

B.Sc. (Honours) Examination, 2019
Semester–VI
Zoology
Course – CCT-XVI (Core)
(Applied Zoology and Biotechnology)

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin.

Answer *any five* questions.

1. Discuss the structural plan of an artificial hive used in modern apiculture. Add a note on the tail wagging dance of the honey bee with suitable diagram. How nectar is converted to honey? Comment on the chemical composition of honey. 3+2+1+2=8
 2. Comment on the life history and nature of damage caused by the sugarcane leaf hopper. Write down the control measures of the paddy pest *Scirpophaga incertulas*. What is integrated pest management (IPM)? Write down the advantages of IPM. (1+1)+2+2+2=8
 3. Give a brief account of the life cycle of *Plasmodium vivax*. Add a note on its pathogenicity. 6+2=8
 4. Name the vectors transmitting the pathogen *Trypanosoma cruzi* and *T. brucei*. Describe the life cycle of one of them. 2+6=8
 5. Describe the morphology of *Pediculus humanus corporis* with a neat diagram. Name the pathogenic agent and the diseases transmitted by this vector. What are the controlling measures for preventing the disease? 4+2+2=8
 6. What is a cloning vector? Describe the essential requirements for a vector to be used in recombinant DNA technology. Name four vectors used in DNA technology and mention their insert size. 2+4+2=8
 7. Write short notes on *any two* of the following: 4+4=8
 - (a) Structure of silk gland and composition of silk.
 - (b) Bubonic plague.
 - (c) Method of inserting DNA into a vector.
 - (d) Types and modes of cutting DNA by restriction endonuclease.
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