

IBS :: INSTITUTE FOR BIOLOGICAL STUDIES

The Complete EXAM Preparations Program FOR

[CSIR-UGC NET JRF] [SET] [GATE] [DBT-JRF] [ICAR-NET] [ICMR JRF] [GRE]

M.Sc. & Integrated Ph.D. [JAM-IIT , JNU, TIFR, IISC]

IIT-JAM Life Science Syllabus

For Biotechnology, test paper comprises of questions on Biology, Chemistry, Mathematics and Physics. Detail syllabus inclusive of all topics are mentioned below-

Biology :

Taxonomy; Heredity, Genetic variation, Principles of ecology, Tissue culture, Application of enzymes, DNA, RNA, Replication, Cell cycle, Microbiology, Characterization and enumeration of virus, Bacteria; Fungi; Protozoa, Carbohydrates, Proteins; Lipids; Nucleic acids; Enzymes, Vitamins, Hormones, Metabolism, Photosynthesis, Nitrogen Fixation, Nervous system, vascular system, Immune system, Digestive system, and Reproductive System.

Chemistry :

Bohr theory, wave equation, Chemical bonding, Properties of s, p, d and block elements, Chemical equilibria, Chemical thermodynamics (first and second law), Chemical kinetics (zero, first, second and third order reactions), Electrochemistry, Hydrocarbons, alkyl halides, alcohols, aldehydes, ketones, carboxylic acids, amines and their derivatives; Aromatic hydrocarbons, halides, nitro and amino compounds, phenols, carboxylic, Mechanism of organic reactions Soaps and detergents; Synthetic polymers; Biomolecules - amino acids, proteins, nucleic acids, lipids and carbohydrates, electrophoresis, spectroscopy, mass spectrometry, etc.

Mathematics :

Sets, Relations and Functions, Mathematical Induction, Logarithms, Complex numbers, Linear and Quadratic equations, Sequences and Series, Trigonometry, Permutations and Combinations, Statistics, Three Dimensional Geometry, Vectors, Stocks, Shares and Debentures, Matrices and Determinants, Boolean Algebra, Probability, Functions, limits and Continuity, Differentiation, Definite and Indefinite Integrals, Differential Equations, Elementary Statics and Dynamics, Partnership, Linear Programming, Annuities, Application of Calculus.

Physics :

Kinematics, Laws of Motion, Work, Energy and Power, Electrostatics, Current electricity, Magnetic Effects of Current and Magnetism, Electromagnetic Induction and Alternating Current, Electromagnetics waves, Optics, Dual Nature of Matter and Radiations, Atomic Nucleus, Solids and Semiconductor Devices, Principles of Communication, Gravitation, Heat and Thermodynamics, Oscillations, Waves.

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Contact Timing : 07:00 AM TO 5:00 PM

Admission Open : Batch Starts On 11-July-2018