

2 0 1 5

BIO-ZOOLOGY

(Theory)

Full Marks : 35

Time : 1½ hours

General Instructions :

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

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

Group—B consists of 4 questions (very short-answer type). Question Nos. **5** to **8** are of 1 mark each to be answered in 1 word or 1 sentence each.

Group—C consists of 4 questions (short-answer type—I). Question Nos. **9** to **12** are of 2 marks each to be answered in 20–30 words each.

(2)

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

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

- (vi) General Candidates are not allowed to attempt the questions meant for Elementary School Teacher Candidates.

GROUP—A

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

1. Rearing of honeybees is known as

- (a) apiculture
- (b) sericulture
- (c) pisciculture
- (d) lac culture

2. Interferons are

- (a) immunity
- (b) leukocytic
- (c) fibroplastic
- (d) All of the above

(3)

3. Which of the following is the correct food chain?
- (a) Grass Grasshopper Frog Snake Eagle
 - (b) Grasshopper Grass Snake Frog Eagle
 - (c) Eagle Snake Grasshopper Grass Frog
 - (d) Frog Snake Eagle Grasshopper Grass
4. Paleontology is the study of
- (a) insects
 - (b) birds
 - (c) fossils
 - (d) All of the above

GROUP—B

5. Write the full form of FSH. 1
6. Name the main ingredient of tobacco. 1
7. Name the parasite that causes malaria. 1
8. Name the hormone that causes uterine contraction. 1

(4)

GROUP—C

9. What is the first milk which comes out from mother's mammary gland called? State its importance. 1+1=2
10. Why did Mendel selected pea plants for his experiment? 2
11. Define wildlife. Which animal is used as a symbol for WWF? 1+1=2
12. Name two sex-linked diseases. 2

GROUP—D

13. (a) Define ovulation. Draw a labelled diagram of a mammalian ovum. 1+2=3
- Or*
- (b) Define cleavage. Draw a labelled diagram to show different stages of cleavage. 1+2=3
14. (a) Differentiate between antigen and antibody. 3
- Or*
- (b) State at least four salient features of cancer cell. How does metastasis occur? 2+1=3

(5)

15. (a) When was Human Genome Project launched?
What are the main aims of the Project? 1+2=3

Or

- (b) Explain the term 'bioethics'. What are the different bioethical ways concerning biotechnology? 1+2=3

GROUP—E

16. (a) In garden pea, tall (T) is dominant to dwarf (t) and red colour flower (R) is dominant to white (r). A pure tall red-flowered plant is crossed to dwarf white-flowered plant and the F₁ hybrid were allowed to self-fertilize.

(i) Give the parental genotype.

(ii) Give the genotypic and phenotypic ratio of the F₂ generation using Punnett square.

1+3+1=5

Or

- (b) In human being, blue eye colour is recessive to brown eye. A brown-eyed man has a blue-eyed mother.

(i) What is the genotype of the man and his mother?

(ii) What are the possible genotypes of his offsprings if he marries a blue-eyed woman?

1+4=5

(6)

17. (a) Define spermatogenesis. Where does spermatogenesis take place? Name the hormone which controls spermatogenesis. Give the significance of spermatogenesis. 1+1+1+2=5

Or

- (b) What is placenta? Explain the function of placenta. 1+4=5

**[For Elementary School Teacher Candidates only
in lieu of Group—E (Q. Nos. 16 and 17)]**

Answer any *ten* of the following questions : 1×10=10

1. Define spermiogenesis.
2. What is menarche?
3. What are Leydig cells?
4. What is lactation?
5. What is heredity?
6. Define mutagens.
7. What are multiple alleles?

(7)

8. What is testcross?
9. What is drug abuse?
10. Expand Bt cotton.
11. Define apiculture.
12. Define non-infectious disease.
13. Explain the effects of cocaine.
14. What is biogas?
15. Define gene therapy.
16. What do you mean by biopiracy?
17. What are the applications of genetic engineering?
18. What is biosphere?
19. What do you mean by endangered species?
20. Name the three important components of biodiversity.
