

Note: Attempt the five questions in all, selecting at least one question from each section. Fifth question may be attempted from any section. Each question carries 16 marks. Write legibly and Draw well labeled diagrams wherever necessary.

Section-A

1. (a) Give an account of eukaryotic DNA polymerases.
(b) Describe the mechanism of prokaryotic replication,
2. Compare and contrast between General Excision Repair system and Specialized DNA Repair Mechanisms.

Section-B

3. Give an account of the transcriptional and post transcriptional gene silencing.
4. Explain briefly-
 - (a) Splicing
 - (b) Terminal additions

Section-C

5. Explain the properties of Genetic Code in detail.
6. Write short notes on-
 - (a) Initiation and elongation factors
 - (b) Role of Ribosomes in protein synthesis

Section-D

7. Explain in brief-
 - (a) Genetics of Cancer
 - (b) Radiation Carcinogenesis
8. Describe the various molecular approaches of Cancer treatment.

Exam Code: 211204

Paper Code: 4230

Master of Science (Zoology) Semester- IV

Course Title- Concepts of Immunology

Course Code - MZOL-4483

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all, selecting at least one from each section. Fifth question can be attempted from any section. Each question carries 16 marks. Draw neat & well labelled diagrams wherever necessary.

Section A

- | | | |
|----|---|----|
| 1. | Define adaptive immunity. Discuss its various features. | 16 |
| 2. | Explain heterogeneity of lymphoid cells. | 16 |

Section B

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|----|---|----|
| 3. | Give elaborative account of classes and structure of immunoglobulins. | 16 |
| 4. | Define complement system. Give lectin binding pathway in detail. | 16 |

Section C

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| 5. | Discuss Type I Hypersensitive reactions. | 16 |
| 6. | Give various autoimmune disorders in detail. | 16 |

Section D

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|----|---------------------------|----|
| 7. | Define and explain ELISA. | 16 |
| 8. | Write a note following | |
| | a. RIA | 08 |
| | b. Immunoblot | 08 |

Time Allowed: 3 Hours

Maximum Marks: 80

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Section-A

1. (a) Give an account of epithelial-mesenchymal transition with suitable examples.
(b) Describe in brief developmental mechanism of vertebrate lens regeneration.
2. Explain in detail the process of vulval formation in nematode *Caenorhabditis elegans*.

Section-B

3. Describe the developmental organogenesis of heart and blood vessels.
4. Explain briefly-
 - (a) Formation of neural tube
 - (b) Developmental mechanism of somites

Section-C

5. Compare and contrast between axis specification among invertebrates and amphibians.
6. Write short notes on-
 - (a) Nucleo-cytoplasmic interactions
 - (b) Role of evocators during inductions

Section-D

7. Explain the process of compensatory regeneration of mammalian liver.
8. Describe the concept of growth at cellular, subcellular and organ level.

Master of Science (Zoology) Semester- IV

Course Title: Biosystematics

Course Code: MZOL-4485

Time Allowed: 3 Hours

Max Marks: 80

Note: Attempt five questions in all, selecting at least one from each section. Fifth question can be attempted from any section. Each question carries 16 marks. Draw neat & well labelled diagrams wherever necessary.

Section A

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|----|--|----|
| 1. | Discuss different character kinds for classification of organisms. | 16 |
| 2. | Write a note on cytotaxonomy. | 16 |

Section B

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|----|---|----|
| 3. | Explain different types of taxonomic keys for taxonomic procedures. | 16 |
| 4. | Discuss nomenclature principles in classification of animals. | 16 |

Section C

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| 5. | Define systematic publications. Discuss various kinds of publications with examples. | 16 |
| 6. | a) Write various concepts of species in detail with examples. | 10 |
| | b) Define speciation and discuss its types. | 6 |

Section D

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| 7. | Write a note on outline of classification of kingdom animalia. | 16 |
| 8. | Write a note following minor phyla | |
| | a) Chaethognatha | 8 |
| | b) Onychophora | 8 |