GECET, 2026

Syllabus for (B.Tech Biotechnology Only)

Verbal Ability:
Vocabulary: Pure and Contextual (Phrasal Verbs, Idioms, Root Words, One word Substitution and Synonyms & Antonyms,) Grammatical Error based questions on (Pronoun and Antecedents, Tenses, Parallel Construction, Conditionals, Subject Verb Agreement), Reading Comprehension, Verbal Reasoning (Parajumbles, Critical Reasoning).

Logical Reasoning:
Arrangement (Linear, Circular, Tabular, Any other type), Blood Relation, Grouping and Team Formation, Coding Decoding, Series Completion, Direction Sense, Puzzles, Syllogism, Data Sufficiency, Data Interpretation

Quantitative Ability:
Number System, Percentage, Profit Loss, Simple Interest and Compound Interest, Ratio Proportion, Averages, Mixtures and Solutions, Time, Speed and Distance, Time and Work, Basic Algebra, Permutation and Combination, Probability, Set Theory, Clocks, Calendar, Logarithms

Physics

1. Physical World & Measurement
   Units, dimensions, significant figures, error analysis
2. Kinematics and Laws of Motion
   Motion in 1D & 2D, Newton's laws, friction, circular motion
3. Work, Energy & Power
   Work–energy theorem, conservation laws, collisions, power
4. System of Particles & Rigid Body
   Centre of mass, momentum, torque, moment of inertia, rotation
5. Gravitation
   Gravitational laws, field, potential, satellites
6. Oscillations & Waves
   SHM, wave motion, sound waves, Doppler effect
7. Thermodynamics & Kinetic Theory of Gases
   Thermal properties, laws of thermodynamics, ideal gases
8. Electrostatics & Current Electricity
   Electric fields, potential, capacitance, electric circuits
9. Magnetic Effects of Current & Magnetism
   Magnetic fields, forces, magnetic materials
10. Electromagnetic Induction, Alternating Currents & EM Waves
    Faraday's laws, AC circuits, transformers, EM spectrum

11. Ray Optics, Wave Optics & Optical Instruments
    Reflection, refraction, interference, diffraction, polarization
12. Dual Nature of Matter, Atoms & Nuclei, Electronic Devices & Communication Systems
    Photoelectric effect, atomic & nuclear physics, semiconductors, communication basics

CHEMISTRY

1. Chemical Bonding and Molecular Structure
   Ionic Bonding, Covalent bonding, Valence bond theory, Molecular Orbital Theory, metallic bonding, hydrogen bonding.
2. Thermodynamics
   First law of thermodynamics, Second law of thermodynamics
3. Solutions
   molality, molarity, mole fraction, percentage
4. Electrochemistry
   Electronic concepts of oxidation and reduction, redox reactions, oxidation number, Electrochemical cells Nernst equation and its applications
5. Chemical Kinetics
   order and molecularity of reactions, Rate law, rate constant and its units, differential and integral forms of zero and first-order reactions, their characteristics and half-lives, the effect of temperature on the rate of reactions, Arrhenius theory
6. Classification of Elements and Periodicity in Properties:
   s, p. d and f block elements, periodic trends in properties of elements atomic and ionic radii, ionization enthalpy, electron gain enthalpy, valence, oxidation states and chemical reactivity.
7. p-block, d- and f- Block Elements
8. Coordination Compounds:
   IUPAC nomenclature of mononuclear co-ordination compounds, isomerism, Bonding
9. Some basic Principles of Organic Chemistry
   Isomerism, Nomenclature, reaction intermediates, Electronic displacement in a covalent bond, Common types of organic reactions
10. Hydrocarbons
    Classification, isomerism, IUPAC nomenclature, Alkanes, Alkenes, Alkynes, Aromatic hydrocarbons
11. Organic Compounds Containing Halogens, Oxygen, nitrogen
    General methods of preparation, properties and reactions
12. Biomolecules
    CARBOHYDRATES, PROTEINS, VITAMINS, NUCLEIC ACIDS

Biology

1. Genetics and Evolution: Mendelian genetics, deviations from Mendelism, blood groups, sex determination, linkage and crossing over, sex-linked inheritance, genetic and chromosomal disorders. DNA/RNA structure, replication, transcription, translation, genetic code, lac operon, genome projects, DNA fingerprinting.
2. Biology and Human Welfare: Human diseases and pathogens, Basics concepts of Immunology, immunity and vaccines, cancer, HIV/AIDS, drug and alcohol abuse. Microbes in food, industry, sewage treatment, bioenergy, biocontrol, bio fertilizers, antibiotics and their proper use.
3. Biotechnology and Its Applications: Recombinant DNA Technology, Tools of genetic engineering (restriction enzymes, vectors, ligases), Gene cloning steps, PCR, gel electrophoresis, DNA isolation, Applications in health: insulin, vaccines, gene therapy, stem cells, Applications in agriculture: GM crops (Bt cotton), Transgenic animals, Biosafety issues, Biopiracy and patents, Reproductive health, STDs, contraception, MTP, infertility and assisted reproductive technologies (IVF, ZIFT, GIFT- basic awareness).
4. Biodiversity and Conservation: Population interactions, population growth, age distribution, Biodiversity concepts, loss and conservation, hotspots, endangered species, protected areas, Ramsar sites.

Fundamental of Computer Science

1. **Computational Thinking and Programming :-** Basics: Variable naming conventions, Data Types, Operators, Control Flow: If-Else statements, Nested loops, for and while loops, break/continue statements, Functions: Built-in vs. User-defined functions, arguments, parameters, and scope (Global vs. Local), Logic & Flow: Predicting outputs for mathematical operations, string manipulations, and array/list handling, Dry Run Proficiency: The ability to trace a variable's value through a loop.
2. **Data Structures & Algorithms (Basics):-** Searching: Linear Search and Binary Search, Sorting: Bubble Sort and Insertion Sort, Abstract Data Types: Basic understanding of Stacks (LIFO) and Queues (FIFO), Dry Running: Predicting the output of given code snippets (Testing logical accuracy).
3. **Database Management (SQL):-** Concepts: Introduction to Databases, Keys (Primary, Candidate, Foreign Keys), SQL Commands: CREATE, DROP, ALTER. SELECT, INSERT, UPDATE, DELETE, Functions: Aggregate functions (SUM, AVG, COUNT, MAX, MIN).
4. **Logical Reasoning & Pseudo-code:-** Pattern Recognition: Completing sequences or identifying logical errors in flowcharts, Pseudo-code interpretation: Solving logic-

based problems presented in plain English rather than a specific programming language.