

2017

**ZOOLOGY – HONOURS**

**Sixth Paper**

**(Unit – I)**

**Full Marks – 50**

*The figures in the margin indicate full marks*

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

Answer **Question No. 1** and **any three** questions from **Group – A**  
and **one** question from **Group – B**

1. Answer **any five** questions from the following :

2×5

- (a) How does Law of Superposition help to determine Geological time scale ?
- (b) Name the biogeographical regions where *Neoceratodus* sp., *Cryptobranchus* sp., *Phrynosoma* sp. and *Hylobates* sp. are found.
- (c) Which age is termed as “Age of fishes” and why ?
- (d) Define Mendelian Population.
- (e) What is traphallaxis ?
- (f) Write the full form of IUBS and ICZN.
- (g) Define subspecies with example.
- (h) How does holotype differ from homotype ?
- (i) Why is recognition of kinship important in social behaviour of animals ?

**Group – A**

**( Evolution and Systematics )**

Answer **three** questions from the following

2. (a) Explain the mechanism of dispersal of catadromous and anadromous animals.

5

(b) Discuss the xeric adaptation of camel against heat and sand storm.

5

[ Turn Over ]

3. (a) Explain how could industrial melanism be sited as an example of directional selection. 5
- (b) Explain the role of migration affecting Hardy-Weinberg equilibrium. 5
4. (a) Trace the origin of mammals from therapsid reptiles with special reference to the evolution of teeth. 5
- (b) Define Mullerian mimicry with an example. 2
- (c) Discuss  $C^{14}$ -method for fossil dating. 3
5. Write short notes on : 4×2½
- (a) Limitations of Biological species concept.
- (b) Discontinuous distribution.
- (c) Significance of gene pool in microevolution.
- (d) Archaic mammals.
6. Distinguish between : 4×2½
- (a) Panmictic and apomictic species.
- (b) Cladistic and phenetic classification.
- (c) Microtaxonomy and Macrotaxonomy.
- (d) Linnaean hierarchy and Taxonomic key.

### Group – B

#### ( Animal Behaviour )

Answer *one* question from the following

7. (a) How does circadian rhythms differ from circannual rhythms ?  
Where is the circadian clock located ? — Cite one example from the animal kingdom. How could you determine the relationship between exogenous and endogenous stimuli in circadian rhythm found in animals ? 1+(1+1)+3
- (b) How pheromones control the social behaviour of honey bee ? 4
8. Write notes on *two* of the following : 5×2
- (a) Significance of sterile castes in a termite colony.
- (b) Reciprocal altruism hypothesis.
- (c) Role of male fish in parental care.
- (d) Konrad Lorenz – experiment to explain imprinting.