

THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

EXAMINATION FOR PROFICIENCY IN APICULTURE

MODULE 6 HONEY BEE BEHAVIOUR

23rd March 2019

Time Allowed 1½ hours

Candidate 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 and 30 minutes on Section C.

Unless stated otherwise questions apply to honey bees.

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

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. Please write your answers on the question paper.

- Q1 Other than nectar, pollen and water what do honey bees collect?
- Q2 Give one factor that causes the queen to reduce or stop laying eggs.
- Q3 How do colonies recognise intruders?
- Q4 Give one use for water in a colony.
- Q5 Name the process for conversion of nectar to honey.
- Q6 Name one factor used by scout bees when selecting a new home.
- Q7 At what temperature is the broodless cluster maintained in the winter.
- Q8 Give one way a colony will maintain the core temperature of the cluster before egg laying commences.
- Q9 Give the water content of blossom honey.
- Q10 At what age does a honey bee normally produce wax?

PLEASE HAND IN THIS SHEET AT THE END OF THE EXAMINATION

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SECTION B (60 marks, 15 for each question)

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

Marks

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| Q11 | (a) | Name 5 typical sources of propolis. | 5 |
| | (b) | How is propolis collected by honey bees? | 2 |
| | (c) | How is propolis unloaded by honey bees? | 3 |
| | (d) | In what ways is propolis used in the honey bee colony? | 4 |
| | (e) | How much propolis is required normally by a colony per annum? | 1 |
| Q12 | | Describe how the following diseases affect honey bee behaviour: | |
| | (a) | European foulbrood; | 3 |
| | (b) | Nosemosis. | 12 |
| Q13 | | List the behavioural events, which occur in a queen's adult life, between her emergence from the cell and the laying of a good worker brood pattern. | 15 |
| Q14 | (a) | What is meant by the term 'worker policing'? | 4 |
| | (b) | Under what circumstances would the eggs of a laying worker be allowed to develop? | 7 |
| | (c) | How is this form of social control of benefit to a queenright colony? | 4 |
| Q15 | | Describe how comb is constructed. You need not give the chemical composition of beeswax. | 15 |

SECTION C (30 marks)

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

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|-----|-----|--|----|
| Q16 | | Honey bees use dances to communicate with each other. | |
| | (a) | Describe in detail the dance scout bees use to communicate the location of a new home. | 9 |
| | (b) | Name six other dances. | 6 |
| | (c) | Describe in detail five of the dances listed in your answer to (b). | 15 |
| Q17 | (a) | Describe the varying conditions that lead to the development of laying workers and the reasons a queen becomes a drone layer. | 12 |
| | (b) | List the behavioural consequences of each of these situations. | 12 |
| | (c) | Describe the difference between swarming and supersedure, the conditions, time of year they may occur and how the beekeeper can tell the difference between the two. | 6 |