

**B.Sc. (Part—III) Semester—V Examination**  
**APICULTURE**  
**(Cytogenetics and Bee Breeding)**

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) Type of bee \_\_\_\_\_ select for bee keeping. ½
  - (b) Mitosis is known as \_\_\_\_\_ division. ½
  - (c) \_\_\_\_\_ plays important role in cellular digestion. ½
  - (d) \_\_\_\_\_ bee involve in making wax comb. ½
- (B) Choose correct option :
- (e) Location of availability of food – a message convey by :
    - (i) Sound (ii) Chemical (iii) Dancing ½
  - (f) Artificial hive is made up of :
    - (i) Iron (ii) Wood (iii) Plastics ½
  - (g) Study of cell is called as :
    - (i) Genetics (ii) Cytology (iii) Biology ½
  - (h) Apiculture is the culture of of :
    - (i) Queen (ii) Workers (iii) Bees ½
- (C) Answer in **one** sentence each :
- (i) What is instrumental insemination ? 1
  - (ii) What is Pedigree ? 1
  - (iii) What is the function of workers ? 1
  - (iv) What is Meiosis ? 1
2. (a) Describe Golgi apparatus. 4
- (b) Explain function of Endoplasmic Reticulum. 4
- (c) Explain the scope and limitations of instrumental insemination for bees. 4
- OR**
- (d) Describe Nucleus. 4
  - (e) Explain Progeny Testing Methods for bees. 4
  - (f) Describe Mitochondria. 4
3. (g) Explain the general methods of bees breeding. 4
- (h) What are the equipment and tools are needed for bee breeding programme. 4
- (i) Describe Meiosis. 4

**OR**

- (j) Draw the well labeled diagram of Mitosis. 4
- (k) Explain the special apiary management problems. 4
- (l) Describe applicability of individual methods for bees. 4
- 4. Discuss the selection criteria and their different parameters – Honey yield and Tongue reach. 12

**OR**

Discuss the following components like Honey yield, Body size, Tongue reach and Frequency of egg laying and hatching are effective for higher yield. 12

- 5. Discuss Pedigree records system adapted for maternal living age of bees. 12

**OR**

Discuss the methods of evaluation for individual colony records. 12

- 6. (m) Describe rearing of Pedigree queen bees. 4
- (n) Explain the concept of minimizing inferior mating. 4
- (o) Describe maternal pedigree for bee selection. 4

**OR**

- (p) Explain the requirement migration for queen rearing. 4
- (q) Describe the benefits of superior mating. 4
- (r) Explain advance provisioning in Maternal Pedigree. 4
- 7. (s) Explain sealed virgin queens. 4
- (t) Describe Re-migration of stocks. 4
- (u) Explain single mating. 4

**OR**

- (v) Explain the special management problems for organizing mating yards. 4
- (w) Explain multiple mating. 4
- (x) Describe the method of progeny testing. 4