

**Paper title:** INDIAN HISTORY AND CULTURE FROM EARLIEST TIMES TO 1526 A.D.

**Paper number** Group Paper - 1

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

PAPER-1 – INDIAN HISTORY AND CULTURE FROM EARLIEST TIMES TO 1526 A.D.

- i) Sources – History as a social science – Influence of Geography on Indian History
- ii) Harappan Culture – Vedic Civilisation.
- iii) Importance of 6th Century B.C. in Indian History Buddhism and Jainism.
- iv) Alexander's invasion and its effects.
- v) Mauryan – Asoka's Dhamma – Mauryan Administration – Decline and Down fall – cultural conditions in the Mauryan Age.
- vi) Kushans – Kanishka – Cultural Contributions – Satavahanas – Social Economic, political and Religious conditions.
- vii) Imperial Guptas – Samudragupta – Contribution to Culture-Fahien. Harsha and his achievements- Yuan chawing Rajput Heritage.
- viii) India's Cultural contacts with neighbouring Countries – Central South East and East Asia.
- ix) Pallavas and their Contribution to culture and Arts. Western Chalukyas of Badami – Pulakesin II. Eastern Chalukyas of Vengi.
- x) Imperial Cholas – Administration – Cultural Contributions.
- xi) Turke – Afgan invasions – Arab Conquest of sind Invasions of Ghazni and Ghorī – establishment of sultanate- Alauddin.
- xii) Khilji Mohammad Bin Tugluq - Influence of Islam on Indian Culture Bhakti Movement.
- xiii) The Kakatiyas – Socio – economic condition – their cultural contributions.
- xiv) Vijayanagar Empire – Krishna devaraya - socio – economic and Cultural conditions.

**TEXT BOOKS RECOMMENDED:**

- 1) K.A.Neelakanta Sastri : History of India Volumes I & II
- 2) Puri, Chopra & Das : Economic , Social and Cultural History of India, Volumes I & II
- 3) Ray Chaudhuri, Majumdar & Duta : Advanced History of India Volumes I & II
- 4) S. Natarajan : History of India Volumes I & II

**REFERENCE BOOKS:**

- 1) Romila Thapar : History of India .
- 2) A.L.Basham : Cultural History of India.
- 3) Lunia : Cultural History of India.

B.A. : Maths, English, History

**Paper title:** DIFFERENTIAL EQUATIONS, ABSTRACT ALGEBRA AND VECTOR CALCULS

**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 CALCULS

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  
 Cyclic Groups  
 Elementary Properties  
 The Classification of Cyclic Groups  
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 Isomorphism  
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 How to Show that Groups are Isomorphic  
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 Cayley's Theorem  
 Groups of Cosets  
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 Normal Subgroups and Factor Groups  
 Criteria for the Existence of a Coset Group  
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 Factor Groups  
 Simple Groups  
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 Definition and Elementary Properties  
 The Fundamental Homomorphism theorem  $\square$   
 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.)  
 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:** Special English - I

**Paper number**

Group Paper - 1

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

B.A. First Year – Special English – Syllabus

Unit – I: Language and Literature:

a) Brief Survey of the English language: Standardisation; Word – formation; foreign influences (Latin, French, Scandinavian); Semantic Changes (relevant chapters from an outline History of the English Language by FT Wood)

b) (Understanding / comprehension)  
of a literary prose passage  
of a poem

Unit – II: Forms of poetry: Evolution, kinds and variations.

Sonnet ..... Wordsworth "scorn not the sonnet"

Ode ..... Shelley "Ode to the West Wind"

Elegy ..... Gray "Elegy written in a Country Churchyard"

Ballad ..... Yeats "The Ballad of Father Gilligan"

Lyric ..... Robert Burns "A Red, Red Rose"

Dramatic Monologue ..... Browning "My Last Duchess"

Unit – III: Elements of Drama:

Plot / Structure ..... Farrell Mitchell "The Best Laid Plans"

Character ..... J.B. Priestly "Mother's Day"

Dialogue ..... Anton Chekov "A Marriage Proposal"

Unit – IV: Elements of Fiction:

Point of view ..... Kushwant Singh "The Interview"

Setting / Atmosphere ..... Edger Allen Poe "The Tell – Tale Heart"

Style / Narrative Techniques ..... O Henry "The Gift of the Magi"

**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 Anamd
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**

Paper - 2

**Maximum marks**

**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. Cuttak Non-detailed Text: Charchit Kahaniya: Edited: Dr. Ghulam M.Khan published by Shabnam Pustak Mahal, Cuttak.

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 Vichehhd & 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. Apane meri Rachana Padhee
5. Maree Rumal Kho gayee
6. Jaha Akash Nahee Dikhee Deta

Selected Lessons:

Kavi our Kavitha

Earshya too Na gauwe mere dilse

Bharateeya Sahitya Kee Ekhatha

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

**B.A. [Maths, English, History**

**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, Ist 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 - Mrtojjeevanam

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, Vadhuo, Matr, Phala, Vari, Madhu

Sandhi:



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

samasa □

1. Dvandwa □
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 Chaturasrams 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)

**B.A. [Maths, English, History]**

**Paper title** [INDIAN HISTORY AND CULTURE FROM 1526 TO 1964 A.D.]

**Paper number**

Group Paper - 2

**Maximum marks**

Model Question Papers / Past Question Papers

**Syllabus details**

**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

**B.A. [ Maths, English, History**

**Paper title: [ SPECIAL ENGLISH - II**

**Paper number**

Group Paper - 2

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

BA SPECIAL ENGLISH, SECOND YEAR, PAPER – II

UNIT- I

A Poetry from the Elizabethan Age to the Pre Romantic.

B Spenser : Sonnet “ One Day I wrote Her Name”

Milton : “L’allegro”

Donne : “The Canonization”

Pope : Extract from “The Rape of the Lock” (Cantos I & II)

Blake : “The School Boy”

UNIT – II

A Development of Drama : 16th and 17th Century British Drama

B Shakespeare : Othello

UNIT – III

A Prose: Origin and Development of the Essay; Kinds

B Bacon : “Of Youth and Age”

Steele : “On Judicious Flattery”

Lamb : “Dream Children”

Chesterton : “On Lying in Bed”

UNIT – IV

A Friction : Origin and Development of the Novel.

B Jane Austen : Pride and Prejudice.



**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 Orwel
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

**B.A. [ Maths, English, History**

**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. Tualsee Das ke Dohe
3. Raheem ke Dohe
4. Bihahee Lal ke Dohe
5. Agodhya simha Upadhyar Harioudh – (Karma veer)
6. Mythilee Saran Gupta – (Kaikeyee ka Pasehattap)
7. Sohanlal Dvivadi – (Yugaratar Babu)
8. Jaya Shankar Prasad – Hamara Pyara Bharat varsh
9. Surya Kanth tripathee 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. Dahij Pratha
5. Bekaree kee Samasya
6. Saha Siksh
7. Vidyarthi Aur Rajaneethi
8. Paryavaran Pradushan
9. Apna Prija kavi
10. Doora Darshan

C) CHAPTERS TO BE STUDIED FROM HISTORY OF HINDI LITERATURE

1. Kala Vibhajan
2. VeeraGatha kal Aur Chand baradayee
3. Nirguna Bhakri Aur Kbir Das
4. Krishna Bhakti Aur Sura Das
5. Rama Bhakti Aur Thulaseedas
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.

**B.A. [Maths, English, History**

**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. Aarthanthyanyasa 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, Cincema etc

(SOCIAL WELL BEING)

vi) Gunpowder, Glam Metallurgy, Soutces of energy (Wood coal, oil, electricity, atomic power)

Non-cconventional sources (Wind, Water, solar cells, biogas theothermal): Clock, computer.

(INDUSTRY)

4. Relations between Sceinece and Society: complementary an doccasionally adverse also

Capitalism-leading to better means of communication to over exploit resources

Warfare: Development of gunpower, bomb, jeepradar, ICBM, biological killers etc.

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

**Paper title** [ Indian Archaeology With Reference To India

**Paper number**

Group Paper - 4

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

**PAPER – IV (OPTIONAL (C) INDIAN ARCHAEOLOGY WITH REFERENCE TO ANDHRA**

1. Archaeology – Definition – Relation to other subjects – Value of Study.
  2. Elementary Knowledge of Pre-history of India – Charcolithic – Bronze – Iron – Ages
  3. An excavated site – Indus valley Sites – Nagarjuna Konda
  4. Epigraphy:
    - a. Materials used. Languages – Dates – Contents values for History.
    - b. Study of Inscriptions
      1. Major Rock Edicts XIII of Ashoka
      2. Nasik Prasasthi of Gautamiputra Satakarni
      3. Malkapuram Inscription of Rudramba
      4. Simhachalam Inscription of Krishna Deva Raya
      5. Numismatics: Metals – Symbols – Value for History
    - c. Architecture:
      - a. Beginnings
      - b. Buddhist Stupas (Andhra)
      - c. Jain Cave temple (Udayagiri)
      - d. Hindu Rock Cut Architecture – Structural temples Classification – early Chalukyan Style – Pallava – Chola – Kakatiya – Vijayanagar Styles.
      - e. North Indian Temple – A Survey.
  7. Sculpture: Beginnings – Sanchi – Amaravathi.
  8. Iconography : Brahma , Vishnu, Siva, Ganapathi, Kumara.
  9. Paintings: Buddhist Paintings – Subject Matter – Style Colour Scheme – Ajanta.
  10. Survey Report – On any Historical Monument.
- Books for Study And Reference:

1. Indian Archaeology Today : H.D. Sankalia
2. Introduction to Archaeology : S.K. Dikshit
3. Indian Epigraphy : C. Siva Rama Murthy
4. Indian Epigraphy : D.C. Sarkar
5. Coins of India : C.J. Brown
6. Satavahana Coins : M. Rama Rao
7. Indian Architecture : Percy Brown (Hindu & Buddhist)
8. Indian Architecture : E.B. Haveli
9. Monographs of Department of Archaeology and Museums
10. Indian Art : U.S. Agarwal
11. Buddhist and Jaina Iconography : Bhattacharya
12. Indian Painting : C.J. Brown
13. Indian Sculpture and Paintings : E.B. Haveli

**Paper title:** History Of USA

**Paper number**

Group Paper - 4

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

PAPER – IV OPTIONAL (A) HISTORY OF U.S.A. 1776 - 1945 A.D.

1. Geographical features of the North America and their impact on USA
2. Advent of Europeans – British – Spanish – French Settlements in USA – Anglo – French Conflict in U.S.A – British Policy towards the American Colonies.
3. American war of Independence – Causes – course- Treaty of Paris 1783 – confederate constitution – Making of the New Constitution its salient features.
4. The Administration of George Washington and John Adams – Thomas Jefferson – The War of 1812 its causes and results – James Monroe his internal and external policies – The Administration of Andrew of Jackson.
5. Westward Movement – Its impact on the U.S.A. – War with Mexico – Treaty of Gaudalupo Hodalgo.
6. The rise of Political Parties – Economic Development - Nationalism and Secularism.
7. The issue of Slavery – The compromise of 1850 – Abraham Lincoln – The Civil War 1861 – 65 – Political and Social aspects of the Civil War.
8. Post Civil war period. The Radical Reconstruction – Andrew Johnson.
9. Industrial growth – Rise of Big Business – The Agrarian Revolution Trust Laws.
10. Rise of U.S.A. as a World power – American expansion to Caribbean Sea – The Spanish – American War American Expansion to the Pacific – The Open door Policy in China.
11. Theodors Roosevelt – Internal and External Policies Taft and his Dollar Diplomacy.
12. Woodrow Wilson – New Freedom – The U.S.A. in the First World War- Wilson in the peace settlement of Versailles – 1919.
13. Period of Normalcy (1921- 1933). The Washington Conference the Kallong – Briand pact – Disarmament Conference.
14. The World Depression – Causes – F.D. Roosevelt – New Deal and Foreign Policy.
15. The United States in the Second World War – its role World Affairs after 1945.

**Maps Compulsory**

1. Clonical America
2. American War of Independence
3. Westward Movement
4. U.S.A. Political

**Books for Study & Reference**

1. The United States of America: A History by Parkes, H.B.
2. The American Pageant: Thomas, A. Bailey.
3. History of the United States of America: Elson H.W
4. The growth of American Republic – Vol I & II Morison & Commagar.

**Paper title:** History Of Modern India

**Paper number**

Group Paper - 4

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

History Final B.A. PAPER – IV History of Modern Andhra (1600-1956) A.D.

1. Introduction – Geographical features – A brief outline of the history and culture of Andhras from Satavahanas to the Rayas of Vijayanagar.
2. Condition of Andhra in 17th Century A.D.
3. Advent of Europeans Settlements – Anglo – French Rivalry. French expansion in Deccan – causes for the success of the British – Acquisition of Northern Circars.
4. Condition of Andhra in 18th Century A.D.
5. Andhra under the Company's Rule: Acquisition of ceded Districts permanent Revenue settlement – Sir Thomas Munroe and Ryotwari settlement – Condition of the peasantry – Famines Agricultural Development.
6. Telangana under the Asafjahi's Rule: History of the Asafjahis – Reforms of Salarjung – Conditions of Telangana under the Asafjahis.
7. Impact of the Great Revolt of 1857 on Andhra
8. Industrial Revolution – its impact on trade and industry in Andhra – Administration in Andhra and Telangana in 19th Century A.D.
9. Socio – Cultural awakening in Andhra: Social and Cultural awakening in Andhra and Telangana – Kandukuri Veeresalingam – Raghupati Venkataratnam Naidu – Gurajada Appa Rao – Kommaraju Lakshmana Rao – Vignanachandrika Mandali
10. Freedom Movement in Andhra: Political consciousness in Andhra – Vandematharam Movement – Home Rule Movement, Non Co-operation Movement – Chirala – Palanadu and Pedanandipadu Campaigns. Alluri Sitarama Raju – Rampa Rebellion – Boycott of Simon Commission – Salt Satyagraha, Quit India Movement.
11. Freedom Movement in Telangana: Political awakening in Telangana Role of Nizam. Andhra Mahasabha – Freedom Movement in Telangana – Liberation of Telangana from the Nizam's Rule. Accession of Hyderabad to Indian Union.
12. Andhra Movement: Origin and growth – Andhra Mahasabha – Martyrdom of Potti Sree Ramulu – Formation of Andhra State 1953 – Formation of Andhra Pradesh 1956.
13. Andhra in 20th Century: Telangana People's struggle – Communist Movement in Andhra – Economic and Cultural growth in Andhra Pradesh after 1956 A.D.
14. New Literary Movements – Gidugu Ramamurthy – Viswanadha Satyanarayana – Rayaprolu Subba Rao – Srirangam Srinivasa Rao
15. Great Leaders of Andhra (Brief life Sketches): Diggirala Gopala Krishnaiah – Sarojini Naidu – Konda Venkatappaiah – Unnava Lakshminarayana – Gadicherla Hari Sarvothama Rao – Kasinathuni Nageswara Rao – Pattabhi Seetaramaiah, Prakasam - Madapati Hanumantha Rao – Durgabai Deshmuk – Swami Ramananda Tirtha – Boorgula RamaKrishna Rao – Suravarapu Prathapa Reddy – C.R. Reddy – C.Y. Chintamani, Mutnum Krishna Rao – Puchchlapalli Sundaraiah – Ravi Narayana Reddy – Neelam Sanjiva Reddy.

Books for Study and Reference:

1. Vignana Sarvaswam (Relevant Volumes) : Telugu Bhasha Samiti, Hyderabad
2. Samagrahendra Vignanakosam : Samagrahanda Vignana Kosam□  
(Relevant Volumes) Samithi, Hyderabad
3. Nizam – British Relations : Sarojini Regani
4. History of Medieval Deccean : H.K. Shervani
5. Telangana Vaitalikulu : Sri. M.V.L. Narasimha Rao
6. Alluri Sitaramaraj : Sri Yarramilli Narasimha Rao
7. History of Modern Andhra : Dr. P. Raghunadha Rao
8. Political & Social Factors in Andhra : Dr. B. Kesavanarayana
9. Highlights of Freedom Struggle in A.P. : Sarojini Regani
10. Freedom Struggle in 4 Volumes : Ed. By M. Venkata Rangaiah
11. The Freedom struggle in : Published by Hyderabad State  
Hyderabad 4 vols. Committee
12. Freedom Movement in Andhra : Mamidipudi Venkata Rangaiah &  
N. Innaiah
13. Emergence of Andhra Pradesh : K.V. Narayana Rao
14. Telangana People's Struggle : P. Sundaraiah
15. Veera Telanga – Na Anubhavalu - Gnapakalu
16. Charithrathmaka Telangana Sayudha : Sri Ravi Narayana Reddy  
Poratam
17. Visalandhram : Sri Vavilala Gopala Krishnaiah
18. Economic Development of A.P. : A.V. Raman Rao
19. Andhra Pradesh Dersini : Visalandhra Publishing House,□  
Vijayawada
20. Mumroe and the Development of Administrative Policy : Beaghole.



**Paper title:** History Of Modern Europe

**Paper number**

Group Paper - 3

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

BA HISTORY FINAL YEAR PAPER – III COMPULSORY

History of Modern Europe (1789 to 1960 A.D.)

Introduction: Political, Social, Economic, Religious conditions of Europe in 1789

(A brief outlines of the Renaissance, Reformation and the Political history of Spain, France, Prussia, Austria, Russia upto 1789 is to be dealt).

The French Revolution 1789: Causes of the Revolution – course of the Revolution. The constituent Assembly and its work. The National Convention and its achievements –Part played by Mirabeau, Danton – Robespiers The Directory – Effects of the Revolution.

The era of Napoleon Bonaparte: Early life – Rise of Napoleon, Napoleon as emperor – His wars, Fall of Napoleon – Estimate

Reaction and Liberalism: The Vienna peace settlement 1815 Matternich – The Concert of Europe – The Holy Alliance – The July Revolution of 1830. February Revolution of 1848.

The Industrial Revolution – Its effects.

France – Second Republic – Napoleon III – His domestic and foreign policy – Third Republic.

National Movements: The Unification of Italy – The Unification of Germany – Bismark.

The Eastern question:

- a. Background – Crimean War – Treaty of Paris
- b. Russo – Trukshi – War – Treaty of Berlin
- c. The Balkan War (1912 – 1913)

The European Alliance and Imperial Rivalry (1870 – 1914)

- a. The Triple Alliance
- b. The triple entents. Imperial rivalry in Asia and Africa

The First World War- Causes – Courses – Treaty of Versailles.

Russian on the eve of October Revolutions – 1917 October Revolution – Importance, Lenin Stalin.

The League of Nations – its work and its failures

Rise of Dictators:

1. Mussolini – Fascism in Italy
2. Hitler – Nazism in Germany

Pacts between the Two World Wars

Locarno Pact – Kellong – Braind pact – Franco – Russian alliance Berlin, Rome - Tokyo – Axis.

The Second World War – Causes – Courses, effects.

Europe after the Second World War ( 1945 – 1960)

- a) United Nations Organisation – Organs its achievements and short comings
- b) European Economic Recovery Programme – Marshall plans and Malatev Plan
- c) Berlin Crisis
- d) Cold War –Military Pacts – NATO, SEATO, CENTO Anzus pact.
- e) Hungarian crisis 1956

#### Maps Compulsory

- 1. Napoleonic empire – 1810
- 2. Congress of Vienna – 1815
- 3. Unification of Italy – 1870
- 4. Unification of Germany – 1871
- 5. Europe in 1919
- 6. Europe in 1945

#### Books for study and Reference

- 1. Modern Europe upto 1870 Hayes, C.J. A.H.
- 2. Modern Europe since 1870 Hayes C.J.A.H.
- 3. History of Modern Europe since 1789 – Mahajan, V.D
- 4. Modern Europe upto 1945 – Hazan, C.D.
- 5. Europe Since Naopleon - Thamson, D.
- 6. A Text book of Modern of European History – Raghubir Dayal.
- 7. Modern European History, Telugu Academy
- 8. Modern European History 1789 – 1973 – Peacock, H.L.
- 9. History of Modern Europe 1878 – 1915 – Gooch, G.P.

**B.A. [ Maths, English, History**

**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

**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:** SPECIAL ENGLISH - IV

**Paper number**

Group Paper - 4

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

BA SPECIAL ENGLISH, SECOND YEAR, PAPER – IV  
(LANGUAGE AND LITERATURE)  
(To come into force from the academic year 2002-2003)

Unit – I : History of English Literature

A : Characteristics of Ages

1. Age of Chaucer 3. Age of Milton
2. Age of Shakespeare 4. Age of Dryden, Pope, John

B: Characteristics of Ages :

1. Age of Wordsworth 3. Age of Hardy
2. Age of Tennyson 4. Modern Age.

C: Contribution of Authors :

(A Critical appreciation of the works of the following authors)

----- 2. Spenser 3. Marlowe 4. Pope 5. Keats

6. Charles Dickens 7. Mathew Arnold 8. T.S. Eliot

UNIT – II History of English Language

1. Origin of Language
2. Indo-European family of languages and the descent of English
3. Grimm's Law and Verner's Law
4. Characteristics of Old English
5. Characteristics of Middle English
6. Indian Element in English
7. American English
8. English as an International Language

UNIT – III Figures of Speech (Definition and Illustration)

1. Simile 2. Metaphor 3. Personification 4. Apostrophe 5. Climax
6. Bethod 7. Hyperbole 8. Pun 9. Oxymoron 10. Synecdoche
11. Metonymy 12. Litotes 13. Zeugma 14. Epigram 15. Irony
16. Antithesis 17. Paradox 18. Onomatopoeia 19. Alliteration
20. Euphemism

Suggested Books of or reference:

1. Hudson: An outline History of English Literature
2. Compton Ricket : A history of English Literature.
3. Legouis Emile : A short history of English Literature
4. F.T. Wood: An outline History of the English Language
5. A.C. Baugh: History of the English Language.
6. M.H. Abrams : Glossary of Literary terms.

Question Paper Format

Question 1: One essay question to be answered out of three (300 words) from Unit I - A

Question 2 : One Question to be answered out of three (300 words) from Unit I - B

Question 3: Two questions to be answered out of four ( 150 words each) from Unit I – C.

**Paper title:** SPECIAL ENGLISH - III

**Paper number**

Group Paper - 3

**Maximum marks**

**Model Question Papers / Past Question Papers**

**Syllabus details**

BA SPECIAL ENGLISH, SECOND YEAR, PAPER – III  
(To come into force from the academic year 2002-2003)

Detailed Study:

Unit – I

(Shakespearean Comedy or Romance)

Shakespeare: A Mid Summer Night's Dream

Unit – II:

(Classical Tragedy)

Milton: Samson Agonistes

Non-detailed Study:

UNIT – III: (Modern Drama)

Bernard Shaw: Apple Cart

UNIT – IV: (Fiction: One Indian and One British novelist)

Gold Smith : The Vicar of Wake field.

Annotations:

UNIT – V: Two annotations from each detailed text.

Question Paper Format

Question 1: One essay question to be answered out of three (400 words) from Unit I 20 Marks.

Question 2: One essay question to be answered out of three (400 words) from Unit II 20 Marks.

Question 3: One essay question to be answered out of three (400 words) from Unit III 20 Marks.

Question 4: One essay question to be answered out of three (400 words) from Unit IV 20 Marks

Question 5: Four Annotations to be answered choosing two from each detailed text 4 x 5 = 20 Marks.

