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Total No. of Pages : 02

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# B.Voc. (Agriculture) (Sem.–2) FUNDAMENTALS OF INSECT MORPHOLOGY AND SYSTEMATICS Subject Code : BVAG203-18 M.Code : 79597 Date of Examination : 07-07-22

# 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) Define entomology. What is an insect, define it?
- b) Name the first Entomologist to the Government of India. When the IARI, ICAR and Entomological Society of India, established?
- c) Name father's of modern applied entomology and modern beekeeping in India. What are five journals dealing with entomological research, being published in India?
- d) When 1<sup>st</sup> edition of "Systema naturae" published. Why its 10<sup>th</sup> edition famous?,
- e) Define species, sub-species, genus and family.
- f) Define wing veriation. What are major modifications of insect wings?
- g) Give role of antennae as chemoreceptors. What types of antennae are present in honeybees, ants, cabbage butterfly and housefly?
- h) How cuticle is formed? Briefly explain sub-division of cuticle.
- i) Briefly, describe piercing-sucking and chewing lapping mouth parts with one example?
- j) List various male reproductive organs in insects. Describe briefly any one organ.

#### **SECTION-B**

- 2. Define systematics. Give objectives of insect classification. How systematics does differ from taxonomy, classification and identification?
- 3. Describe the process of cuticle expansion and the hormones involved in cuticle production. What are functions of insect cuticle?
- 4. Explain various modifications of insect mouth parts giving one example.
- 5. Define metamorphosis. Based on the extent of changes in metamorphosis, how the insects are classified?
- 6. Describe female reproductive organs in insects. How many types of ovarioles are found in insects?

## **SECTION-C**

- 7. What are wing modifications in insects? Giving short note on wing coupling and its significance, describe various types of wing coupling mechanisms in insects.
- 8. Draw morphological insect body structure which might be closest to the generalized form, i.e. a grasshopper. Also give a schematic section of typical insect integument, showing the various layers.
- 9. Give brief about insect sensory system. What are the methods for detecting chemical stimuli in insects and how temperature and humidity are perceived in insects?

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.