

3 Yr. Degree/4 Yr. Honours 1st Semester Examination, 2023 (CCFUP)

Subject : Zoology

Course : ZOO1051 (SEC)

(Apiculture)

Time: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer any five questions from the following: 2×5=10
- What is Apiculture? Who and when first started the commercial beekeeping in India?
 - Name two artificial hives that are mostly used for beekeeping.
 - Name two Indian species of honeybees under the genus *Apis*.
 - Mention the systematic position of Indian honeybees up to order.
 - What is bee wax?
 - What is queen excluder? Why it is used in modern bee-hive boxes?
 - What are guard bees? When and why they are formed within a colony?
 - What type of behaviour is noticed in honeybee workers when suddenly a colony becomes queen-less?
2. Answer *any two* questions from the following: 5×2=10
- Name the different castes of honeybees. Mention their morphological specialization and average life spans. 1½+3½
 - Draw and describe briefly the mouth parts of a worker honeybee. 2+3
 - What is swarming? Mention three factors which are connected with swarming. 2+3
 - What is language of bees? How honeybees communicate with each other? 1+4
 - Write the composition and use of propolis and royal jelly. 2½+2½
3. Answer *any two* questions: 10×2=20
- Draw and describe the Langstroth bee hive. What are the advantages of this hive over the traditional ones? Name two accessories used for the modern bee keeping method. 3+3+3+1
 - What is nuptial flight? Briefly describe the life cycle of a honeybee with suitable drawing of different stages. How many times a queen honeybee can copulate with drones? Why the queen mates with drones of other hives? 1+7+1+1
 - Briefly describe the modern method of honey extraction with schematic flow chart. Write the different impurities within the extracted honey and name few of them with their economic importance. 6+4
 - Describe the parasitic diseases of honeybees. What is TSBV? Name the different enemies of honeybees. Briefly describe the role of KVIC in beekeeping in India. 3+1+3+3

ZOOL1051

(2)

3 Yr. Degree/4 Yr. Honours 1st Semester Examination, 2023 (CCFUP)

Subject : Zoology

Course : ZOOL1051 (SEC) (OR)

(Vermiculture)

Time: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

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

1. Answer *any five* of the following questions: 2×5=10
- (a) Write down the taxonomic position of earthworm.
 - (b) Mention scientific names of two endogenic earthworms.
 - (c) Write down the process of vermicast collection.
 - (d) What is monoculture of earthworm in wormery?
 - (e) Do you think that paddy straw will produce more results than leaf litter in vermicompost? Why?
 - (f) Write two differences between vermiculture and vermitechnology.
 - (g) Cite examples of low-cost/no-cost containers that should be used for vermicomposting.
 - (h) Write down the conditions favourable for earthworms in the decomposing system.
2. Answer *any two* of the following questions: 5×2=10
- (a) What is vermi tea? How it is collected? What are its uses? 2+2+1
 - (b) Mention the major beneficial bacteria observed in vermiculture. Write the roles of two beneficial bacteria in vermicomposting. 2+3
 - (c) Write down the differences between indoor and outdoor culture techniques. 2½+2½
 - (d) Mention the materials required for the vermicomposting. Briefly describe the harvesting procedure of vermicompost. 2½+2½
3. Answer *any two* questions: 10×2=20
- (a) Mention the important diseases encountered in earthworms and suggest their management protocols. Write down the various predators of earthworms and their control measures. 2½+2½+2½+2½
 - (b) What is 'Vermiwash'? Mention the difference between vermiwash and vermicompost. How it is prepared? Write down its application in agriculture. 2+2+3+3
 - (c) Briefly describe the methodology of vermicompost preparation. What precautions would you like to follow during vermicompost preparation? 6+4
 - (d) Describe in brief the status of vermicompost in India. Enumerate the potentialities of vermicompost in India. 5+5
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