

2018

**M.Sc. Part-I Examination**

**ZOOLOGY**

**PAPER—III ( Group—A )**

*Full Marks : 50*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

*Answer any four questions taking two from each unit.*

**Unit—I**

**(Ecology)**

1. Discuss the effects of temperature on behaviour and distribution of animals. Define ecological efficiency and describe different types of ecological efficiency.

5+2+5½

*(Turn Over)*

2. Define survivorship curve. Explain type II and III survivorship curves with the help of suitable examples. Describe exploitative and interference types of competition. 2+6+4½
3. What is Life-Table ? State its significance. Explain  $\alpha$ ,  $\beta$  and  $\gamma$  diversities. Discuss  $r$  and  $k$  selection strategies with ecological significance. 2+2+4½+4
4. (a) Explain any one of the following : 4½
- (i) Individualistic concept of community.
  - (ii) Ecotone
- (b) Write short notes on any *two* of the following : 2×4
- (i) Food chain and food web
  - (ii) Dominance index
  - (iii) Types of stability
  - (iv) Limitations of Lotka-Volterra model for predation.

## Unit—II

## (Ethology)

5. (a) Define inclusive fitness. Explain four questions of ethology as defined by Tinbergen. 2+4
- (b) What are proximate and ultimate causes in ethology ? What is habituation ? 4½+2
6. (a) State shelter seeking behaviour with example. Explain sexual selection. 3+3
- (b) Innate behaviour is the 'hard-wiring' of the nervous system—justify with example. 3
- (c) Explain Fixed Action Pattern as inclusive fitness. 3½
7. Define altruism and reciprocal altruism. Compare classical and operant conditioning. Explain imprinting with example. What is escape behaviour ? 4+4+2½+2
8. (a) Explain any *one* of the following: 4½
- (i) Anting
  - (ii) Handicap hypothesis

(b) Write notes on any two of the following : 2×4

- (i) Optimal Foraging Theory
  - (ii) Sexual dimorphism
  - (iii) Alarm signal and mobbing
  - (iv) Conflict.
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