

2006

ZOOLOGY

Paper 2

*Time : 3 Hours]**[Maximum Marks : 300***INSTRUCTIONS**

*Candidates should attempt **all** the questions in Parts A, B & C. However, they have to choose only **three** questions in Part D. The number of marks carried by each question is indicated at the end of the question.*

Answers must be written in English.

This paper has four parts :

- | | |
|----------|-----------|
| A | 20 marks |
| B | 100 marks |
| C | 90 marks |
| D | 90 marks |

Marks allotted to each question are indicated in each part.

SEAL

PART A

Answer each question in about 50 words. Each question carries 5 marks.

1. Write short notes on the following :
 - (a) Oxidative phosphorylation
 - (b) Hamburger's phenomenon
 - (c) Singer and Nicolson's model of plasma membrane
 - (d) Cytoplasmic inheritance in Paramecium

PART B

10×10=100

Answer each question in about 100 words. Each question carries 10 marks.

2. Morgan discovered that linkage is an exception to Mendel's principle of independent assortment. Justify.
3. Bring out the concept of neurosecretion from the study of Pituitary and Adrenal.
4. Extra-embryonic membranes are an adaptation in the development of birds. Explain.
5. Write a brief account of types of colouration and their significance in animals.
6. Describe the various events involved in replication of DNA.
7. Briefly explain the biosynthesis of cholesterol.
8. What is aneuploidy ? Explain any three aneuploid conditions in Humans.
9. Explain hormonal control of metamorphosis in Insects.
10. Describe the various changes observed in Prophase-I of Meiosis-1.
11. Outline the role of B-lymphocytes and T-lymphocytes as specific body defences.

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PART C

6×15=90

Answer each question in about 150 words. Each question carries 15 marks.

12. What are fossils ? Explain their types and dating.
13. Write the histological classification of placenta in mammals and describe any two of them citing suitable examples.
14. Give a comprehensive picture of the structure, types with examples and biological significance of proteins.
15. Explain the types of chromosomal basis of sex determination in animals.
16. What is mutation ? List the different mutagenic agents and explain CIB technique of identification of mutations.
17. Explain the physiology of coagulation of blood.

PART D

3×30=90

Answer any **three** of the following questions, each in about 300 words.
Each question carries 30 marks.

18. What is a nerve impulse ? How is it propagated ? Explain the physiology of axonal transmission of nerve impulse.
19. Make an overview of positive and negative aspects of eugenics.
20. Discuss the various events involved in the mechanism of fertilization.
21. Explain the second step in the mechanism of protein synthesis in prokaryotes.
22. Neo-Darwinism is the synthetic product of Darwinism and Mendelism. Substantiate.