

AR - 555

Third Semester B. Sc. (Part - II) Examination

3S : APICULTURE

(Entomology and Bee Pathology)

P. Pages : 5

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions are compulsory.
(2) Question No. **one** carries **eight** marks.
(3) Question No. **two** to **seven** carry **twelve** marks each.
(4) Illustrate your answers with suitable diagrams wherever necessary.

1. (a) Fill in the blanks :—

(i) Bees are included in order _____ .

(ii) Aspergillus species cause a disease called _____ in bees.

(iii) The genus of stingless bee is _____ .

(iv) Apis _____ is the largest honey bee. 2

(b) Choose correct alternative from.

(v) Wax glands are found in _____ .

(a) head

AR-555

P.T.O.

- (b) abdomen
 - (c) legs
 - (d) none of these
- (vi) Which of the following is a bacterial disease of honey bees ?
- (a) Foulbrood
 - (b) Stonebrood
 - (c) Sacbrood
 - (d) All of these
- (vii) Bees have a pair of _____ eyes.
- (a) Ocelli
 - (b) Simple
 - (c) Compound
 - (d) All of these
- (viii) _____ has no sting.
- (a) Worker
 - (b) Queen
 - (c) Drone
 - (d) All of these

(c) Answer in **one** sentence :

(ix) What are spiracles ?

(x) What is the function of **Molpighian** tubules ?

(xi) Define foraging.

(xii) What is nuptial flight ?

4

2. Describe the role of man as hunter and beekeeper.

OR

Describe the classification of hymenoptera with position of bees in hymenoptera. 12

3. Attempt the following :

(a) Castes and division of labour in *Trigona*.

(b) Comparative morphology of *Apis* Species.

(c) Wax gland

OR

(d) Sting apparatus.

(e) Scent gland.

(f) Nesting behavior of Trigona. 12

4. Describe the following :

- (g) Digestive system of honeybees.
- (h) Sense organs in honeybees.
- (i) Physiology of reproduction in bees.

OR

- (j) Metamorphosis in different castes of honeybees.
- (k) Nervous system of bees.
- (l) Physiology of digestion in bees. 12

5. Describe the significance of temperature, humidity and ventilation in hive.

OR

Describe orientation and communication of bees through dance language. 12

6. Attempt the following :—

- (m) Toxic effects of poisonous pollen.
- (n) Viral disease of bees.
- (o) Fungal diseases of bees.

OR

- (p) Bacterial diseases of bees.
- (q) Toxic effects of insecticides.
- (r) Protozoan disease of bees. 12

7. Describe the following :

- (s) Wasps and robberflies as enemies of bees.
- (t) Apiary sanitation.
- (u) Breeding methods for evaluating bee strains.

OR

- (v) Frogs and birds as enemies of bees.
- (w) General methods of diagnostic preventing.
- (x) Spiders and pseudo scorpions as bee enemies. 12



