B.Sc I Semester (Maths) Syllabus

Course Code	Course Title	Type	Total Credit	EOSE Marks	Internal Assessment Marks	Total Marks
CHM-51T-101	Structure Bonding, Mathematical Concepts and states of matter	Theory	4	80	20	100
CHM-51P-102	Chemistry Lab-1	Practical	2	40	10	50
UG0808-MAT-51T-101	Discrete Mathematics & Optimization Techniques	Theory	6	120	30	150
UG0803-PHY-51T-101	Mechanics & Oscillations	Theory	4	80	20	100
UG0803-PHY-51P-102	Physics Lab 1	Practical	2	40	10	50
GEO-51T-101	Physical Geography I	Theory	4	80	20	100
GEO-51P-102	Practical I	Practical	2	40	10	50
	General Hindi	AEC	2	40	10	50
	Foundation of English language	AEC	2	40	10	50
	Computer Fundamental	SEC	2	40	10	50
	Anandam	VAC	2			50

Chemistry

Structure Bonding, Mathematical Concepts and states of matter

Syllabus

CHM-51T-101: Structure-bonding, Mathematical concept and States of matter.
(4 Hrs./week)

Duration	Maximum Marks	Minimum Marks
1 Hour	Midterm – 20 Marks	Midterm – 08 Marks
3 Hours	EoSE – 80 Marks	EoSE – 32 Marks

Unit-I

Ionic Solids: General characteristics of ionic bonding, Ionic structures, radius ratio effect and coordination number, limitation of radius ratio rule, Lattice enthalpy and Born-Lande equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, Solvation enthalpy and solubility of ionic solids, polarizing power and polarizability, Fajan's rule. lattice defects, semiconductors.

Metallic bond: Free electron, valence bond and band theories.

Weak Interactions: Hydrogen bonding, Van der Waals forces.   **15 Lecture**

Unit-II

Covalent Bond: Valence bond theory and its limitations, Directional character, Hybridization. Valence shell electron pair repulsion (VSEPR) theory to NH_3, H_3O^+, SF_4, ClF_3, ICl_2^-, H_2O.

Molecular Orbital Theory: LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for combinations of atomic orbitals, MO treatment of homonuclear and heteronuclear (CO and NO) diatomic molecules. Comparison of VB and MO approaches.

Multicenter bonding in electron deficient molecules, bond strength and bond energy, ionic character in covalent compounds, calculation of percentage ionic character from dipole moment and electronegativity difference.   **15 Lecture**

Unit-III

Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs and calculations of slopes, differentiation of functions like k_x, e^x, x^n, sinx and log x; maxima and minima, partial differentiation and reciprocity relations, integration of some useful/relevant functions; permutations and combinations, factorials, probability. Matrices and Determinant.

Liquid State: Intermolecular forces, structure of liquids (a qualitative description). Structural differences between solids, liquids and gases. Liquid crystals: Difference between liquid crystal, solid and liquid.

Solid State: Definition of space lattice, unit cell.

Laws of crystallography- (i) Law of constancy of interfacial angles (ii) Law of rationality of indices (iii) Law of symmetry. Symmetry elements in crystals.

Basic concept of X-ray diffraction by crystals. Derivation of Bragg's equation. Determination of crystal structure of NaCl and CsCl (Laue's method and powder method.). Defects in solids.   **15 Lecture**

Unit- IV

Gaseous State: Postulates of kinetic theory of gases, deviation from ideal behavior, van der Waals equation of state.

Critical Phenomenon: PV isotherms of real gases, continuity of states, the isotherms of van der Waals equation, relationship between critical constants and van der Waals constants, the law of corresponding states, reduced equation of state.

Molecular Velocities: Root mean square, average and most probable velocities. Qualitative

discussion of the Maxwell's distribution of molecular velocities, collision number, mean free path and collision diameter. Liquification of gases (based on Joule-Thomson effect.)

Colloidal State: Definition of colloids, classification of colloids.

Solids in liquids (sols): properties - kinetic, optical and electrical, stability of colloids. Protective action, Hardy-Schulze law, gold number.

Liquids in solids (gels): classification, preparation and properties, inhibition, general applications of colloids.

Liquids in liquids (emulsions): types of emulsions, preparation. Emulsifier.

15 Lecture

Suggested Books and References:
1. Lee, J.D. Concise Inorganic Chemistry Wiley, India.
2. Housecroft, Catherine E. & Sharpe, Alan G. Inorganic Chemistry, Pearson Education Ltd.
3. Tuli, G. D. Advanced Inorganic Chemistry, S. Chand, New Delhi.
4. Satya Prakash Advanced Inorganic Chemistry, S. Chand, New Delhi.
5. Adams, D. M. Inorganic Solids – Introduction to Concepts in Solid-state Structural Chemistry, John Wiley, London.
6. Puri, Sharma & Kalia, Principles of Inorganic Chemistry, S. Chand, New Delhi.
7. Puri, B. R., Sharma, L. R. & Pathania, M. S. Principles of Physical Chemistry, Vishal Publishing Co.
8. Gurdeep Raj, Advanced Physical Chemistry, Goel Publishing House.
9. Atkins, W. Physical Chemistry, Oxford University Press.
10. Silby, R. J. & Alberty, R. A. Physical Chemistry, John Wiley & Sons.
11. Barrow, G.M. Physical Chemistry, Tata McGraw-Hill.
12. Kapoor, K. L. A Textbook of Physical Chemistry, (Volume I) Macmillan India Ltd.

Syllabus

CHM-51P-102: Chemistry Lab I   (4 Hrs./week)

Duration	Maximum Marks	Minimum Marks
2 Hours	Midterm – 10 Marks	Midterm – 04 Marks
4 Hours	EoSE – 40 Marks	EoSE – 16 Marks

Inorganic Chemistry   **10 marks**

Separation and identification of six radicals (3 cations and 3 anions) in the given inorganic mixture including special combinations.

Organic Chemistry

Laboratory Techniques   **3 marks**

(a) Determination of melting point (naphthalene, benzoic acid, urea, etc.); boiling point (methanol, ethanol, cyclohexane, etc.): mixed melting point (urea-cinnamic acid, etc.).

(b) Crystallization of phthalic acid and benzoic acid from hot water, acetanilide from boiling water, naphthalene from ethanol etc.; Sublimation of naphthalene, camphor, etc.

Qualitative Analysis   **7 marks**

Identification of functional groups (unsaturation, phenolic, alcoholic, carboxylic, carbonyl, ester, carbohydrate, amine, amide, nitro and hydrocarbon) in simple organic compounds (solids or liquids) through element detection (N, S and halogens).

Physical Chemistry

Viscosity and Surface Tension: **10 marks**

a) To determine the viscosity/surface tension of a pure liquid (alcohol etc.) at room temperature. (Using the Ostwald viscometer/stalagmometer).

b) To determine the percentage composition of a given binary mixture (acetone and ethyl methyl ketone) by surface tension method.

c) To determine the percentage composition of a given mixture (non- interacting systems) by viscosity method.

d) To determine the viscosity of amyl alcohol in water at different concentration and calculate the excess viscosity of these solutions.

Viva voce   **5 marks**

Practical Record   **5 marks**

Syllabus: UG0803-Three/Four Year Bachelor of Science (Maths Group)

I-Semester-Mathematics
(2023-2024 & onwards)

Type	Paper code and Nomenclature	Duration of Examination	Maximum Marks (CA + EoSE)	Minimum Passing Marks (CA + EoSE)
Theory	UG0803-MAT-51T-101-Discrete Mathematics & Optimization Techniques	1 Hrs-CA 3 Hrs-EoSE	30 Marks-CA 120 Marks-EoSE	12 Marks-CA 48 Marks-EoSE

Semester	Code of the Course	Title of the Course/Paper	NHEQF Level	Credits
I	UG0803-MAT-51T-101	Discrete Mathematics & Optimization Techniques	5	6
Level of Course	Type of the Course	Delivery Type of the Course		
Introductory	UG	Lecture, Ninety lectures		
Prerequisites	Mathematics course of XII std. of Central Board of Secondary Education or equivalent.			
Objectives of the Course:	The objective of the course is to expose discrete structures and involved topology, an optimization of real world problems.			

Syllabus

UG0809-MAT-51T-101-Discrete Mathematics & Optimization Techniques

Teaching: 6 Hours per Week   Duration of Examination: 3 Hours

Maximum Marks (CA + EoSE): 30 Marks-CA and 120 Marks-EoSE

Minimum Passing Marks (CA + EoSE): 12 Marks-CA and 48 Marks-EoSE

The Question Paper will be divided into two parts, Part-A and Part-B.

Part-A: Part-A contains one compulsory question consisting of 8 short answer type questions, each carrying 3 marks. These 8 short answer questions are selected from all the units, with two questions from each unit. The Part-A of the question paper evaluates the candidate's knowledge, understanding, and application of the topics/texts covered in the syllabus.

Part-B: Part-B comprises four questions with one question from each unit, each carrying 24 marks. Each question in Part-B has four subparts. The candidate must attempt all four units by selecting any two subparts from each question. Each subpart within a question carries equal marks.

Note: The question Paper will be set in both Hindi and English.

Unit –I

Relations on a set, Equivalence class, partial order relations, Chains and Anti-chains. Lattices, Distributive and Complemented Lattices. Boolean algebra, conjunctive normal form, disjunctive normal form. Pigeon hole principle. Principle of inclusion and exclusion. Propositional calculus, Basic logical operations, Truth tables, Tautologies and contradictions.

Unit -II

Discrete numeric functions, Generating functions, Recurrence relations, linear recurrence relation with constant coefficients and their solutions, Total solutions, Solution by the method of generating functions. Basic concepts of graph theory, Types of graphs, Planar graphs, Walks, Paths & Circuits, Shortest path problem.

Unit –III

Planar graphs, Operations on graphs (union, join, products). Matrix representation of graphs, Adjacency matrices, Incidence matrices. Hamiltonian and Eulerian graphs. Tree, Spanning tree, Minimum spanning tree, Distance between vertices, Center of tree, Binary tree, Rooted tree.

Unit-IV

Linear programming problems. Basic solution. Some basic properties and theorems on convex sets. Simplex algorithm, Two-phase method. Duality. Solution of dual problems. Transportation problems. Assignment problems.

Suggested Books and References –

1. V.K.Balakrishnan, Introductory Discrete Mathematics, Prentice-Hall, 1996.
2. N. Deo, Graph Theory with Applications to Computer Science, Prentice-Hall of India.
3. C.L. Liu, Elements of Discrete Mathematics, (Second Edition), McGraw Hill, International Edition, 1986.
4. Kenneth H. Roson, Discrete Mathematics and Its Applications, Tata Mc-GrawHiils, New Delhi, 2003.
5. G. Hadley, Linear Programming, Narosa Publishing House, New Delhi, 2002.
6. Hamdy A. Taha, Operations Research, An Introduction (9th edition), Prentice-Hall, 2010.

Course Learning Outcomes:

The course would enable the student

1. To understand the ideas in discrete structures viz. Partially ordered sets, Lattices ,Graphs etc. and allied conceptual intricacies with applications.
2. To understand mathematical formulation of optimization problems and allied theoretical concepts for solution methodologies.

Physics

Mechanics & Oscillations

Syllabus: UG0803-B.Sc.
I-Semester- Physics
(2023-2024)

Type	Paper code and Nomenclature	Duration of Examination	Maximum Marks (Midterm + EoSE)	Minimum Marks (Midterm + EoSE)
Theory	UG0803-PHY-51T-101- Mechanics& Oscillations	1 Hrs-MT 3 Hrs-EoSE	20 Marks-MT 80 Marks-EoSE	8 Marks-MT 32 Marks-EoSE
Practical	UG0803-PHY-51P-102- Physics Lab-I	2 Hrs-MT 4 Hrs-EoSE	10 Marks-MT 40 Marks-EoSE	4 Marks-MT 16 Marks-EoSE

Detailed Syllabus

PHY-51T-101-Mechanics & Oscillations

Unit - I

Physical Law and frame of Reference: (a) Inertial and non-inertial frames, Transformation of displacement, velocity. acceleration between different frames of reference involving translation. Galilean transformation and invariance of Newton's laws.(b) Coriolis Force: Transformation of displacement, velocity and acceleration between rotating frame, Pseudo forces, Coriolis force, Motion relative to earth,Focult's pendulum.(c) Conservative Forces: Introduction about conservative and non-conservative forces, Rectilinear motion under conservative forces, Discussion of potential energy curve and motion of a particle.(15 Lectures)

Unit -II:

Centre of Mass: Introduction about Centre of Mass. Centre of Mass Frame: Collision of two particles in one and two dimensions (elastic and inelastic), Slowing down of neutrons in a moderator, Motion of a system with varying mass, Angular momentum concept, conservation and charge particle scattering by a nucleus.

Rigid body: Equation of a motion of a rotating body. Inertial coefficient. Case of J not parallel to ω. The kinetic energy of rotation and the idea of principal axes. The processional motion ofthe spinningTop.(15 Lectures)

Unit -III

Motion under Central Forces: Introduction about Centrul Forces, Motion under central forces, gravitational interaction. inertia und gravitational mass, General solution under gravitational interaction. Keplers laws, Discussion of trajectories, Cases of elliptical and circular orbits, Rutherford scattering.

Damped Harmonic Oscillations: Introduction about oscillations in a potential well, Damped force and motion under damping. Damped Simple Harmonic Oscillator, Power dissipation, Anharmonic oscillator and simple pendulum as an example.(15 Lectures)

Unit-IV

Driven Harmonic Oscillations: Driven harmonic oscillator with damping, Frequency response. Phase factor, Resource,.Seriau and parallel of LCR circuit, ElectromechanicalGalvanometer.

Coupled Oscillations: Equation of motion of two coupled Simple Harmonic Oscillators, Normal modest motion in mixed modes. Trust behavior, Dynamics of a number of oscillators with neighbor interactions.   (15 Lectures)

Suggested Books and References –

1. Mechanics, Berkeley Physics, Vol.1, Kittel, Knight, et.al. 2007, Tata McGraw-Hill
2. An introduction to Mechanics, D. Kleppner, R.J. Kolenkow, 1973, McGraw-Hill
3. Feynman Lectures, Vol. I, R.P. Feynman, R.B. Leighton, M. Sands, 2008, Pearson Education.
4. Course of Theoretical Physics, Vol-I Mechanics, L.D. Landau, E.M. Lifshitz, Butterworth-Heinemann
5. Mechanics, D.S. Mathur, S. Chand and Company Limited,
6. Theoretical Mechanics, M.R. Spiegel, 2006, Tata McGraw Hill.
7. Introduction to Classical Mechanics: With Problems and Solutions David Mari...

8. Classical Mechanics, Herbert Goldstein, Charles P. Poole, and John L. Safko

9. Classical Mechanics, John R. Taylor

10. Mechanics, Keith R. Symon

11. The Physics of Waves & Oscillations,Bajaj
12. Waves, A. P. French

Suggested E-resources:

1. **Online Lecture Notes and Course Materials:**
- MIT OpenCourseWare: Classical Mechanics - This resource provides lecture notes, problem sets, and solutions for a complete course on classical mechanics: https://ocw.mit.edu/courses/physics/8-01sc-classical-mechanics-fall-2016/
- HyperPhysics - This online resource provides concise explanations and interactive simulations for various topics in mechanics: http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html
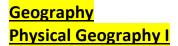
Physics Lab

UG0803-PHY-51P-102: Physics Lab-I

The colleges are free to set new experiments of equivalent standards. This should be intimated and approved by the Convener, Board of Studies before the start of the academic session. It is binding on the college to have an experimental set-up of at least ten experiments listed below. In case the number of experiments performed by the student is less than eight, his marks shall be scaled down in the final examination on a pro-rata basis. Laboratory examination paper will be set by the external examiner out of eight or more experiments available at the centre

List of Experiments —

1. Study the variation of the time period with amplitude in large-angle oscillations using a compound pendulum.
2. To study the damping using a compound pendulum.
3. To study the excitation of normal modes and measure frequency splitting into two coupled oscillators.
4. To study the frequency of energy transfer as a function of coupling strength using coupled oscillators.
5. To study the viscous fluid damping of a compound pendulum and determinethe dampingcoefficient and Q of the oscillator.
6. To study the electromagnetic damping of a compound pendulum and to find the variation of damping coefficients with the assistance of a conducting lamina.
7. Study of normal modes of a coupled pendulum system. Study of oscillations in mixedmodes and find the period of energy exchange between the two oscillators.
8. To determine Young's modulus by bending of the beam.
9. To determine Y, σ and n by Searle's method
10. To determine the modulus of rigidity of a wire using Maxwell's needle.
11. To determine the moment of Inertia of a fly-wheel.
12. To find the motion of a spring and calculate (a) Spring constant (b) Acceleration due to gravity (g) (c) Modulus of Rigidity

GEO-51T-101- Physical Geography-I

Duration- 3 Hours

Max. Marks- 20+80

Min. Marks- 8+32

Code of Course	Title of the Course	Level of the Course	Credits of the Course
GEO-51T-101	Physical Geography-I	5	4
Types of the Course	Delivery type of the Course		
Major	Lecture, 60 Lectures including diagnostic and formative assessments during lecture hours		
Prerequisites	Central Borad of Secondary Education or Equivalent		
Objectives of the Course	To attain knowledge in detail about physical geography and associated branches.		

Syllabus

GEO-51T-101- Physical Geography-I

Duration- 3 Hours

Max. Marks- 20+80

Min. Marks- 8+32

Unit – I

Definition, Scope & Development of Physical Geography. Origin of the Earth- The Big-Bang Hypothesis; The Interstellar Dust Hypothesis. Geological History of the Earth. Origin of the Continents & Oceans- Continental Drift Theory; Plate Tectonic Theory.

Unit – II

Interior of the Earth. Earth Movements –Endogenetic & Exogenetic. Isostasy – views of Airy; Pratt & Holmes. Volcanoes & Earthquakes.

Unit – III

Mountain Building Theories– Kobber & Holmes. Rocks– Classifications & Characteristics. Denudation- Erosion & Weathering; Cycle of Erosion– views of W.M. Davis & W. Penck. Drainage System & Pattern.

Unit – IV

Erosional & Depositional Work and Topographies of River, Underground Water, Glaciers, Wind & Oceanic Waves.

Recommended Readings:

* Bloom, A. L. (2003). Geomorphology: A Systematic Analysis of Late Cenozoic Landforms. New Delhi: Prentice-Hall of India.
* Christopherson, Robert W. (2011). Geo-systems: An Introduction to Physical Geography 8 Ed. England: Macmillan Publishing Company.
* Ernst, W.G. (2000). Earth systems: Process and Issues. Cambridge: Cambridge University Press. Gautam, A. (2010). Bhautik Bhugol. Meerut: Rastogi Publications.
* Kale, V. S. and Gupta, A. (2001). Introduction to Geomorphology. Hyderabad: Orient Longman.
* Selby, M.J. (2005). Earth s Changing Surface. United Kingdom: OUP.
* Singh, S. (2009). Bhuatic Bhugol ka Swaroop. Allahabnad: Prayag Pustak.
* Skinner, Brian J. and Stephen, C. (2000). The Dynamic Earth: An Introduction to physical Geology, John Wiley and Sons.
* Strahler, A.N. and Strahler, A.H. (2005). Modern Physical Geography. John Wiley & Sons. Revised edition.
* Thornbury, W. D. (1968). Principles of Geomorphology. Wiley.

GEO-51P-102- Practical-I

Duration- 4 Hours

Max. Marks- 10+40

Min. Marks- 4+16

Pattern of Examination	Bifurcation of Marks	Time
Written Test	20	2 Hours
Field Survey and Viva-Voce	7+3	2 Hours
Record Work and Viva-Voce	7+3	

*Note-

Unit – I

Definition and Types of Scale: Simple, Comparative, Diagonal and Vernier. Methods of Relief Representation: Hachure, Hill-shading, Bench mark, Spot- Height, Form-lines and Contours.

Unit – II

Representation of Relief features through Contours and description – Conical hill, Plateau, Ridge, Cliff, Escarpment, Gorge, Waterfall, V-shaped valley, U- shaped valley and Hanging valley, Types of Slopes- Gentle, Steep, Uniform, Undulating and Terraced; Lake, Caldera, Spur.

Recommended Readings:

- Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. London: Methuen.
- Rhind, D. W. and Taylor, D. R. F. (2000). Cartography: Past, Present and Future. International Cartographic Association.
- Robinson, A. H., (2009). Elements of Cartography. New York: John Wiley and Sons.
- Robinson, A.H. (2000). Elements of Cartography. U.S.A.: John Wiley& Sons.
- Sarkar, A. K. (2005). Practical Geography: A Systematic Approach. Calcutta: Oriental Longman.
- Sharma, J. P. (2010). Prayogik Bhugol. Meerut: Rastogi Publishers.
- Singh, R.L. and Dutt, P.K. (2010). Elements of Practical Geography. New Delhi: Kalyani Publishers.

Course Learning Outcomes:
By the end of the course, students should be able to:
1. To make students aware about the measurements and representative distances.
2. To develop skills and competency regarding area analysis and map making with relief features.

AEC (General Hindi)

Total 50 Marks(40+10)

40 marks (EOSE)

Part A- 8 Questions of 2 Marks each (16 Marks)

Part B – 2 Questions of 4 Marks each (8 Marks)

Part C – 2 Questions of 4 Marks & 1 question of 8 Marks (16 Marks)

10 Marks (Internal Assessment)

बी.ए./बी.एससी./बी. कॉम – प्रथम सेमेस्टर

सामान्य हिन्दी (व्याकरण)

2 क्रेडिट– 50 अंक
प्रश्न पत्र– 40 अंक
आंतरिक मूल्यांकन– 10 अंक

उद्देश्य (Objectives)	1. विद्यार्थियों में अभिव्यक्ति कौशल विकसित करना। 2. हिन्दी भाषा को अधिक सशक्त और व्यापक बनाना तथा विद्यार्थियों में भाषा प्रयोग की क्षमता को विकसित करना। 3. शोध के लिए नवीन शैक्षिक दृष्टि की पृष्ठभूमि तैयार करना। 4. सृजनात्मक लेखन तथा आलोचनात्मक दृष्टि का विकास करना।
अधिगम प्रतिफल (Learning Outcomes)	1. भाषायी ज्ञान से अभिव्यक्ति और सम्प्रेषण कौशल का परिमार्जन हो सकेगा। 2. हिन्दी व्याकरण का ज्ञान सृजनात्मकता में उपयोगी सिद्ध हो सकेगा। 3. भाषायी क्षमता से वैश्विक परिदृश्य में हिन्दी का उन्नयन कर सकेंगे। 4. हिन्दी भाषा का व्यावहारिक ज्ञान प्राप्त कर सकेंगे।

प्रश्नपत्र का अंक विभाजन

यह प्रश्नपत्र तीन खण्डों (अ, ब, स) में विभक्त है।

खण्ड– अ के अंतर्गत प्रश्न संख्या 1 में इकाई 1 के भाग (क) एवं (ख) तथा इकाई 2 के भाग (क) एवं (ख) प्रत्येक से दो–दो प्रश्न कुल आठ प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न 02 अंक का होगा।

खण्ड– ब के अंतर्गत प्रश्न संख्या 2, 3 में इकाई 3 के भाग (क) एवं भाग (ख) से एक–एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न 04 अंक का होगा।

खण्ड– स के अंतर्गत प्रश्न संख्या 4, 5, 6 दीर्घ उत्तरीय प्रश्न हैं जिसमें इकाई 4 के भाग (क) से दो प्रश्न (प्रत्येक 04 अंक) तथा भाग (ख) से एक प्रश्न (आंतरिक विकल्प सहित) 8 अंक का होगा।

इकाई–1

(क) **शब्द निर्माण**– उपसर्ग एवं प्रत्यय, संधि एवं समास।

(ख) **शब्द के प्रकार**– संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया–विशेषण।

इकाई—2

(क) शब्द एवं वाक्यगत अशुद्धि संशोधन।

(ख) मुहावरे एवं लोकोक्तियाँ अर्थ एवं वाक्य प्रयोग।

इकाई—3

(क) संक्षेपण।

(ख) पल्लवन।

इकाई—4

(क) पत्र लेखन शासकीय एवं अर्द्धशासकीय पत्र, कार्यालय आदेश, अधिसूचना, ज्ञापन, अनुस्मारक निविदा का प्रारूप।

(ख) निबंध लेखन (शब्द सीमा—400)

आंतरिक मूल्यांकन

राजस्थान के किसी ऐतिहासिक अथवा सांस्कृतिक स्थल की यात्रा पर विवरणात्मक लेख।

अनुशंसित ग्रंथ—

1. हिन्दी व्याकरण— कामताप्रसाद गुरु
2. हिन्दी की वर्तनी और शब्द विश्लेषण— किशोरी दास वाजपेयी
3. हिन्दी भाषा की संरचना— भोलानाथ तिवारी
4. अच्छी हिन्दी— रामचन्द्र वर्मा
5. आधुनिक हिन्दी व्याकरण और रचना— डॉ. वासुदेवनन्दन प्रसाद, भारती भवन पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स
6. हिन्दी का मानक स्वरूप — देवर्षि कलानाथ शास्त्री, साहित्यागार, जयपुर
7. अनुप्रायोगिक हिन्दी— डॉ. कृष्ण कुमार गोस्वामी, अरूणोदय प्रकाशन, नई दिल्ली

AEC (General English)

Total 50 Marks(40+10)

EOSE- 40 Marks

Unit I- 5 Marks

Unit II- 5 Marks

Unit III- 10 Marks

Unit IV – 20 Marks

Internal Assessment 10 Marks

Foundations of English Language: A Comprehensive Introduction
2023-24 *General English*
Semester I

Credit: 2   Max. Marks: 50
Duration: 3 hrs   (40 + 10)

The syllabus aims at achieving the following objectives:

1. Enhancing vocabulary with different types of words
2. Translation from Hindi to English and vice versa
3. Reinforcing selected components of grammar and usage
4. Strengthening comprehension of poetry, prose and short-stories
5. Strengthening compositional skills in English for paragraph writing. CVs and job applications.

The Pattern of the Question Paper will be as follows:

Unit I: Vocabulary and Translation   (20 marks) 5
1. Homophones and Homonyms   (06)
2. Translation of 05 Words from Hindi to English   (07)
   from English to Hindi   (07)

Unit II: Grammar and Usage   (15 marks) 5
3. Elements of a Sentence   (05)
4. Tense   (05)
5. Punctuation of a Short Passage with 10 Punctuation Marks   (05)
   (As discussed in Quirk and Greenbaum)

Unit III: Comprehension   (45 marks) 10
Following Essays and Stories in *Essential Language Skills* revised edition compiled by Macmillan for University of Rajasthan General English B. A. /B. Com./B. Sc. Candidates will be required to answer 5 questions out of ten questions from the prescribed texts. Each question will be of two (5) marks.   (25)

6. Bernard Shaw   *Spoken English and Broken English*
7. Ruskin Bond   *Night Train at Deoli*
8. M.K. Gandhi   *The Birth of Khadi*

9. The candidates will be required to answer 5 questions from an unseen passage.

10. One vocabulary question of 5 words from the given passage. ~~(15)~~ ~~(5)~~

Unit IV: Compositional Skills   ~~(20 marks)~~ 20
11. Formal Letter and Writing Emails   ~~(10)~~

12. Paragraph Writing   ~~(10)~~

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Dy. Registrar

Recommended Reading:

Sasikumar, V., Dutta and Rajeevan, A Course in Listening and Speaking-I Foundation Books. 2005.

Sawhney, Panja and Verma eds. English At the Workplace, Macmillan 2003.

Singh, R.P. Professional Communication. OUP. 2004

Judith Leigh. CVs and Job Applications. OUP. 2004

Arthur Waldhorn and Arthur Zeiger, English Made Simple. Upa and Co.

Gunashekar ed. A Foundation English Course for Undergraduates. Book I, CIEFL, Hyderabad.

Quirk and Greenbaum: A University Grammar of English Longman, 1973

VAC (Anandam) 50 Marks

Examination Scheme:

Programme Evaluation Methods:

S.No.	Parameters	Max. Marks
1	Entries in Daily Diary	05
2	Synopsis of Project	10
3	Participation in Anandam Day (Last working day of every month)	10
4	Report of Group Project	25
	Total	50

SEC (Computer Fundamental)

EOSE- 40 Marks

40 Multiple choice questions of 1 marks each

Duration -1 Hour

Internal assessment – 10 Marks

SEC-001 – Computer Fundamentals

Semester	Code of the Course	Title of the Course/Paper		NHEQF Level	Credits
I/II	SEC-001	Computer Fundamentals		5	2
Level of Course	Type of the Course	Credit Distribution	Offered to NC Student	Delivery Type of the Course	
		Theory	Practical		
Introductory	Skill Enhancement	2	-	Yes	30 Hours Theory

Examination Scheme-

Regular Students –

Type	Paper code and Nomenclature	Duration of Examination	Maximum Marks (Midterm + EoSE)	Minimum Marks (Midterm + EoSE)
Theory	SEC-001 –Computer Fundamentals	1 Hrs-MT 1 Hrs-EoSE	10 Marks-MT 40 Marks-EoSE	4 Marks-MT 16 Marks-EoSE

Question paper for Computer Fundamentals will be so set that it has 40 multiple choice questions (Bilingual) of one mark each. The Question paper will be of duration of 1 hours. The examinees will have to give their answers on OMR sheet only to be provided by the University whose evaluation will be done based on OMR Scanning Technology.

SEC-001- Computer Fundamentals

Unit – I

Introduction to Information Technology: Evolution and generation of computers, Type of computers, Micro, mini, mainframe and Super computer, Architecture of a computer system: CPU, ALU, Memory (RAM, ROM families, Cache Memory, Input/Output Devices, Pointing Devices, Hardware and Software

Operating System and Programming Languages: Concept of Operating System, Need, Types of Operating Systems, Batch, Single User, Multi-Processing, Distributed and Timeshared operating systems, Introduction to UNIX, Linux, Windows, Window NT, Virtual Machine, Programming Languages, Low Level and High Level, Generation of Languages, 3 GL and 4 GL languages, Procedural Programming Languages, Object Oriented Programming languages, Functional Programming Languages, Scripting Languages, Logic Programming Languages, Command Line Interface and Graphical User Interface

(8 Lectures)

Unit -II

The Internet: History and Functions of the Internet, Working with Internet, Web Browsers, World Wide Web, Uniform Resource Locator and Domain Names, Uses of Internet, Search for Information, Email, Chatting, Instant Messenger Services, News Group, Teleconferencing, Video Conferencing, E-Commerce and M-Commerce, E-services -Online Banking, Online Payment Modes, Mobile Wallets, Social Networking Sites, E-Learning/ Online Educations, Cloud-Based Storage, Digital Signature

Manage an E-Mail Account, E-Mail Address, Configure E-Mail Account, Login to an Email, Receive Email, Sending Email, Sending Files as Attachments, Adress Book, Downloading files

(8 Lectures)

Unit -III

Social, Legal, Ethical Matters and Network Security: Types of Cyber Threats, how to identify Safe Websites/ Portals, Secure Seals (Verisign/Trust pay etc.), Secure Browsing Habits and Mailing Etiquettes, Social, Legal and ethical aspect of IT, Effects on the way we work Socialise, Operational Areas, Cyber Crime, Prevention of Cyber Crime, Cyber Law, Indian IT Act, Intellectual Property Right, Software Piracy, Copy right and Patent, Software Licencing, Proprietary Software, Free and Open-Source Software, GPL Licence.

(7 Lectures)

Unit-IV

Cyber Security Threats: Security Threats and Attacks (Passive, Active), Types and Effects, Computer Virus, Malware, Adware, Ransomware, Spyware, Emotet , Identity Theft, Denial of Service, Man in Middle, Phishing, MySQL/SQL Injection, Password Attacks

Network Security: Risk Assessment and Security Measures, Assets and Type (Data, Applications System and Network), Security issues and Security Measure (Firewall, Encryption/Decryption), Prevention

(7 Lectures)