

**2024**

**ZOOLOGY — HONOURS**

**Paper : SEC-A-1 and SEC-A-2**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**Paper : SEC-A-1**

**(Apiculture)**

**Full Marks : 80**

**Group - A**

Answer *any twenty* questions.

2×20

1. What is Brood Chamber?
2. Mention the uses of bee-veil.
3. Mention the significance of round dance.
4. Mention the significance of swarming activity.
5. Differentiate Worker cells and Queen cells of a beehive.
6. Name one non-apis bee found in India mentioning its distribution and host plant.
7. Write the composition of bee venom.
8. Give the scientific names of Rock bee and European bee.
9. How a drone is produced in a colony?
10. Define 'dearth period'.
11. Write the suitability of *Apis dorsata* for artificial rearing.
12. Mention the functions of pheromone in bee colony.
13. What is royal-jelly?
14. Write the composition of bee bread.
15. Explain the uses of liquid smoker in Apiculture industry.
16. What is Ant Well?

**Please Turn Over**

**(1160+1161)**

17. Name two arthropod enemies of bees.
18. What is pollen supplement? Why pollen supplement is required for bee colony?
19. Write the importance of migratory beekeeping.
20. Explain how honey is formed from nectar.
21. What is bee pasturage?
22. Mention the significance of Nuptial flight.
23. What is honey dew? Mention its composition.
24. What is honey flow period?
25. What is propolis? Mention its significance.

### Group - B

Answer *any eight* questions.

26. With a word diagram describe the different stages of life cycle of *Apis indica*. 5
27. Write an account on the Newton box with diagram. 5
28. Write the characteristic features of Drone and Worker bees. 5
29. Mention any one fungal disease, its causative agent, symptoms and control affecting the larva of honeybees. 1+1+2+1
30. Write short note on extraction and preservation of honey. 5
31. Mention the prospects of Apiculture as cottage industry in India. 5
32. Explain the nutritive and medicinal value of honey. 5
33. Write a note on floral interaction to honeybees. Mention its significance. 5
34. Elucidate briefly the nature of damage caused by a parasite and bacteria to the honeybees. Write a note on their respective control measures. 5
35. What is dance language hypothesis? Explain the dance phenomenon and its significance with examples. 5
36. Write a short note (Pathogen, Symptoms and Control) on Clustering disease of honeybees. 5
37. What is altruism? The drone has no father but has a grandfather. — Explain. 5

**Paper : SEC-A-2****(Sericulture)****Full Marks : 80**

1. Answer **any five** questions : 2×5
- Distinguish between 'Bale' and 'Bave'.
  - Define Voltinism.
  - What do you mean by DFL?
  - What does 'Flimsy Cocoon' mean?
  - What is raw silk?
  - What is spinneret?
  - Mention the use of 'Takli' in Sericulture.
  - Mention the location and function of Lyonet's gland.
2. Write short notes on (**any four**) : 5×4
- Characteristics of ideal rearing house of mulberry silk moth
  - Control measures of Uzi fly
  - SWOT analysis of the Indian silk industry
  - Sericulture and women empowerment
  - Objective and mechanism of cocoon drying
  - Mother moth examination.
3. Answer **any five** questions :
- Distinguish between diapausing eggs and non-diapausing eggs.
    - Name any three non-mulberry silk moths and their respective host plants. 4+(2×3)
  - How can you identify male and female pupa of silk moth?
    - Draw a labelled diagram of silk gland.
    - Mention the location of Herold's gland and Ishiwata's fore gland.
    - Mention any two mountages widely practiced in India. 2+4+2+2
  - What is ERR? Describe the process of 'seed production' in Sericulture industry.
    - Comment on the role of C.S.B. in promoting Sericulture industry in India. 5+5

**Please Turn Over****(1160+1161)**

- (d) (i) 'Disinfection is an integral part of healthy and successful silkworm rearing.' – Justify the statement.
- (ii) Discuss the method of deflossing.
- (iii) What is dupion? 5+3+2
- (e) (i) What is brushing? Write a note on different brushing methods in silkworm rearing.
- (ii) What is bed cleaning? Discuss different methods of bed cleaning and their significances. 5+5
- (f) (i) Name one protozoan and one viral disease of silkworm and their symptoms.
- (ii) What do you mean by coupling and decoupling of moths?
- (iii) Name any two major pest of silkworm with their nature of damage. (2+2)+2+(2+2)
- (g) (i) Discuss salient features and prospects of Seri-Biotechnology in India.
- (ii) Write a note on problems and limitations of Sericulture practices in India.
- (iii) What strategies are to be adopted for long-term mulberry garden setting? 3+4+3
- (h) (i) Write a note on Silk Trade through 'Silk Route'.
- (ii) How do you identify artificial silk? 5+5
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