23/1

2008

ZOOLOGY

Paper 1

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 :

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

$4 \times 5 = 20$

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

1. Write short answers for the following :

   (a) Explain five salient features of Porifera.

   (b) What are the ecological pyramids ?

   (c) What are the hormones important to behaviour regulation ?

   (d) What are the types of silk ? Name the insect secreting the silk.

PART B

10×10=100

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

2. Explain briefly the schizogony part of life cycle of Plasmodium.

3. With the help of a diagram, explain Phosphorus cycle.

4. Briefly explain the biology of the causative organism of Filariasis.

5. What are the adaptations required for a life in desert ?

6. Explain the structure, types and functions of air bladder in fishes.

7. Comment on Monotremata, give examples and add a note on their affinities.

8. Fish A and B are stocked in a pond. Species A, numbering 400, consumes 5 kg food per day. B, numbering 1000 consumes 10 kg/day. What is the average food consumption of fish in the pond ?

9. What are the insect pests of stored grains and how do we control them ?

10. What are the inter-specific relations or interactions between species ?

11. Explain the biology of any two insect pests of veterinary importance and their control measures.

PART C

6×15=90

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

12. Explain the morphological and physiological adaptations of helminth parasites.

13. What are the properties of population group ?

14. Comment on the salient features of Apoda and their affinities.

15. Why is temperature considered as a limiting factor ?

16. Explain the hormonal regulation of metamorphosis in insects.

17. What are the basic factors to be considered in the selection of species for fish culture ?

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 structure and mechanism of locomotory organelles in Protozoa.

19. Write an essay on flightless birds.

20. Describe the sources of water pollution, effects on organisms and preventive measures to reduce it.

21. What is the nature of biological rhythms, types of rhythms, tidal rhythms, lunar rhythms and circadian rhythms ?

22. Describe the technique of induced breeding (hypophysation) in fish culture.

23/2

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 :

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 ?

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.