B.Sc I (Bio) Semester Syllabus

Course Code	Course Title	Type	Total Credit	EOSE Marks	Internal Assessment Marks	Total Marks
ZOO-51T-101	Animal Diversity	Theory	4	80	20	100
ZOO-51P-102	Practical	Practical	2	40	10	50
BOT-UG-CC01	Diversity of Plant Kingdom	Theory	4	80	20	100
BOP-UG-CC02	Diversity of Plant Kingdom	Practical	2	40	10	50
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
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

Zoology

Animal Diversity

Syllabus
Animal Diversity
Section – A
LOWER INVERTEBRATES

Unit 1: Protista/Protozoa: General Characteristics and Classification up to classes; Locomotory Organelles and locomotion in Protozoa. 3 hrs

Unit 2: Porifera : General characteristics and Classification up to classes; Canal system in Porifera. 3 hrs

Unit 3: Coelenterata (Cnidaria): General characteristics and Classification up to classes; Polymorphism in Hydrozoa. 3 hrs

Unit 4: Helmithes: Platyhelminthes: General characteristics and Classification up to classes; Life cycle of *Taenia solium* and its parasitic adaptations. Nemathelminthes : General characteristics and Classification up to classes; Life cycle of *Ascaris lumbricoides* and its parasitic adaptations. 6 hrs

Section – B
HIGHER INVERTEBRATES

Unit 1: Annelida : General characteristics and Classification up to classes; Formation of Coelom; Metamerism in Annelida. 3 hrs

Unit 2: Arthropoda: General characteristics and Classification up to classes; Larval forms in Arthropoda, Metamorphosis in Insects. 5 hrs

Unit 3: Mollusca: General characteristics and Classification up to classes; Torsion and detorsion in Gastropoda; Pearl Formation. 4hrs

Unit 4: Echinodermata: General characteristics and Classification up to classes; Water-vascular system in Asteroidea. 3 hrs

Section –C
LOWER VERTEBRATES

Unit 1: Protochordata: General characteristics and Classification of Protochordata up to orders; Retrogressive metamorphosis. 3 hrs

Unit 2: Agnatha: General characteristics and outline classification of cyclostomes up to classes; Ammocoete larva 3 hrs

Unit 3: Pisces: General characteristics and Classification up to order. Parental care in fishes and Migration in fishes. 5 hrs

Unit 4: Aquatic adaptation in fishes; Origin fins; Scales of fishes; Osmoregulation in Fishes. 4 hrs

Section –D

HIGHER VERTEBRATES

Unit 1: Amphibia: General characteristics and classification up to order; Neotany; Parental care in Amphibians. 3 hrs

Unit 2: Reptilia: General characteristics and classification up to order; Identification of Poisonous and non-poisonous snakes; Biting mechanism in Snakes. 4 hrs

Unit 3: Aves: General characteristics and classification up to order; Types of feathers; Flight adaptations and Migration in birds. 4 hrs

Unit 4: Mammals: General characteristics and classification up to orders; Dentition in Mammals; Adaptive radiation in mammals. 4 hrs

Recommended Books:

1. Barnes, R.D. (2006) Invertebrate Zoology. VII Edition, Cengage Learning, India.
2. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002) The Invertebrates: A New Synthesis. III Edition, Blackwell Science
3. Young, J. Z. (2004) The Life of Vertebrates. III Edition. Oxford university press.
4. Jordan E.L., Verma P. S.(2022): Invertebrate Zoology. S. Chand and Company Limited.
5. Jordan E.L., Verma P. S.(2022): Chordate Zoology. S. Chand and Company Limited.

Suggested Readings:

1. Barrington, E.J.W. (2012) Invertebrate Structure and Functions. II Edition, EWP Publishers
2. Ruppert, E.E., Fox, R.S., Barnes, R. D. (2003) Invertebrate Zoology: A Functional Evolutionary Approach. VII Edition, Cengage Learning, India
3. Pechenik, J. A. (2015) Biology of the Invertebrates. VII Edition, McGraw-Hill Education
4. Pough H. Vertebrate Life, VIII Edition, Pearson International
5. Kachhwaha, N and Kaushik, P (2019): Freely online available gaming website-innovativezoology.com to study vertebrate and invertebrate classification.

Zoology Practical

University of Rajasthan
B.Sc. Semester I (2023-2024)
Practical-Zoology (ZOO- 51P-102)

ZOO- 51P-102 : 4 Hrs. duration 10+40 Marks 4+16 Marks

I. Microscopic Techniques:

1. Organization and working of Optical Microscope: Dissecting and compound microscopes.
2. General methods of microscopic slide preparations: Narcotization; fixing and preservation; washing; staining; destaining; dehydration; clearing and mounting.
3. General idea of composition, preparation and use of:
   (i) Fixatives: Formalin, Bouin's fluid.
   (ii) Stains: Aceto-carmine, Aceto-orcein, Haematoxylin, Eosin.
   (iii) Common reagents: Normal saline, Acid water, Acid alcohol and Mayer's albumin.

II. Study of Microscopic Slides and Museum Specimens:

Protozoa: *Euglena, Trypanosoma, Amoeba, Plasmodium, Paramecium, Vorticella.*

Porifera: *Leucosolenia, Euplectella, Spongilla,*

Coelenterata: *Physalia, Aurelia, Alcyonium,* Sea anemone,

Platyhelminthes : *Taenia, Planaria, Fasciola* (WM), Miracidium, Sporocyst, Redia and Cercaria Larvae of *Fasciola*, Cysticercus larva.

Aschelminthes : *Ascaris, Wuchereria.*

Annelida : Neanthes (*Nereis*), *Arenicola, Pheretima, Glossiphonia, Hirudo, Polygordius.*

Onychophora : *Peripatus*

Arthropoda : *Limulus*, Spider, Scorpion, Centipede, Millipede, *Lepas, Balanus, Eupagurus*, Crab, *Mantis, Pediculus,* Bedbug, Termite, *Cyclops, Daphnia,* crustacean larvae (Nauplius, Metanauplius, Zoea, Mysis, Megalopa, Phyllosoma),

Mollusca : *Chiton, Aplysia, Cypraea, Mytilus, Loligo, Nautilus.* Glochidium larva

Echinodermata : *Asterias, Echinus, Ophiothrix, Cucumaria, Antendon.*

Protochordates : *Balanoglossus*, Herdmania, Amphioxus, *Doliolum, Oikopleura.*

Agnatha : *Petromyzon,* Ammocoete larva.

Pisces : *Zygaena* (*Sphyrna*), *Torpedo, Chimaera*; *Acipenser, Clarias, Anguilla, Hippocampus, Exocoetus, Echeneis*, any flat-fish, *Protopterus.*

Amphibia : *Icthyophis Proteus, Ambystoma*, Axolotl, *Alytes, Hyla.*

Reptilia : *Chelone*, and Fresh Water Tortoise, *Sphenodon, Hemidactylus, Phrynosoma, Draco, Chameleon; Hydrophis, Naja, Viper, Crocodilus, Alligator.*

Aves: *Pavo cristatus, Choriotis.*

Mammals: *Ornithorhynchus, Kangaroo*, Bat, *Manis.*

III. **Anatomy:**

Earthworm : External features, general viscera, alimentary canal, reproductive system and nervous system.

Prawn/Squilla : External features, appendages, alimentary canal and nervous system; Hastate Plate

Pila : External features, pallial organs and nervous system; osphradium, radula.

IV. **Study of the Following Through Permanent Slide Preparation:** Foraminiferous shells, Sponge spicules, Spongin fibres, Gemmule, *Hydra, Obelia* colony and; Parapodium of *Nereis*,

V. **Study of local fauna such as insects, mollusks, fishes, amphibians, reptiles, birds mammals etc. and prepare a report on it.**

Botany

Diversity of Plant Kingdom

BOT-UG-CC01 Diversity of Plant Kingdom

Objectives

- To understand microscopic to macroscopic view of the plants.
- To differentiate algal members from different class of the kingdom Algae
- To understand structure and reproduction in bryophytes.
- To understand difference between Hepaticopsida, Anthocerotopsida and Bryopsida.
- To interpret structure, reproduction, life cycle and economic importance of Lichens.

UNIT I

Algae: General characters, Classifications (Fritsch) upto classes. Diverse Habitat. Range of thallus structure. Reproduction (Vegetative, Asexual, Sexual). Types of the life cycle. Type studies of Cyanophyceae- Nostoc, Oscillotoria, Chlorophyceae- *Chara*; Rhodophyceae-*Polysiphonia.*

Fungi: General characteristics; Thallus organization; types of fruiting bodies, Cell wall composition; Heterokaryosis and Parasexuality; Nutrition; Classification (*Alexopoulos*); reproduction, economic importance. Type studies: Oomycetes Albugo Zygomycota: *Rhizopus*, Basidiomycota: *Agaricus*.

Lichens- General characters, habitat, morphology and reproduction.

15 hrs

UNIT II

Bryophytes: General characters, Origin, and evolution of Bryophtya. Classification (Rothmaler), Habitat, Range of thallus structure, Reproduction (Vegetative and Sexual), Alternation of generations and Economic importance. Study of Morphology, Anatomy, Reproduction, Gametophytes and sporophytes of *Marchantia,Anthoceros* and *Funaria.*

15 hrs

UNIT III

Pteridophytes: General characters of Pteridophytes, affinities with Bryophytes & Gymnosperms, classification, economic importance, study of life histories of fossil Pteridophytes – Rhynia. Type studies Life histories of *Selaginella*- (Heterospory and seed habit) *Marsilea*. Stelar System in Pteridophytes

15 hrs

UNIT IV

Gymnosperms: General characters, classification, Gymnosperms: Type studies Life histories of *Cycas and Ephedra* Economic importance of gymnosperms.

Angiosperms: General characters, Differences between Monocotyledons and Dicotyledons, Typical life cycle of Angiosperm. **15 hrs**

Suggested Readings:

- Alexopoulos, C.J. and Mims, C.W.: Introductory Mycology, John Wiley and Sons, New York, 2000
- Dube, H.C. :Fungi, Rastogi Publication, Meerut, 1989.
- Vashihsta, B.R. Botany for Degree Students -Fungi, S. Chand & Co., New Delhi, 2001.
- Gilbart, M.Smith: Crypogamic Botany, Vol. I & II (2nd Ed.) Tata McGraw Hill. Publishing Co., Ltd., New Delhi, 1985.
- Kumar, H.D.: Introductory Phycology, Affiliated East—West Press, Ltd. New York, 1988.
- Puri. P.: Bryophytes, Atmaram& Sons. Delhi, Lucknow, 1985.
- Aneja, K.R.: Experiments in Microbiology, Plant Pathology and Biotechnology New Age International (P) Ltd., Publishers, New Delhi 2003.
- Pandey BP(2022) Algae,Bryophytes and Lichens,S Chand Publication

Botany Practical

Suggested Laboratory Exercises:

- Visit Local Garden /field study of plants
- Study of anatomy by making suitable temporary slides and study of permanent slides of *Chara,Vaucheria,Ectocarpus , Polysiphnia* (vegetative and reproductive).
- Lichens: Study of growth forms of lichens (crustose, foliose and fruticose)
- *Rhizopus*: study of asexual stage from temporary mounts and sexual structures through permanent slides.; *Agaricus*: Peziza , Specimens of button stage and full grown mushroom; sectioning of gills of Agaricus.
- **Bryophytes**- morphology of vegetative and reproductive stages of *Marchantia,* Anthoceros and *Funaria.*
- **Pteridophytes**- study of vegetative and reproductive stages of *Selaginella*- (Heterospory and seed habit),Equisetem, *Marsilea*
- Study of Vegetative and reproductive stages of *Cycas Pinus and Ephedra* using temporary and permanent slides.
- Study of monocot and dicot flowers and seeds.

Chemistry

Structure Bonding, Mathematical Concepts and states of matter

Syllabus

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

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 Publishihg 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.

Chemistry

Practical

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**

Geography
Physical Geography I

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.

Geography
Practical

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।

<u>अनुशंसित ग्रंथ–</u>

1. हिन्दी व्याकरण– कामताप्रसाद गुरू
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

Semester I General English

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

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

Rj ITay
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

RJ Jay

(7 Lectures)