India's **No.1** Institute **CSIR UGC NET, GATE, IIT JAM, GAT B & CUET PG**

# HP SET

# LIFE SCIENCES

## Test Series



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# PAPER II

## STRUCTURE AND FUNCTION OF BIOMOLECULES

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Structure and Function of Biomolecules 01 | 50 |
| | Structure and Function of Biomolecules 02 | 50 |
| | Structure and Function of Biomolecules 03 | 50 |
| PRACTICE TEST | Atoms Molecules Bonds | 10 |
| | Biomolecules Composition | 10 |
| | Stabilizing Interactions | 10 |
| | Biophysical Chemistry | 10 |
| | Bioenergetics | 10 |
| | Catalysis | 10 |
| | Protein Conformation | 10 |
| | Nucleic Acid Conformation | 10 |
| | Stability Proteins NucAcids | 10 |
| | Metabolism | 10 |

## CELLULAR ORGANIZATION

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Cellular Organization 01 | 50 |
| | Cellular Organization 02 | 50 |
| | Cellular Organization 03 | 50 |
| PRACTICE TEST | Cell Wall and Membrane | 10 |
| | Intracellular Organelles | 10 |
| | Genes and Chromosomes | 10 |
| | Cell Division and Cycle | 10 |
| | Microbial Physiology | 10 |

## FUNDAMENTAL PROCESSES

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Fundamental Processes 01 | 50 |
| | Fundamental Processes 02 | 50 |
| | Fundamental Processes 03 | 50 |
| PRACTICE TEST | DNA Replication Repair Recombination | 10 |
| | RNA Synthesis Processing Regulation | 10 |
| | Protein Synthesis Processing Degradation | 10 |
| | Control of Gene Expression | 10 |

## CELL COMMUNICATION AND CELL SIGNALING

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Cell Communication and Cell Signalling 01 | 50 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST (CONT.) | Cell Communication and Cell Signalling 02 | 50 |
| | Cell Communication and Cell Signalling 03 | 50 |
| PRACTICE TEST | Cell Signaling | 10 |
| | Cellular Communication | 10 |
| | Immune System | 10 |
| | Host Pathogen Interaction | 10 |
| | Cancer | 10 |

## DEVELOPMENTAL BIOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Developmental Biology 01 | 50 |
| | Developmental Biology 02 | 50 |
| | Developmental Biology 03 | 50 |
| PRACTICE TEST | Basic Concepts | 10 |
| | Gametogenesis | 10 |
| | Animal Organogenesis | 10 |
| | Plant Organogenesis | 10 |
| | PCD Senescence | 10 |

## SYSTEM PHYSIOLOGY – PLANT

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | System Physiology Plant 01 | 50 |
| | System Physiology Plant 02 | 50 |
| | System Physiology Plant 03 | 50 |
| PRACTICE TEST | Photosynthesis | 10 |
| | Respiration Photorespiration | 10 |
| | Nitrogen Metabolism | 10 |
| | Plant Hormones | 10 |
| | Sensory Photobiology | 10 |
| | Solute Transport Translocation | 10 |
| | Secondary Metabolites | 10 |

## SYSTEM PHYSIOLOGY – ANIMAL

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | System Physiology Animal 01 | 50 |
| | System Physiology Animal 02 | 50 |
| | System Physiology Animal 03 | 50 |
| PRACTICE TEST | Blood and Circulation | 10 |
| | Cardiovascular System | 10 |
| | Respiratory System | 10 |
| | Nervous System | 10 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| PRACTICE TEST (CONT.) | Sense Organs | 10 |
| | Excretory System | 10 |
| | Thermoregulation | 10 |
| | Stress and Adaptation | 10 |
| | Digestive System | 10 |
| | Endocrinology and Reproduction | 10 |
| | Concept of Metaorganisms Holobionts | 10 |
| | Interorgan Communication and Energy Homeostasis | 10 |

## INHERITANCE BIOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Inheritance Biology 01 | 50 |
| | Inheritance Biology 02 | 50 |
| | Inheritance Biology 03 | 50 |
| PRACTICE TEST | Chromosomal Extrachromosomal | 10 |
| | Genes and Mutations | 10 |
| | Genetic Analysis | 10 |
| | Human Genetics | 10 |
| | Structural Numerical Alterations | 10 |

## EVOLUTION AND DIVERSITY OF LIFE FORMS

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Evolution and Diversity of Life Forms 01 | 50 |
| | Evolution and Diversity of Life Forms 02 | 50 |
| | Evolution and Diversity of Life Forms 03 | 50 |
| PRACTICE TEST | Evolution of Life and Life Forms | 10 |
| | Principles and Methods of Taxonomy | 10 |
| | Microbial Life | 10 |
| | Protists | 10 |
| | Fungi | 10 |
| | Plant Life | 10 |
| | Animal Life | 10 |

## ECOLOGY AND BEHAVIOURAL BIOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Ecology and Behavioural Biology 01 | 50 |
| | Ecology and Behavioural Biology 02 | 50 |
| | Ecology and Behavioural Biology 03 | 50 |
| PRACTICE TEST | Introduction to Ecology | 10 |
| | Population Ecology | 10 |
| | Community Ecology | 10 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| PRACTICE TEST (CONT.) | Ecosystem Ecology | 10 |
| | Human Impacts | 10 |
| | Biodiversity Conservation | 10 |
| | Acts and Policies | 10 |
| | Behavioural Ecology | 10 |

## BIOINFORMATICS AND COMPUTATIONAL BIOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Bioinformatics and Computational Biology 01 | 50 |
| | Bioinformatics and Computational Biology 02 | 50 |
| | Bioinformatics and Computational Biology 03 | 50 |
| PRACTICE TEST | Major Bioinformatic Resources | 10 |
| | Basic Concepts of Sequence Analysis | 10 |
| | Gene Annotation | 10 |
| | Molecular Modelling and Dynamics | 10 |
| | Classification Comparison Protein 3D Structures | 10 |
| | Drug Design | 10 |
| | Systems Biology | 10 |

## BIOCHEMICAL ENGINEERING AND INDUSTRIAL BIOTECHNOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Biochemical Engineering and Industrial Biotechnology 01 | 50 |
| | Biochemical Engineering and Industrial Biotechnology 02 | 50 |
| | Biochemical Engineering and Industrial Biotechnology 03 | 50 |
| PRACTICE TEST | Introductory Mathematics | 10 |
| | Engineering Principles | 10 |
| | Thermodynamics in Biological Systems | 10 |
| | Bioprocess Engineering and Technology | 10 |
| | Enzymes and Microbial Technology | 10 |
| | Downstream Processing | 10 |
| | Bioprocess Plant Design | 10 |
| | Metabolic Engineering and Synthetic Biology | 10 |

## ADVANCES IN BIOTECHNOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Advances in Biotechnology 01 | 50 |
| | Advances in Biotechnology 02 | 50 |
| | Advances in Biotechnology 03 | 50 |
| PRACTICE TEST | Recombinant DNA Technology | 10 |
| | Medical Biotechnology | 10 |
| | Animal Biotechnology | 10 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| PRACTICE TEST (CONT.) | Agriculture Biotechnology | 10 |
| | Marine Biotechnology | 10 |
| | Environmental Biotechnology | 10 |

## METHODS IN BIOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Methods in Biology 01 | 50 |
| | Methods in Biology 02 | 50 |
| | Methods in Biology 03 | 50 |
| PRACTICE TEST | Molecular Biology Techniques | 10 |
| | Biophysical Methods | 10 |
| | Genomics Transcriptomics Proteomics Metabolomics | 10 |
| | Radiolabeling Techniques | 10 |
| | Histo Chemical Immuno Techniques | 10 |
| | Microscopic Techniques | 10 |
| | Electrophysiological Methods | 10 |
| | Methods in Field Biology | 10 |
| | Statistical Methods | 10 |
| | IPR Biosafety Bioethics | 10 |

## PAPER I: GENERAL APTITUDE

### UNIT 1: TEACHING APTITUDE

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Teaching Aptitude 01 | 50 |
| | Teaching Aptitude 02 | 50 |
| | Teaching Aptitude 03 | 50 |
| PRACTICE TEST | Teaching | 10 |
| | Learner Characteristics | 10 |
| | Factors Affecting Teaching | 10 |
| | Methods of Teaching | 10 |
| | Teaching Support System | 10 |
| | Evaluation Systems | 10 |

### UNIT 2: RESEARCH APTITUDE

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Research Aptitude 01 | 50 |
| | Research Aptitude 02 | 50 |
| | Research Aptitude 03 | 50 |
| PRACTICE TEST | Research | 10 |
| | Methods of Research | 10 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| PRACTICE TEST (CONT.) | Thesis and Article Writing | 10 |
| | Steps of Research | 10 |
| | ICT in Research | 10 |
| | Research Ethics | 10 |

## UNIT 3: COMPREHENSION

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Comprehension 01 | 50 |
| | Comprehension 02 | 50 |
| | Comprehension 03 | 50 |
| PRACTICE TEST | Comprehension | 10 |

## UNIT 4: COMMUNICATION

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Communication 01 | 50 |
| | Communication 02 | 50 |
| | Communication 03 | 50 |
| PRACTICE TEST | Communication | 10 |
| | Effective Communication | 10 |
| | Mass Media and Society | 10 |
| | Barriers | 10 |

## UNIT 5: MATHEMATICAL REASONING

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Mathematical Reasoning 01 | 50 |
| | Mathematical Reasoning 02 | 50 |
| | Mathematical Reasoning 03 | 50 |
| PRACTICE TEST | Types of Reasoning | 10 |
| | Number Letter Series Codes | 10 |
| | Mathematical Aptitude | 10 |

## UNIT 6: LOGICAL REASONING

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Logical Reasoning 01 | 50 |
| | Logical Reasoning 02 | 50 |
| | Logical Reasoning 03 | 50 |
| PRACTICE TEST | Understanding the Structure of Arguments | 10 |
| | Evaluating Deductive and Inductive Reasoning | 10 |
| | Analogies | 10 |
| | Venn Diagram | 10 |
| | Indian Logic | 10 |

## UNIT 7: DATA INTERPRETATION

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Data Interpretation 01 | 50 |
| | Data Interpretation 02 | 50 |
| | Data Interpretation 03 | 50 |
| PRACTICE TEST | Sources Classification of Data | 10 |
| | Quantitative Qualitative Data | 10 |
| | Graphical Representation | 10 |
| | Data Interpretation | 10 |
| | Data and Governance | 10 |

## UNIT 8: INFORMATION AND COMMUNICATION TECHNOLOGY

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Information and Communication Technology 01 | 50 |
| | Information and Communication Technology 02 | 50 |
| | Information and Communication Technology 03 | 50 |
| PRACTICE TEST | General Abbreviations Terminology | 10 |
| | Basics Internet Intranet Email Conferencing | 10 |
| | Digital Initiatives Higher Education | 10 |
| | ICT and Governance | 10 |
| | Data and Governance | 10 |

## UNIT 9: PEOPLE DEVELOPMENT AND ENVIRONMENT

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | People Development and Environment 01 | 50 |
| | People Development and Environment 02 | 50 |
| | People Development and Environment 03 | 50 |
| PRACTICE TEST | Development and Environment | 10 |
| | Human Environment Interaction | 10 |
| | Environmental Issues | 10 |
| | Impacts of Pollutants on Human Health | 10 |
| | Natural and Energy Resources | 10 |
| | Natural Hazards and Disasters | 10 |
| | Env Acts and International Agreements | 10 |

## UNIT 10: HIGHER EDUCATION SYSTEM

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| UNIT TEST | Higher Education System 01 | 50 |
| | Higher Education System 02 | 50 |
| | Higher Education System 03 | 50 |
| PRACTICE TEST | Ancient India Institutions | 10 |

| TYPE | TEST NAME | NO. OF QUESTIONS |
|---|---|---|
| PRACTICE TEST (CONT.) | Evolution of Higher Education Post Independence | 10 |
| | Oriental Conventional Non-conventional Education | 10 |
| | Professional Technical Skill Education | 10 |
| | Value and Environmental Education | 10 |
| | Policies Governance and Administration | 10 |

## MOCK TESTS

| TEST NAME | NO. OF QUESTIONS |
|---|---|
| MOCK TEST 01 | 150 |
| MOCK TEST 02 | 150 |
| MOCK TEST 03 | 150 |
| MOCK TEST 04 | 150 |
| MOCK TEST 05 | 150 |
| MOCK TEST 06 | 150 |
| MOCK TEST 07 | 150 |
| MOCK TEST 08 | 150 |
| MOCK TEST 09 | 150 |
| MOCK TEST 10 | 150 |

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Success in competitive exams is not about knowing everything — it is about practicing the right things, again and again, until they become instinct.

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