

2015

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*

Illustrate the answers wherever necessary

GROUP – A

Answer any two questions of the following : 15×2

1. (a) What is ecosystem ? Discuss with examples the components in an aquatic ecosystem. 2 + 4

- (b) Mention the difference between grazing and detritus food chain. Discuss the every flow in an autotrophy based ecosystem. 3 + 6
2. (a) What is conservation? State the difference between in situ and ex situ conservation. Describe the present status of tiger conservation in India. 2 + 4 + 4
- (b) What are the criteria for declaring an eco-zone as to be Biodiversity hot spots. Name the hot spots in India. 3 + 2
3. (a) Distinguish innate and learned behaviour. 5
- (b) Write a note on trial-and-error learning. 5
- (c) Innate behaviour can be modified by experience and habituation. Discuss with suitable examples. 5
4. (a) What do you meant by host-parasitic interaction? Describe its molecular basis with reference to protozoan diseases. 3 + 7
- (b) Write a note on DNA hybridization. 5

5. (a) With labelled illustration, describe the life cycle of *plasmodium falciparum*. 2 + 5
- (b) Write about the pathogenicity acid control measures of the parasite. 3 + 5
6. (a) Write the basic principle of ELISA. 2
- (b) Describe the different steps of direct ELISA. 6
- (c) In what respect direct ELISA is different from indirect of ELISA. 3
- (d) Narrate the applications of ELISA. 4
7. (a) Classify immunoglobulin. State the structural peculiarities of IgM and IgA. 6 + 3
- (b) What is dispersion ? State the difference between random dispersion and clumped dispersion. 3 + 3

GROUP – B

Answer five questions of the following : 8 × 5

8. Discuss the role of microbes in pest control. 8

9. Explain circadian rhythm with suitable examples.
Discuss how birds navigate during migration. 4 + 4
10. Characterize vulnerable, endangered and critically
endangered animals based on IUCN norms. 8
11. What is the progenitor cells of macrophages ?
Describe the antimicrobial and cytotoxic
activity of macrophase. 2 + 6
12. Narrate the mechanism of cell dependent
activation of naive B cells. Name the cytokines
that are secreted by the T cells during T cells and
B cells interaction. 6 + 2
13. Write a note on the role of lymphoid and myeloid
cells in immune system. 4 + 4
14. What is myotoxin ? State the use of myotoxin as
insecticidal agent. 2 + 6
15. With suitable example explain the term fixed
action pattern. State the significance and
exploitation of fixed action pattern. 2 + 3 + 3
16. Write a note on on epidemiology pathogenesis
and control measures of Cholera. 2 + 4 + 2

17. What is vaccination ? Mention its types with examples. 1 + 7

GROUP – C

Answer **five** questions of the following : 4 × 5

18. Write a note on Gel diffusion. 4
19. What is Zeitegeber ? 4
20. Give an account of major draw-back of wild life (perfection) act 1972. 4
21. Write a note on the threats to biodiversity. 4
22. Differentiate between Net Primary Production and Gross Primary Production. 4
23. Write a note on Cholera toxin. 4
24. State the molecular mechanism by which leishmanial parasites survive inside macrophages. 4
25. Write a note on adaptive immunity. 4
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