

2008
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.*

Answers must be written in the medium opted (i.e. English or Kannada).

This paper has four parts :

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|----------|-----------|
| 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

4×5=20

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

1. Write short answers for the following :
 - (a) What kind of bond connects adjacent nucleotides in the same strand ?
 - (b) If the parents have AO × AB genotype of blood, what would be the genotype of offsprings and blood group of offsprings ?
 - (c) Give an example for each of mono, di and polysaccharides and structure of glucose.
 - (d) What are the planes of cleavage ?

PART B

10×10=100

*Answer each question in about 100 words. Each question carries 10 marks.
Illustrate your answers.*

2. What are fossils ? Mention their types and formation.
3. Explain geographic and climatic isolation. Give examples.
4. Briefly explain the molecular organization and functional role of the mitotic apparatus.
5. What is the genetics and cell biology behind Down's Syndrome ?
6. What is a fate map ? How is it constructed and what is the advantage ? Draw fate map of Amphibian.
7. What is meant by degeneracy of genetic code ?
8. What are the examples of aromatic amino acids ? Write the structure of any one. Mention the properties of amino acids.
9. Explain briefly structure and function of hearing receptor in mammals.
10. What are the changes in the metabolism of fertilized egg as a consequence of fertilization ?
11. How do T cells and B cells learn to distinguish self from non-self so as to avoid attacking other cells of the host organism ?

(Turn over

PART C

6×15=90

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

12. Describe the ultra-structure and chemical composition of ribosomes.
13. What is crossing over, its cytological basis and significance ?
14. Explain types of mimicry.
15. What are the types of placenta found in mammals ?
16. What are the factors which affect enzyme activity ?
17. Give an account of insect pheromones.

PART D

3×30=90

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

18. Describe the molecular mechanism of replication of DNA in bacteria.
19. What are extra-embryonic membranes and how do they form in chick ?
20. Write an essay on evolution of elephant.
21. Describe the two types of Euploidy, the autopolyploidy and allopolyploidy and their significance.
22. Describe the synthesis and functions of hormones from pancreas and adrenal.