

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 Nos. 2 to 7 carry equal marks.

1. (A) Fill in the blanks :

- (a) *Ascospaera apis* is a _____ disease that attacks the gut of the larva. ½
- (b) *Apis florea* belongs to order _____. ½
- (c) Wax glands are located on _____ in honey bee. ½
- (d) Lizard is _____ of honey bee. ½

(B) Choose correct option :

- (a) Multiple parallel combs are build by : ½
 - (i) *Apis cerana* (ii) *Apis dorsata*
 - (iii) *Apis florea* (iv) *Trigona*
- (b) The stinz apparatus in honey bee is modified : ½
 - (i) Oviduct (ii) Ovipositor
 - (iii) Ovary (iv) Ovisector
- (c) In honey bee 'bee dance' is a means of : ½
 - (i) Locomotion (ii) Recreation
 - (iii) Communication (iv) Relation
- (d) 90% population in bee hive is of caste : ½
 - (i) Queen (ii) Drone
 - (iii) Worker (iv) Larvae

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

- (a) What is the function of drone bee ? 1
- (b) Name two predators of honey bee. 1
- (c) How do the honey bees communicate ? 1
- (d) What is the food of honey bee ? 1

2. Describe beneficial insects to man and describe bees' relation to human culture. 12

OR

Give classification of honey bee in detail and explain solitary and social bees with example. 12

3. Explain the following :
- (a) Genera of bees. 4
 - (b) Identification of *Apis dorsata*. 4
 - (c) Queen bee of *Apis iridica*. 4

OR

- (d) Division of labour in bee hive. 4
 - (e) General organization of *Trigona*. 4
 - (f) Identification of *Apis mellifera*. 4
4. Describe the following :
- (g) Antennae of honey bee. 4
 - (h) Metamorphosis of queen bee. 4
 - (i) Respiratory system of honey bee. 4

OR

- (j) Eyes of honey bee. 4
 - (k) Circulatory system of honey bee. 4
 - (l) Digestive system of honey bee. 4
5. Describe significance of temperature and humidity in bee hive. 12

OR

Describe communication behavioral relation in honey bees and bee dance. 12

6. Explain the following :
- (m) Effect of poisonous pollen and nectar on bee. 4
 - (n) American foul brood disease of honey bees. 4
 - (o) Ectoparasites in honey bee. 4

OR

- (p) Viral infection of honey bee. 4
- (q) Lethal effects of chemicals on honey bees. 4
- (r) Classification of bee diseases. 4

7. Describe the following :
- (s) Birds as enemies of honey bee. 4
 - (t) Control of wasp in Apiary. 4
 - (u) Insect predators in Apiary (any two). 4

OR

- (v) Lizard as enemies of Apiary. 4
- (w) Methods of queen bee breeding. 4
- (x) Control of bee mites in Apiary. 4