

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, MAY 2025

THIRD YEAR [BATCH 2022-25]

ZOOLOGY [HONOURS]

Paper : CC 14

Date : 07/05/2025

Time : 11 am – 1 pm

Full Marks : 50

1. Answer **any five** questions : [5 × 2]
- What are the characteristics of fixed action patterns (FAP)? Describe a FAP with any two suitable examples.
  - Describe any two parental care strategies observed in fishes with suitable examples.
  - What is Plymouth Rock and where you find it?
  - Write the name of two Indian species of prawn.
  - Define contact poison pesticides with a suitable example.
  - What is voltinism? Name two bivoltine races of silk moth.
  - Define a population in terms of biostatistics. Define Primary and Secondary data.
  - Indicate whether the following variables are Nominal, Ordinal, or Ratio Scales.  
(i) Diastolic blood pressure, in mmHg. (ii) Staging of breast cancer as Type I, Type II, Type III, or Type IV.

Answer **any four** questions :

- Write down the key aspects of the 'Tit-for-Tat strategy'.
  - What do you mean by 'Reciprocal altruism'? Explain its evolutionary significance.
  - Write down differences between mimicry and colouration with examples. [4+(1+2)+3]
- Write the major differences between Penaeid and Non Penaeid.
  - Comment on merits and demerits of exotic fishes.
  - Write the process of pearl culture in brief. [3+4+3]
- Mention the scientific names of silk moth and their host plants of mulberry, tasar, eri and muga silks.
  - Describe the composition of silk.
  - How the quality of a silk can be determined?
  - What is spun silk? [4+2+3+1]
- What are the different kinds of bird migration you have known depending upon the plane of movement of the migrants?
  - Discuss the problem of navigation related to migration.
  - Define partial migration. [5+3+2]
- What are GEP, ETL and EIL?
  - What is shellac? What are the uses of it?
  - What is the effect of *Nosema* infection in bees?
  - What is the nature of damage caused by *Sitophilus oryzae*?
  - Write the common name and scientific name of any major host plant of lac insect. [2+(1+2)+2+2+1]

7. a) What is the function of queen excluder in a Langstroth beehive.  
 b) Comment on the roles of *Apis mellifera* and *Trigona* sp. in the commercial honey production.  
 c) Write down the composition of honey.  
 d) Comment on the role of natural predators as pest control agents with a suitable example.  
 e) What do you mean by Vermicomposting? Mention the benefits of Vermicomposts. [2+2+2+2+(1+1)]

8. a) The percentage of water content in varieties of watermelons was measured and following results were obtained. [10×1]

Variety	Average Water Content	Number of Water melons	Standard Deviation
A	92%	12	15%
B	84%	15	19%

Find out whether there is significant difference in water content of two varieties. Given  $t = 1.708$

9. A) i)What are the key criteria for using a ‘paired t-test’?  
 ii)What is ‘degrees of freedom’ (df)?  
 iii)‘Confidence intervals’ are useful when trying to estimate -----  
 a) unknown parameters  
 b) known parameters  
 c) unknown statistics  
 d) known statistics
- B) What do we do if there is no mode in the dataset? Find the mean , median and mode for the following numbers 7,4,3,5,6,3,3,2,4,3,4,3,3,4,4,3,2,2,4,3,5,4,3,4,3,4,3,1,2,3. [(3+1+1)+5]

————— × —————