

# THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

## EXAMINATION FOR PROFICIENCY IN APICULTURE MODULE 3 HONEYBEE DISEASES, PESTS AND POISONING

10<sup>th</sup> November 2012 Time Allowed 1½ hours

Exam Number:

### Instructions to Candidates

Read the questions carefully. Answer All Sections. It is recommended not to spend more than 10 minutes on Section A, 50 minutes on Section B or 30 minutes on Section C.

Unless stated otherwise questions apply to Honeybees.

Use **BLACK** pen for text. **Black** pencil may only be used for diagrams. **DO NOT USE COLOURS.**

Please start each question on a new side of paper.

### Examiner Use Only

Question	Sec A	B11	B12	B13	B14	B15	C16	C17	Total
Mark									
Moderated									

### SECTION A (10 marks, 1 for each question)

Answer **ALL** the questions in this section. Use one or two word or short phrase answers.

- Q1 Give the current scientific name for the causative agent of European Foul Brood. ....
- Q2 Name a secondary invader in larvae infected with EFB. ....
- Q3 Give the scientific name of the Small Hive Beetle. ....
- Q4 Deformed wing virus is particularly associated with which disease of honeybees? ....
- Q5 Give the scientific name for the Greater Wax Moth. ....
- Q6 State the location of *Malpighamoeba mellificae* in the honeybee. ....
- Q7 Which bee disease gives rise to the so-called 'Chinese slipper' description of dead brood? ....
- Q8 If poisoning by a pesticide is suspected, how many **samples** of bees should be taken? ....
- Q9 What disease will give rise to adherent scales within brood cells? ....
- Q10 Name a bee virus dependent on co-infection with *Nosema apis*. ....

**PLEASE HAND IN THIS SHEET AT THE END OF THE EXAMINATION**

# MODULE 3 HONEYBEE DISEASES, PESTS AND POISONING

10<sup>th</sup> November 2012

## SECTION B (60 marks, 15 for each question)

Answer any **FOUR** questions from this section. Write **short** notes for your answers.

Marks

- Q11 Queen bees may be imported into the UK from certain non-European Union countries.
- (a) Name two of these countries. 2
  - (b) What documentation is required by the importer? How, when and to whom should this documentation be presented? 9
  - (c) What documentation is required for bees to be transferred legally across the boundaries of E.U. member states? 4
- Q12
- (a) Describe the appearance and give possible causes of chilled brood. 5
  - (b) Why, and to which brood disease could a short period of chilling lead? 2
  - (c) List the steps to be taken to fumigate brood and super boxes containing comb using ethanoic (acetic) acid. 8
- Q13
- (a) Describe briefly a method of testing for pyrethroid resistance in varroa mites. 8
  - (b) Give a simple description of the life cycle of the varroa mite *Varroa destructor* in the European honey bee *Apis mellifera*. 7
- Q14
- (a) List potential disease problems of overstocking an area with bees. 3
  - (b) Describe the appearance of bees infected with chronic bee paralysis virus. (CBPV) 9
  - (c) List **three** other viruses known to affect honeybees and their associated diseases. 3
- Q15
- (a) Describe how the causative agent of European Foul Brood (EFB) affects an individual honeybee larva. 3
  - (b) Explain why the visual evidence of EFB infection is likely to vary throughout the hive inspection season. 5
  - (c) Describe how lateral flow devices are used as diagnostic tools in the field for both EFB and AFB and state the limitations of these devices. 7

## SECTION C (30 marks)

Answer **ONE** question from this section. Give *labelled* diagrams where applicable.

- Q16 Providing managed colonies with clean combs is an accepted part of modern beekeeping.
- (a) Describe how to perform a 'shook swarm' and state which circumstances or diseases would make this operation necessary or desirable. 15
  - (b) As the antibiotic Fumidil-B® has been withdrawn, how should a weak colony with only 3 frames of brood, and tested as severely infected with nosematosis, be managed to ensure its survival? 15
- Q17
- (a) Give a simple account of the structure and function of the alimentary system of the adult honeybee using diagrams where appropriate. 10
  - (b) Name one adult honeybee disease that affects the alimentary system and describe its life cycle and how this disease affects the individual honeybee and the colony in general. 20