B.Sc. Part-III (Honours) Examination, 2021
Subject: Zoology
Paper: IX

(New Pattern)

Full Marks: 50   **Time : 2 Hrs**

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

1.   Answer any *four* questions from the following: **5 × 4 = 20**

   a) Classify mating systems in animals involving innate and learned behaviours. State significance and give example in each case.
   b) What is Altruism? Briefly describe the management strategies of Rhinos in India. Write a short note on Fixed Action Pattern.
   c) 'Two channel and universal models are more practical than single channel model of energy flow through trophic levels' – justify the statement with proper diagram.
   d) Differentiate between exponential and logistic growth curves of population. Mention the density dependent factors of population growth regulation.
   e) Differentiate between probability and non-probability sampling. Why simple random sampling is considered as one of the best probability sampling technique? Mention the application of the chi-square test in biology.
   f) Elucidate briefly the steps involved in induced breeding of any major carp. Name the major Fowl breeds of India.

2.   Answer any *three* questions from the following: **10 × 3 = 30**

   a) State the life cycle of *Wuchereria bancrofti* with proper diagram. Mention the control measures of *Culex* mosquito.
   b) Find the t-test value for the following two sets of heights of the marigold plants (in inches) from two different fields: 7, 2, 9, 8 and 1, 2, 3, 4.
   c) Differentiate between the cell walls of gram positive and negative eubacteria. Define Phoresis and hyperparasitism with example. Briefly describe the physiological changes that may occur during host parasite interaction.
   d) Mention the main causes and characteristics of ecological succession. Add brief notes on cyclical succession and seral community.
   e) Mention the merits and demerits of artificial insemination. Briefly describe bionomics and control measures of the brown plant-hopper, *Nilaparvata* sp.

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