

Reg. No. :

D 1663

Q.P. Code : [D 09 ZO 01]

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, DECEMBER 2010.

First Year

Zoology

INVERTEBRATE AND VERTEBRATE BIOLOGY

Time : Three hours

Maximum : 100 marks

Answer any FIVE of the following questions.

(5 × 20 = 100)

All questions carry equal marks.

4. Discuss the salient features and phylogeny of Hemichordates with reference to Balanoglossus.
5. Justify 'Seymouria' as an amphibian on the point of becoming a reptile.
6. Discuss parental care with reference to amphibian.
7. What are migratory fishes? Give an account on the phenomenon and peculiarities associated with migratory fishes.
8. Discuss the evolutionary causes for transition of amphibians from water to land highlighting their adaptations to amphibious life.

1. Discuss the different patterns of reproduction met with in protozoans, highlighting the phenomenon of conjugation.

2. Give a detailed account on the larval forms of different classes of Echinoderms deriving their significance.

3. Explain with neat and labelled diagrams the different mouthparts in insects.

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Zoology

CELL BIOLOGY AND GENETICS

Time : Three hours

Maximum : 100 marks

Answer any FIVE of the following questions.

All questions carry equal marks.

(5 × 20 = 100)

1. Give an account of functions of plasma membrane.
2. Define mitotic apparatus. Explain the mechanism of movement of chromosomes to the poles and theories.
3. Describe the ultra structure and functions of Golgi Complex.
4. Comment on the various components of respiratory chain.

5. How did Meselson and Stahl proved that DNA replication is semiconservative.
6. Define mutation. Explain spontaneous and induced mutations.
7. What do you mean by "Genetic code"? Discuss in brief the special features of genetic code.
8. Give a short account of the following :
 - (a) Polymorphism of DNA
 - (b) Peroxisomes.

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First year

Zoology

ECONOMIC ZOOLOGY

Time : Three hours

Maximum : 100 marks

Answer any FIVE of the following

Each answer should not exceed 1500 words

(5 × 20 = 100)

1. Describe the life cycle, rearing methods and uses of silkworm and honeybees.
2. Explain the biology, life cycle, infestation potential and control measures of *sitophilus oryzae*.
3. Give an detailed account on
 - (i) Lac culture
 - (ii) Pearl culture

4. Write an essay on prawn culture, pond management and difficulties in prawn culture.
5. Explain in detail about poisonous snakes in India.
6. Explain the genetic basis of at least four syndromes in human.
7. Describe the life cycle and preventive measures of malarial parasite.
8. Give an account of parasitic diseases in cattle

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First Year

Zoology

BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. Write a note on the structure and classification of various amino acids based on their physical and chemical properties.
2. Explain the biological significance of proteins.
3. Write notes on :
 - (a) Glycogenesis
 - (b) Glycogenolysis
 - (c) Glyconeogenesis
 - (d) Cori's cycle
 - (e) Electron transport chain.

4. Enumerate the physical and chemical properties of fats.
5. Describe different types of enzyme inhibition.
6. Write notes on :
 - (a) Tautomerism
 - (b) Nucleotides
 - (c) Nucleosides
 - (d) mRNA
 - (e) RNA world hypothesis
7. Describe any two spectroscopic techniques with their principles and applications.
8. Write the principle, * instrumentation and applications involved in electrophoretic techniques.

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M.Sc. DEGREE EXAMINATION, DECEMBER 2010.

Fist Year

**ENVIRONMENTAL SCIENCE AND BIODIVERSITY
CONSERVATION**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions. (5 × 20 = 100 marks)

Each answer should not exceed 1500 words.

1. Explain the history of conservation with an emphasis on human role in understanding the environment conservation.
2. Discuss in detail the carbon cycle and its importance in life processes.
3. Describe the properties of ecosystem communities on species diversity.
4. Draw a simplified energy flow diagram depicting three trophic levels and explain its features.

5. Compare human population growth against environment towards environmental conservation.
6. Discuss the distribution of major terrestrial communities and the biomes.
7. Explain any two of the following :
 - (a) Wild life conservation,
 - (b) Marine Ecosystem and
 - (c) Threats to biodiversity.
8. Differentiate sanctuary and national parks. Give a detailed account on one sanctuary and National Park in India.