

Exam Code - 211203**Paper Code - 3234****Programme: Master of Science (Zoology)****Semester- III****Course Title—Research Techniques and Methodology****Course code - MZOL-3481****Time Allowed: 3 Hours****Max Marks: 80**

Note: Attempt five questions in all, selecting one question from each section and fifth question can be attempted from any section. Each question carries equal marks. Draw neat and well labelled diagrams wherever required.

Section – A

- Q1. Describe column chromatography in detail. 16
- Q2. Discuss in detail the applications of centrifugation. 16

Section – B

- Q3. Give schematic representation of instrumentation of UV spectroscopy. Explain in detail various components of UV spectroscope. 16
- Q4. Define SEM and TEM. Give well labelled ray diagram of both 16

Section – C

- Q5. Give general principles and support media of Electrophoresis. 16
- Q6. Discuss in detail Agarose Gel Electrophoresis. 16

Section – D

- Q7. Discuss Scintillation in detail. 16
- Q8. Enlist various safety rules for radioisotopic studies. 16

Exam Code - 211203

Paper Code- 3235

Programme: Master of Science (Zoology)
Semester III
Course Title: DEVELOPMENTAL BIOLOGY- I
Course Code: MZOL-3482



Time Allowed: 3 hrs.

Max Marks: 80

Note: Attempt five questions in all, selecting at least one question from each section. Fifth question can be attempted from any section. All questions carry equal marks (16). Support your answers with suitable diagrams wherever necessary.

Section A

1. What do you understand by Acrosome Reaction? Describe the process with suitable diagrams. 16
2. Describe in detail the process of Spermatogenesis, draw suitable diagrams wherever required, also discuss how is it different from Oogenesis. 16

Section B

3. Describe the process of Gastrulation, also highlight its significance in embryonic development. 16
4. Write notes on 8+8
 - a) Morphogenetic field
 - b) Parthenogenesis

Section C

5. What is cell determination in embryonic development, and how does it differ from cell differentiation? 16
6. Can you provide examples of transdetermination occurring in specific cell types during embryonic development, and what are the implications of these transitions? 16

Section D

7. Explain how cells regulate varied Gene Expression Patterns. 16
8. How does genetics influence the control of developmental processes? 16

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Paper Code - 3236

Programme: Master of Science (Zoology)

Semester- III

Course Title– General Biochemistry

Course code - MZOL-3483

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all, selecting at least one question from each section and fifth question can be attempted from any section. Each question carries equal (16) marks. Draw neat and well labelled diagrams wherever required.

Section – A

- Q1. Give steps and significance of Enzyme Kinetics. 16
- Q2. How do the enzymes regulate their activities? 16

Section – B

- Q3. Discuss Gluconeogenesis and write down its importance. 16
- Q4. What is HMP shunt and its significance in animals. 16

Section – C

- Q5. Discuss Citric Acid Cycle in detail. 16
- Q6. Give oxidation of pyruvate and production of acetate. 16

Section – D

- Q7. Describe shuttle system in mitochondria and its significance. 16
- Q8. Explain Ornithine Cycle in detail. 16

Exam Code: 211203**Paper Code: 3237****Programme: Master of Science (Zoology)****Semester- III****Course Title: Applied Zoology-II (Vertebrates)****Course code: MZOL-3484****Time Allowed: 3 Hours****Max Marks: 80**

Note: Attempt five questions in all, selecting one question from each section and fifth question can be attempted from any section. Each question carries equal (16) marks. Draw neat and well labelled diagrams wherever required.

Section A

1. Explain induced breeding methods used in Pisciculture. 16
2. Write a note on products and by products of poultry. 16

Section B

3. Write a note on Fur Producing animals. 16
4. Explain the processing of wool in detail. 16

Section C

5. Discuss milk composition and dairy products in detail. 16
6. Discuss different steps for processing of leather. 16

Section D

7. Discuss products and by products of Piggery. 16
8. Explain pharmaceuticals obtained from animals. 16