

Total Pages—6

UG/II/ZOOL/H/III/18(New)

2018

ZOOLOGY

[Honours]

PAPER – III

Full Marks : 90

Time : 4 hours

*The figures in the right hand margin indicate marks
Candidates are required to give their answers in their
own words as far as practicable*

[NEW SYLLABUS]

GROUP—A

Answer two questions of the following : 15 × 2

- 1. Define system and ecosystem. Explain the law of minimum (Leibig, 1840). Discuss the effect of light on animals. (2 + 2) + 3 + 8**

(Turn Over)

2. (a) With labelled diagram describe the structure of microfilaria of *Wuchereria bancrofti*.
- (b) Describe the stages of development of microfilaria in the mosquito host and state at which stage it is infective to man.
(2 + 6) + (6 + 1)
3. What is ecological pyramid ? Mention different types of ecological pyramids with their advantages and disadvantages. What is an inverted pyramid ? Explain Gause's law of competitive exclusion.
2 + 6 + 2 + 5
4. (a) Explain why secondary immune response is more intense and rapid than the primary immune response.
- (b) State the differences between memory B cells and plasma B cells.
- (c) Describe in brief how monoclonal antibody is produced. Explain the importance of HAT selection medium in this regard. 2 + 2 + 6 + 5

(3)

5. (a) What is induced breeding of fishes ? Describe how brood fishes are selected.
- (b) Describe the method of extraction of hormone from Pituitary gland.
- (c) Write a note on benefits of production of fry by means of induced breeding
- (d) Write the names of hormones used in induced breeding. 2 + 6 + 4 + 3

GROUP – B

Answer five questions of the following : 8×5

6. Discuss the major causes of water pollution and its effect. 4 + 4
7. What is demo ecology ? A population of 50 protozoa increased to 150 after 1 hour. Calculate absolute and specific natality rate. What are fugitive and flagship species ? 1 + 3 + 4

(4)

8. In order to produce antibodies, B cells must be activated by T cells. Discuss with suitable illustration(s) and state the role of different ligand molecules and cytokines in his regard.
2 + 3 + 3
9. Give an account of different types of silk moths found in India with their scientific names and host plants. Describe in brief the process of extraction of silk.
4 + 4
10. Define pheromone and state the chemical nature of pheromones. How pheromones help social insects to communicate among themselves and in maintaining the social structure ? $1 + 2 + 2\frac{1}{2} + 2\frac{1}{2}$
11. Define *in-situ* and *ex-situ* conservation. Explain with justification which one is better option. 2 + 6
12. What is immunoelectrophoresis ? Give a brief description about two dimensional immunoelectrophoresis. Compare it with traditional gel electrophoresis.
2 + 3 + 3

(5)

13. With suitable labelled illustration, describe the life cycle of *Echinococcus granulosus*. 8
14. What is parasitism ? Discuss the different levels of parasitism in nature with proper example. Distinguish between commensalism and mutualism. 1 + 4 + 3

GROUP – C

Answer any five questions of the following : 4 × 5

15. Write a short note on noise pollution. 4
16. What are the different types of density dependent and density independent population regulation ? 4
17. Explain how mosquitoes are involved with the spreading of diseases in man. 4
18. Distinguish between penacid and non-penacid prawns. 4

(6)

19. Write down the principle behind vaccination.
Add a note on subunit vaccine. 2 + 2
20. Write a note on royal jelly. 4
21. What are J-shaped and S-shaped growth curves. 4
22. State the importance of biodiversity. 4
23. What is adjuvant? State its importance in
vaccination. 2 + 2
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