# M.Sc.

# 2014

## 2nd Semester Examination

### ZOOLOGY

### PAPER—ZOO-201

### Full Marks : 40

### 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 *all* questions of the following.

### (Group–A)

### ( Biosystematics )

1. Answer any *two* questions of the following :     2×2

   (a) State the objectives of systematics.

   (b) Taxonomic characters and their sub–divisions.

   (c) Phenon and Taxom.

(d) α, β and γ Taxonomy.

**2.** Answer any *two* questions of the following : 4×2

(a) Type concept – explain.

(b) Typological species concept discuss the reasons of rejection.

(c) Evolutionary species concept – state the significance.

(d) The biological species concept and its drawbacks.

**3.** Answer any *one* question of the following : 8×1

(i) Describe in details on the evidence of geographic speciation in the light of

   a) Levels of speciation.

   b) Geographic variation of species characters.

   c) Boarder line cases and distribution pattern.

(ii) a) Explain how DNA hybridization method can determine relation among taxa ? Comment on the utility of molecular tools in taxonomy.

   b) State why taxonomy is important in management of Agriculture/fishery.

*(Continued)*

## ( Group–B )

## ( Ecology )

**4.** Answer any *two* questions of the following :     2×2

(a) Highlight the concept of Biosphere and Ecosphere.

(b) Mention the significance of macroecology.

(c) Differentiate r and k strategies.

(d) Define 'Ecological Equivalent' with example.

**5.** Answer any *two* questions of the following :     4×2

(a) Mention different types of food webs and draw relationships between them.

(b) Elaborate the concept of Evolutionary Stable Strategy (ESS) in the light of Game Theory.

(c) Briefly state Leibig's Law of Tolerance.

(d) Explain Gaia hypothesis.

**6.** Answer any *one* question of the following :     8×1

(a) How stability for an ecosystem is maintained through feedback control ? In what way redundancy of components influence ecosystem stability.     6+2

(b) What is competitive exclusion principle ? Explain it with experimental evidence. Briefly discuss on three basic types of Life Tables.    1+2+5

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