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Total No. of Pages : 02

Total No. of Questions : 09

**B.Sc. (Agriculture) (Sem.-6)**  
**MANAGEMENT OF BENEFICIAL INSECTS**  
Subject Code : BSAG-605-19  
M.Code. : 91796  
Date of Examination : 11-07-22

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a. Explain briefly the social roles played by different castes of honeybees.
- b. What is scope of apiary in India and its economic importance to the beekeepers?
- c. What are main bee enemies and give in brief their management?
- d. What are foraging and swarming in honeybees?
- e. What are uni-, di- and multi-voltine races of the silkworm?
- f. What are the general measures for management of silkworm diseases?
- g. Comment on an egg and larval parasitoid. Give life cycle of Trichogramma.
- h. Write in brief on functional significance of different castes in a bee colony.
- i. What are abiotic and biotic enemies of lac cultivation?
- j. List different types of lac harvesting. Why immature harvesting is recommended?

### SECTION-B

2. What are main insect orders having major role in biological control of insect pests? Explain mass multiplication technique for Trichogramma.
3. How green lacewing is important? Give its laboratory mass multiplication and release against which pests.
4. Write brief note on common diseases and insect natural enemies of honeybees. Give the names of some important bee-keeping centres in India.
5. Give brief description of bees belonging to family Apidae. What is commercial importance of *Apis dorsata*, *Apis indica*, *Apis florea* and *Apis mellifera*?
6. Write short note three valuable products that act as source of raw lac and what are shellac, seed lac and button lac? How the life cycle of lac insect is completed?

### SECTION-C

7. What is current status of production and marketing of apiculture, sericulture and lac culture in Punjab? Explain their future scope from marketing point of view.
8. How honeybees play an important role in cross pollination? Give their exploitation and case studies in some selected crops. What bees hive products and their economic importance?
9. What are the major insect pests and diseases in sericulture? What equipments are used for mass rearing of mulberry silkworm and also give methods of disinfection while their mass rearing?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**