

B.Sc. Part—II Semester—III Examination

APICULTURE

(Entomology and Bee Pathology)

Time : Three Hours]

[Maximum Marks : 80

Note :—All questions are compulsory and question 2 to 7 carry equal marks.

I. (A) Fill in the blanks :—

- (a) Wax glands are located on _____ . ½
 (b) The castes in honey bee is queen, drone and _____ . ½
 (c) Egg laying is the function of _____ bee. ½
 (d) Body of honey bee is divided into head, thorax and _____ . ½

(B) Choose correct option :

- (a) Sting apparatus is located on : ½
 (i) abdomen (ii) head (iii) thorax
 (b) The bees with single comb nesting are — ½
 (i) *A. dorsata* (ii) *A. cerana* (iii) *A. mellifera*
 (c) Paper wasp is insect — ½
 (i) beneficial (ii) harmful (iii) none of these
 (d) The optimum temperature in the hive is — ½
 (i) 40 °C (ii) 34 °C (iii) 15 °C

(C) Answer in **ONE** sentence each :

- (a) Give names of any two beneficial insects. 1
 (b) Where is the wax gland located on body of bees ? 1
 (c) What is apis ? 1
 (d) Give names of any two predators of bees. 1

2. Discuss various harmful and beneficial insects to human beings. 12

OR

Give classification of hymenoptera and with suitable example explain solitary and social bees. 12

3. (a) Explain nesting behaviour of *A. dorsata* and *A. florea*. 4
 (b) Give any four identifying characters of *A. cerena*. 4
 (c) Draw well labelled diagram of honey bee. 4

OR

- (d) Describe nesting behaviour of *A. cerena* and *trigona*. 4
 (e) Give duties of worker in colony. 4
 (f) Explain sting apparatus with diagram. 4
 4. (g) Explain digestive system of honey bee. 4
 (h) Explain eyes of honey bees. 4
 (i) Explain respiratory system in honey bee. 4

OR

- (j) Explain nervous system in honey bee. 4
 (k) Describe antennae of honey bee. 4
 (l) Explain circulatory system in honey bee. 4
 5. Discuss temperature, humidity and ventilation with reference to bee hive – how the bees control these climatic conditions ? 12

OR

Discuss communication in honey bee colony. 12

6. (m) Explain causes and symptoms of American Fowl Brood disease. 4
 (n) What is Chalk Brood disease ? Explain its causes. 4
 (o) Give symptoms of thysac brood. 4

OR

- (p) Explain effects of poisonous pollen and nectar on bees. 4
- (q) What is Nosema ? Give any two effects. 4
- (r) Give general classification of bee diseases. 4
- 7. (s) Explain any two insect predators of honey bee. 4
- (t) Describe method to protect bees from birds. 4
- (u) Describe method to control mites in the bees. 4

OR

- (v) Explain methods to control lizard and frogs in apiary. 4
- (w) Give the method of control of wasps in apiary. 4
- (x) What is bee breeding ? Give its advantages. 4

