

The Federation of Irish Beekeepers' Associations
(Comhnascadh Cumann Beachairí na hÉireann)



Education and Examination Board

Gormanston Intermediate Scientific Examination 2017

Date: Tuesday, 1st. August 2017.

Three hours (09.30-12.30)

You must answer QUESTION 1 and FOUR OTHER QUESTIONS

Draw diagrams and sketches where appropriate.

Write clearly and adhere strictly to the subject matter of the questions.

Start each question on a new page.

1. Describe

- a) The life cycle of Varroa Destructor (both stages) (6 marks)
- b) The effects of Varroa mites on the individual bees in a heavily infested colony. (4 marks)
- c) Describe in detail an autumn and a winter treatment for control of Varroa allowed in Ireland. (5 x 2 marks)

- 2.
- a) Draw a labelled diagram of a named flower of value to honeybees.
 - b) Distinguish between pollination and fertilisation.
 - c) Distinguish between self-pollination and cross-pollination.
 - d) Why is pollen important for a honeybee colony? (4 x 5 marks)

- 3.
- a) Draw a large outline diagram of a honeybee. In this diagram draw the alimentary canal, including the salivary glands, labelling all parts. (10 marks)
 - b) Describe the conversion of nectar to honey, include the physical and chemical changes involved. (10 marks)

- 4.
- a) Draw a labelled diagram of the circulatory system of the honeybee. Mark in the directions of flow of the haemolymph in the diagram. (10 marks)
 - b) Give the functions of haemolymph in the honeybee. (10 marks)

5. Write notes on five of the following seven items:
supersedure; hamuli; composition of an average honey; food sharing; cleaning hive tools; nectar guides; sacbrood. (4 x 5 marks)

6. Answer any two of the following;
- a) Outline the differences in the symptoms of AFB and EFB. (10 marks)
 - b) Outline the advantages/disadvantages of multiple mating of honeybee queens. (10 marks)
 - c) Give an account of parthenogenesis. (10 marks)