M.Sc. Entrance Examination – 2026
Subject: Bioscience/ Microbiology/ Biochemistry
School of Studies in Life Science
Pt. Ravishankar Shukla University, Raipur

Syllabus

1. General Biology
- Cell Biology: Structure and function of cell organelles, cell cycle, and cell division
- Genetics: Mendelian genetics, linkage and recombination, molecular basis of inheritance

2. Ecology and Environment
- Evolution and Ecology: Theories of evolution, ecosystems: Food chain, food web, pyramids, productivity
- Pollution, Biodiversity and conservation, Natural disaster, Climate change, sustainable development

3. Plant Biology
- Plant Biology: General characteristics of Angiosperm (Dicot and Monocot), Gymnosperm (Cycas, Pinus and Ephedra) and Pteridophyta (Marsilea, Azolla and Equisetum).
- Photosynthesis, respiration, plant hormones, water and mineral nutrition

4. Animal Biology
- Animal Biology: Classification of Invertebrates (Protozoa, Porifera, Platyhelminthes, Nematoda, Annelida, Arthropoda, Mollusca, Echinodermata) and Chordates (Pisces, Amphibia, Reptilia, Aves, Mammalia).
- Animal physiology: Nervous, endocrine, cardiovascular, respiratory, excretory, and reproductive systems

5. Microbiology and Immunology
- Microbial classification, occurrence, distribution, structure, and economic importance of Algae, Bacteria, Fungi, Virus
- Pathogenic microorganisms and infectious diseases
- Immune system: Innate and adaptive immunity, antigen-antibody interactions, vaccines

6. Biochemistry
- Biomolecules: Carbohydrates, proteins, lipids, nucleic acids
- Enzymes: Classification, Structure, Function, and Kinetics
- Vitamins and hormones

7. Instrumentation and Techniques
- Microscopy (principle and staining methods), Chromatography (Paper, Thin layer, Gas, and HPLC)
- Principle, techniques, and applications of Centrifugation and Spectrophotometry

8. Molecular Biology and Biotechnology
- DNA replication, transcription, and translation
- Gene regulation and expression
- Recombinant DNA technology, cloning, PCR
- Applications of biotechnology in agriculture, medicine, and industry

9. Biostatistics
- Basic statistical methods: Mean, median, mode, standard deviation