distance between two straight lines
Sphere through a given circle
Angle of intersection of two spheres
Condition that the general equation of the second degree should represent a cone
Reciprocal cones
Right circular cone
The right circular cylinder
Sequences and Their Limits
Series
Limits of Functions
Continuous Functions
The Mean value Theorem
L'Hospital Rules
Riemann Sums

Paper title: General English-II

Paper number

Paper - 1

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., B.B.M., : English second Year Common Core Syllabus

1) PROSE :

1. In London : M.K.Gandhi
2. Pecuniary independence : P.T.Barnum
3. The Drunkard (An Excerpt) : William H. Smith
4. Three Days to see : Helen Keller
5. Knowledge society : A.P.J.Abdul Kalam
6. Principles of Good Writing : L.A.Hill
7. Man's Peril : Bertrand Russell
8. Shooting an Elephant : George Orwell
9. The Day Dag Hammarskjold
- Rode in my jeep : Jhan Robbins

2) Poetry:

1. London : William Blake
2. Ode to the West Wind : Percy Bysshe Shelley
3. Ode to a Nightingale : John Keats
4. Ulysses : Alfred Tennyson
5. The Last Ride Together : Robert Browning
6. Because I could not stop for Death : Emily Dickinson
7. Mending Wall : Robert Frost
8. The Gift of India : Sarojini Naidu
9. Advice to Fellow Swimmers: Kamala Das

3) Short Stories:

1. The Lottery Ticket : Anton Chekov
2. Ha'penny : Alan paton
3. Subha : Rabindranath Tagore
4. Diamond Rice : RangaRao
5. The only American From Our village : Arun Joshi
6. Luck : Mark Twain

4) LANGUAGE STUDY:

1. Phrasal Verbs and Idioms
2. Reference Skills
3. Information Transfer
4. Summarising, Note-taking
5. Essay Writing
6. Dialogue writing
7. Presentation Skills
8. Interview

Paper title: Hindi-II

Paper number

Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

II Year B.A. / B.Com / B.Sc / B.B.M., Common Core Syllabus

HINDI PAPER – II

A) LESSON TO BE STUDIED

1. Kabir Das Ke dohe
2. Tulsee Das ke Dohe
3. Raheem ke Dohe
4. Biharee Lal ke Dohe
5. Agodhya simha Upadhyar Harioudh – (Karma veer)
6. Mythilee Saran Gupta – (Kaikeyee ka Pasehattap)
7. Sohanlal Dvivedi – (Yugatar Bapu)
8. Jaya Shankar Prasad – Hamara Pyara Bharat varsh
9. Surya Kanth tripathi nirala – (Bhikshak)
10. Rama Dharee Simha 'Dinakar' – Bhismekasara Sayya se upadesh

B) GENERAL ESSAYS TO BE STUDIED

1. Pustakalay
2. Vignan se Hani Aur labh
3. Deshatan
4. Dahi Pratha
5. Bekaree ke Samasya
6. Saha Siksh
7. Vidyarthi Aur Rajaneethi
8. Parivaran Pradushan
9. Apna Priya kavi
10. Dora Darshan

C) CHAPTERS TO BE STUDIED FROM HISTORY OF HINDI LITERATURE

1. Kala Vibhajan
2. VeeraGatha ka Aur Chand baradeyee
3. Nirguna Bhakti Aur Kabir Das
4. Krishna Bhakti Aur Sur Das
5. Rama Bhakti Aur Tulaseedas
6. Reethikal Aur Bihareelal
7. Upanyas ka Aur Premchand
8. Natak ka vikas Aur jayasankar Prasad

D) TRANSLATION

A Paragraph consists of approximately ten sentences in English to be translated into Hindi.

Paper title [SANSKRIT-II

Paper number

Paper - 2

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

II Year B.A. / B.Com / B.Sc / B.B.M., Common Core Syllabus

II YEAR: SANSKRIT SYLLABUS

I. DRAMA:

1. Naganandam Act – I
2. Urubhangam of Bhasa
3. Sri Krishnasya Maittri

II. Champu

Viswamitrasya Brahmarshitvam

III. Prose:

Bhishajo Bhaishajyam

IV. HISTORY OF LITERATURE:

1. Bharavi 2. Magha 3. Sriharsha 4. Jayadeva
5. Bana 6. Battanarayana 7. Sankaracharya 8. Panchatantram

V. ALANKARAS:

1. Upama 2. Ananvaya 3. Utpreksha
4. Deepakam 5. Aprastutha prasamsa 6. Drstantam
7. Aarthantharanyasa 8. Virodh Bhasa 9. Ullekha
10. Swabhavakti

VI. GRAMMAR:

A. Halantha Sabdas:-

1. Jalamuch 2. vach 3. Maruth 4. Bhagavath
5. Pachath 6. Rajan 7. Gunin 8. Naman
9. Vidwas 10. Manas.

SARVANAMA SABDAS -----

1. Asmad 2. Yusmad 3. Idam 4. Tad 5. Ethad 6. Yad 7. Kim

B. PRATYAYAN THANI --

1. Ktva 2. Lyap 3. tumun 4. Kta
5. Ktavath 6. Satr 7. Sanach 8. Tavya

VII. TRAVSLATIONS:--

1. General Sentences from Sanskrit to telugu or English.

Paper title: SCIENCE AND CIVILIZATION

Paper number

Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A., B.Com., B.Sc., : SCIENCE AND CIVILIZATION second Year Common Core Syllabus

1. Science:

- i) Observation, hypothesis, experiment, theory, proof.
- ii) Great discoveries result from: the method the man.
- iii) Modern Science: sophisticated equipment, term work.

2. Evolution of civilization :Paleolithic, Neolithic, Age of metals (copper – bronze, early iron); rehistoric, Historic (Ancient, medieval and modern).

3. Significant discoveries and inventions with their prime areas of impact

- i) Vaccination, Pencillin, x-rays, Antibiotics, Vitamins, Anesthesia, DDT, Detergents, Contraceptives, Radium therapy, Insulin Cortisones, Antiseptics etc.
(HEALTH)
- ii) Wheel, compass, Surveying, Steam Engine Auto – mobile, Ship, Aero plane etc
(TRANSPORT)
- iii) Radio, Telephone, Wireless, Camera, Teleprinter, Radar, Television, Satellites etc
(COMMUNICATIONS)
- iv) Hybridisation, Green resolution, Artificial insemination, Fertilisers, Insecticides, pesticides etc (AGRICULTURE & ANIMAL HUSBANDRY)
- v) Synthetic fibres, electric lamp. Paper, printing Refrigeration, Cinema etc
(SOCIAL WELL BEING)
- vi) Gunpowder, Iron Metallurgy, Sources of energy (Wood coal, oil, electricity, atomic power) Non-conventional sources (Wind, Water, solar cells, biogas geothermal): Clock, computer.
(INDUSTRY)

4. Relations between Science and Society: complementary and occasionally adverse also Capitalism-leading to better means of communication to over exploit resources Warfare: Development of gunpowder, bomb, jet radar, ICBM, biological killers etc.

5. Society: Goals – Welfare, freedom, security, social justice.

Paper title: Optional Public Administration Concepts & Theories

Paper number

Group Paper - 4

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper – IV a Public Administration: Concepts and Theories

1. Meaning and scope of Public Administration
2. Relation with other Social Sciences: Political Science, Sociology and Economics
3. Importance of Public Administration in development society
4. Classics & Administration: Wilson
5. Human Relations Approach: Elton Mayo
6. Behavioural Approach / Ecological Approach: Herbert Simon & Argyris.
7. Comparative and Development administration, Weldraw and Riggs
8. Social – Psychological Approaches; Theory X and Theory Y MC Gregor, Likert.
9. Bureaucracy: Marx. Weber
10. Division of Working
11. Coordination
12. Hierarchy, Unity of Command and Control
13. Authority
14. Decision Making
15. Line & Staff Agencies, Head quarters & Field relations
16. Centralisation and Decentralisation
17. Delegation
18. Leadership and Supervision
19. Communication & Public Relation
20. Planning
21. Delegated Legislation, Administrative Adjudication

Paper title: International Relations

Paper number

Group Paper - 4

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper IV (b) International Relations

1. International Relations: Nature and Scope
2. Rise of Modern State System.
3. Rise of colonialism.
4. The World at the time of I World War - Treaty of Versailles.
5. The League of Nations - Origins and significance. Role of the League of Nations in maintaining world peace and causes for its failures.
6. The second world war causes and consequences
7. The UNO: Origin, structure – Its role in promoting International Peace.
8. Emergence of Super Powers: Bipolarity cold war and détente - Decline of USSR and its impact on world politics.
9. Emergence of the Third World, Problems of the Third World.
10. Rise of the III World collectively: United Demand for NIEO, North South Dialogue: South cooperation.
11. Non-Aligned Movement – Origin. Development and relevance
12. Disarmament and Arms control problems & prospects
13. Factors Influencing India's foreign policy: Its basic features.
14. Regional Organizations, SAARC; EEC; ASEAN

Books Recommend:

E.H. Carr, International Relations between the Two World Wars

J. C. Johari, International Politics

M C. Gupta, International Relations

Rama Melkote & Narasimha Rao : International Relations

V.D Mahajan: International Relations.

Paper title [Government And Politics Of India]

Paper number

Group Paper - 4

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

PAPER – IV (C) Government and Politics of A.P.

1. Indian Federation: Constitutional position of the State
2. Political History of the State since Independence, formation of the State of A.P., Socio economic frame work.
3. State Executive: Position of the Governor, Council of Ministries, Chief Minister and his relation with Ministers.
4. State Legislature: Committee system, changing role of Legislature.
5. State Judiciary: Organization, powers and functions
6. Political parties: National, Regional
7. Pressure groups
8. Political Participation: Elections and voting behaviour
9. Regionalism & Telangana and Andhra Agitations
10. Panchayat Raj System: Aims and objectives – Structure - Functions, critical estimation.
11. Peasant and Tribal Movements in A.P

Note: As per the guidelines of the Common Core Committee for Political Science, the Colleges must compulsorily offer teaching in the paper “ Public Administration concepts and Theories” for study as paper IV in III BA Political science for the students who do not have Public Administration as one of the group subjects.

B.A. [Maths, Politics, Economics]

Paper title [Political Thought]

Paper number

Group Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A. POLITICAL SCIENCE

PAPER III: Political Thought

1. Introduction to the study of Political Thought.
2. Ancient Greek Political Thought Plato and Aristotle
3. Kautilya and Manu.
4. Social Contract Theoreticians : Hobbes, Locke, Rosseau.
5. Utiliterians - Bentham and J.S. Mill.
6. Idealists: Hegel and T.H. Green
7. Socialists: Utopian
8. Scientific Socialism – Karl Marx.
9. Philosophy of the Indian National Movement - Moderates and Extremists and Gandhian Era
10. Political Ideas of:
 - a). Jawaharlal Nehru
 - b. M.N. Roy
 - c. Jayaprakash Narayan
 - d. B.R. Ambedkar
11. Gandhism – International relevance and Significance.

B.A. [Maths, Politics, Economics]

Paper title [Public Economics]

Paper number

Group Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

PAPER – III OPTIONAL PUBLIC ECONOMICS

Module 1: Role of Government:

Principle of Maximum social advantage – changing perspective about role of Government – Public Vs. Private Sector-Budget as a means of operationalising the planning process.

Module 2: Public Revenue – Taxation:

Revenue sources and classification-Direct and Indirect Theory of incidence of Taxation, Economic effects of taxation proportional & progressive taxes.

Module 3: Public Expenditure:

Social and economic objectives and effects-theories of Public expenditure – Wagner's law and Peacock – Wisemen Hypothesis.

Module 4: Public Dept:

Internal and External Dept – Economic and Social effects – methods of redemption.

Module 5: Public Enterprises:

Problems of organization and management – Pricing policies

Module 6: Indian Public Finance

Budget-components of Budget and its role.

Structure and growth of tax system –personal income and corporate income taxation – Modified value – Added Tax – Trends in the Non-tax revenue in India Generation of Indian public expenditure-problems Indian Public Dept. – Import of External dept. on Indian Economy.

Current fiscal policy in India Centre State Relations with special reference to current finance commission – Public enterprises In India.

Books Recommended:

R.A. Musgrave : Public Finance

Palton : Public Finance

R.N. Bhargav : Indian Public Economy

Andley & Sundaram : Public Economy

U.K. Hicks : Public Finance

J.M. Buchanan : The Public Finance

R. Chellaiah : Fiscal Policy in under developed countries

Paper title [Economic Statistics]

Paper number

Group Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

PAPER –III OPTIONAL ECONOMIC STATISTICS

Module I: Scope of Statistics in Economics:

Definition of statistics – Role of Statistics in the measurement of economics activity

Module II: Collection of Data:

Sources of data – primary and secondary methods of collection of statistical data.

Module III: Data Analysis:

Classification and Tabulation of statistical data – frequency tables

Module IV: Diagrammatic representation :

Bar Diagrams – Pie diagram – Histogram, Frequency polygon frequency curves, ogins and

Module VI: Measures of Dispersion:

Rough, Quartile deviation, mean deviation and Standard deviation – Merits and Demerits – Coefficient of variation – skewness and Kurthosis – Simple correlation and Regression.

Module VII: Index Numbers□

Construction of Index Numbers – Laspayer's passches's and Fisher's ideal index number – cost of living index number

Module VIII: Time Series:

Time Series – Components – Methods of calculation of trend.

Module IX: Indian Official statistics & Organization structure

- a. National Income statistics
- b. Population Statistics (1961 onwards)
- c. Agriculture Statistics
- d. Statistics of Industrial production
- e. Price Statistics
- f. C.SO. N.S.S. and ISI.

Paper title: Rural Development

Paper number

Group Paper - 4

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

Paper – IV RURAL DEVELOPMENT

I Scope of Rural Development

The Concept of Rural Development alternative perspectives in Rural Development

II. Rural Demography

Demography problems of rural areas- Approaches to population control – Family Welfare Programmes – Problems of Health Nutrition and Medical care.

III Rural Unemployment

Pattern of land holdings and inequalities in land distribution- Rural unemployment concept and measurement Employment and Minimum wage legislation.

IV Rural Credit and Indebtedness:

Rural Indebtedness – Nature and magnitude of the problem-courses of rural credit-multiagency approach-cooperation Nationalized Banks – Rural Banks.

V Rural Industrialization

Importance of Rural Industrialization cottage and small scale industries-theory sector agro based Industries – problems and prospects

VI Rural Development Programmes:

Asset based and employment based Rural Development programmes – IRDP – NREP – Antipoverty programmes for weaker sections – Rural Education and Audit literacy and its importances

VII Institutions for Rural Development

Democratic decentralization – Panchayat Raj, Co-operative DRDA, ITDA, SCRBC, Corporations DIC – District Planning Boards

VIII Rural Migration:

Surplus labour in rural areas – Rural migration its impact on rural development

IX Rural Labour and Problems

Problems and intensity of unemployment of Rural Labour in different sectors with reference to artisans and other self employed categories – Diversification of economic activities and generation of employment opportunities Alternative models of Rural Development – Gandhian –□

Reference Books:

1. K.P. Dutta & Sundaram : Indian Economics
2. Lipton M. Uroan Dasis : Why poor people stay poor
3. Satya Sundaram : Anti-poverty Rural Development
4. R.C. Saxena : Labour Problems and Social Welfare
5. Kuchhel : Industrial Economy of India
6. Sabtaj Azeet : Rural Development

Paper title: NUMERICAL ANALYSIS AND SPECIAL FUNCTIONS

Paper number

Group Paper - 4

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

B.A./B.Sc. MATHEMATICS SYLLABUS

Paper - IV

(NUMERICAL ANALYSIS AND SPECIAL FUNCTIONS)

UNIT - I

Finite differences - operators E and problem of interpolation - problem of subtabulation - Newton's Forward interpolation formula - Newton - Gregory backward interpolation formula - Error in the interpolation formula.

UNIT - II

Interpolation with unequal intervals - Divided differences - Newton's general divided differences formula - Lagrange's interpolation formula - inverse interpolation.

UNIT - III

Central differences- Notation - The Gauss and Stirling formula - The Bessels formula - The Everett formula.

UNIT - IV

Inverse interpolation and solution of equations - The problem of inverse interpolation - The solution of equations - Graphic solution - Roots by inverse interpolation - Iteration method - The regular falsi Newton's method.

UNIT - V

Numerical integration - The trapezoidal rule - The Simpson's 1/3 and 3/8th rules - Weddle's rule.

UNIT - VI

The Beta and Gamma functions - Definitions - Relation between Beta and Gamma functions - Gamma functions for negative values - problems.

UNIT - VII

Legendre polynomial - Differential equation - Solution as polynomials - Rodrigue's formula - Generating function - Recurrence relations - Orthogonality.

UNIT - VIII

Hermite diff. equation - solution - Hermite Polynomials - Rodrigue's formula - Generating function Recurrence relations - Orthogonality.

UNIT - IX

Laguare diff. equation - solution - Laguare Polynomials - Rodrigue's formula - Generating function - Recurrence relations - Orthogonality.

UNIT - X

Bessel's diff. equation - Solution - Bessel's functions - Generating function - Properties - Recurrence relations - Problems.

Paper title: Rings and Linear Algebra

Paper number

Group Paper - 3

Maximum marks

Model Question Papers / Past Question Papers

Syllabus details

SYLLABUS FOR ELECTIVE PAPER IV MODERN APPLIED ALGEBRA FOR
III YEAR B.A./B.Sc., STUDENTS

UNIT 1 & 2 : SETS AND FUNCTIONS

Sets and subsets - Boolean algebra - Functions - Inverse - Functions on S to S - Sums, Products and powers - Peano axioms - Finite induction.

(Sections 1 to 8 of the chapter - 1 of [1]).

UNIT - 3 & 4 : BINARY RELATIONS AND GRAPHS

Relation Matrices - Algebra of relations, Partial orderings - Equivalence relations and Partitions - Modular numbers ; Morphisms - Cyclic unary algebras - Directed graphs.

(Sections 1 to 8 of the chapter - 2 of [1]).

UNIT- 5 & 6 : FINITE STATE MECHINES

Binary devices and states - Finite state machines - Covering and Equivalence - Equivalent states - Minimization procedure - Incompletely specified machines.

(Sections 1 to 6 and 8 of the chapter - 3 of [1]).

UNIT - 7 & 8 : PROGRAMMING LANGUAGES

Arithmetic expressions - Identifiers; Assignment statements - Arrays - For statements - Block structures in ALGOL - The Algol grammar

(Sections 1 to 7 of chapter - 4 of [1]).

UNIT - 9 & 10 : BOOLEAN ALGEBRAS

Order - Boolean polynomials - Block diagrams for gating networks - Connections with logic.

(Sections 1 to 5 of chapter - 5 of [1]).

THE BOOK FOR REFERENCE

[1] G. Birkhoff and T.C. Bartee "Modern Applied Algebra"

Mc. Graw - Hill Book Company, New York, 1970.

ACHARYA NAGARJUNA UNIVERSITY