



Dr.B.R. AMBEDKAR OPEN UNIVERSITY

FACULTY OF SCIENCE

DEPARTMENT OF ZOOLOGY

M.Sc., FIRST YEAR, SEM-I(2025-26)

COURSE-1 (Biosystematics and Invertebrate Biology)

Instructions:

- Do not copy the answer directly from any of the books.
- As far as possible, try to answer the questions independently in your own words.
- Each course has two assignments (Assignment-1 and Assignment-2). Maximum marks are 15 and Minimum marks (Pass marks) are 06 for each assignment. Each assignment has “three questions” and each question carries 05 marks.
- You must pass both assignment-1 and assignment-2.
- You must submit the handwritten assignments. Printed materials/ Xerox copies are not acceptable.
- Answers must be written in blue or black ballpoint pen. You may use colour pencils / colour pens for drawing diagrams.
- Answers must be written on one side of the paper only. Do not write on both sides of the paper.
- Each assignment must be a minimum of 10 pages and a maximum of 15 pages.
- You must sign at the end of each page of your answer sheet.

ASSIGNMENT-1

Max. Marks: 15

Min. Marks: 06

- I. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Discuss the application of taxonomy in Biodiversity Conservation, Biological Control, Wildlife Management, Agriculture and Forestry.
 2. Explain the Metamorphosis and hormonal control of insect metamorphosis.
 3. Discuss the Echinodermata larval forms and their evolutionary significance.

ASSIGNMENT-2

Max. Marks: 15

Min. Marks: 06

- II. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Write the general characteristics and outline classification of Annelida and Arthropoda.
 2. Discuss in detail the feeding and digestive system of insects.
 3. What are the types of parasites and discuss their physiological and morphological adaptations?



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COURSE-2 (Vertebrate Biology)

Instructions:

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- You must pass both assignment-1 and assignment-2.
- You must submit the handwritten assignments. Printed materials/ Xerox copies are not acceptable.
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- Each assignment must be a minimum of 10 pages and a maximum of 15 pages.
- You must sign at the end of each page of your answer sheet.

ASSIGNMENT-1

Max. Marks: 15

Min. Marks: 06

- I. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Give a comparative account of integument of Reptiles, Birds and Mammals.
 2. Compare the different types of vertebrate heart.
 3. Describe the structure of eye and explain the process of focusing in vertebrates.

ASSIGNMENT-2

Max. Marks: 15

Min. Marks: 06

- II. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Write an essay on poison Glands in amphibians and Reptiles?
 2. Discuss in detail about the different types of Respiratory organs in Vertebrates.
 3. Give a comparative account of brain of Vertebrates.



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COURSE-3 (Cell and Molecular Biology)

Instructions:

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- You must pass both assignment-1 and assignment-2.
- You must submit the handwritten assignments. Printed materials/ Xerox copies are not acceptable.
- Answers must be written in blue or black ballpoint pen. You may use colour pencils / colour pens for drawing diagrams.
- Answers must be written on one side of the paper only. Do not write on both side of the paper.
- Each assignment must be a minimum of 10 pages and a maximum of 15 pages.
- You must sign at the end of each page of your answer sheet.

ASSIGNMENT-1

Max. Marks: 15

Min. Marks: 06

- I. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Discuss the types of electron microscopes (SEM and TEM) comparing their principles, working and applications.
 2. Write an essay on Cell Junctions.
 3. What are proto-oncogenes? How do they transform into oncogenes

ASSIGNMENT-2

Max. Marks: 15

Min. Marks: 06

- II. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Write about Chromosome organization in detail.
 2. Explain protein synthesis mechanism in eukaryotes.
 3. Compare and contrast homologous recombination and non-homologous recombination, highlighting their mechanisms and significance.



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COURSE-4 (Biostatistics and Biological Instrumentation Techniques)

Instructions:

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- You must submit the handwritten assignments. Printed materials/ Xerox copies are not acceptable.
- Answers must be written in blue or black ballpoint pen. You may use colour pencils / colour pens for drawing diagrams.
- Answers must be written on one side of the paper only. Do not write on both sides of the paper.
- Each assignment must be a minimum of 10 pages and a maximum of 15 pages.
- You must sign at the end of each page of your answer sheet.

ASSIGNMENT-1

Max. Marks: 15

Min. Marks: 06

- I. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Discuss the different types of correlations and provide examples for each type.
 2. Explain the process of creating and customizing charts in MS Excel. Discuss the various types of charts available and when to use each type.
 3. Describe the components of basal media used in cell culture. How do these components support the growth and maintenance of cultured cells?

ASSIGNMENT-2

Max. Marks: 15

Min. Marks: 06

- II. Answer **all** the following questions. (Draw diagrams, flow charts wherever necessary). Each question carries 05 marks.
1. Describe the principle behind the Student's t-test for paired samples.
 2. Discuss the impact of search engines on various aspects of society, including education.
 3. How does High-Performance Liquid Chromatography (HPLC) differ from other chromatography techniques?