

2 0 1 8

BIO-ZOOLOGY

(Theory)

Full Marks : 35

Time : 1½ hours

General Instructions :

- (i) The figures in the margin indicate full marks for the questions.
- (ii) *All* questions are compulsory.
- (iii) Write all the answers in the Answer Script.
- (iv) This question paper consists of 5 (five) Groups—A, B, C, D and E.
- (v) Attempt all parts of a Group serially in one place.

Group—A consists of 4 questions (multiple-choice type). Each question (Q. Nos. **1–4**) carries 1 mark.

Group—B consists of 4 questions (very short-answer type). Each question (Q. Nos. **5–8**) carries 1 mark and to be answered in one sentence.

Group—C consists of 4 questions (short-answer type—I). Each question (Q. Nos. **9–12**) carries 2 marks and to be answered in 20–30 words.

Group—D consists of 3 questions (short-answer type—II). Each question (Q. Nos. **13–15**) carries 3 marks with alternatives to be answered in 30–40 words.

(2)

Group—E consists of 2 questions (long-answer type). Each question (Q. Nos. **16** and **17**) carries 5 marks with alternatives to be answered in 70–80 words.

GROUP—A

Choose and write the correct answer of the following : 1×4=4

1. All antigens
 - (a) are microorganisms
 - (b) are not microorganisms
 - (c) react against transplant
 - (d) do not react against transplant
2. Tumor-causing virus has
 - (a) t-*onc* genes
 - (b) c-*onc* genes
 - (c) v-*onc* genes
 - (d) tv-*onc* genes
3. The rate of oxygen consumption is higher in
 - (a) polluted water
 - (b) unpolluted water
 - (c) spring water
 - (d) tap water
4. In National Parks
 - (a) no human activity is allowed
 - (b) limited human activities are permitted
 - (c) a large number of human activities is allowed
 - (d) people are an integral component

(3)

GROUP—B

5. Define amphimixis. 1
6. What is contraception? 1
7. What do you understand by the term 'genome'? 1
8. What are restriction enzymes? 1

GROUP—C

9. What is rete testis? 2
10. What are vestigial organs? Give two examples. 2
11. Why is haemophilia called bleeder's disease? 2
12. What is cryopreservation? 2

GROUP—D

13. What is fertilization? State its significance. 1+2=3

Or

Differentiate between oogenesis and spermatogenesis. 3

14. Name the causative agent of malaria. Explain the mode of infection of malaria. 1+2=3

Or

What is cancer? Differentiate between benign and malignant tumor. 1+2=3

(4)

15. Write down the principle involved in DNA fingerprinting. 3

Or

List three applications of recombinant DNA technology. 3

GROUP—E

16. Give the salient features of the theory of Natural Selection proposed by Charles Darwin. 5

Or

What are connecting links? Is *Archaeopteryx* a connecting link? Give reasons in support of your answer. 1+4=5

17. State Mendel's law of independent assortment and explain it with the help of a cross between a homozygous yellow round (YYRR) and a green wrinkled (yyrr) pea plants. What will be the phenotype of the F₁ and F₂ progenies? (1+2)+2=5

Or

In pea, tall vine is dominant over dwarf. Based on a cross between homozygous tall and homozygous dwarf pea plants, show the following :

- (i) Genotype and phenotype of parents
(ii) Genotype and phenotype of F₁ and F₂ progenies
(iii) Phenotype ratio of F₂ progenies 2+2+1=5
