

THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

EXAMINATION FOR PROFICIENCY IN APICULTURE

MODULE 6 HONEY BEE BEHAVIOUR

24th March 2018

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 What term is used for the mechanism of controlling the environment within the hive?
- Q2 When are drones absent in a colony?
- Q3 Name one method of communication within the hive.
- Q4 Name one plant from which bees collect propolis.
- Q5 What is the average weight of pollen load carried by a honey bee?
- Q6 What occurs at a drone congregation area?
- Q7 What is the term given to the removal of eggs laid by worker bees?
- Q8 At what stage in the life of a worker bee does it normally take on the task of foraging?
- Q9 Name one factor which stimulates a queen to increase her laying rate.
- Q10 Give one use of water within the hive.

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) | Other than bees from a different colony, name four other intruders found in the UK which may attempt to enter a beehive. | 4 |
| | (b) | How will these be dealt with if they enter the hive? | 2 |
| | (c) | Describe the difference between drifting and robbing bees. | 4 |
| | (d) | How will the colony react to robbing bees? | 5 |
| Q12 | (a) | List the reasons why a queen may be superseded. | 4 |
| | (b) | How can supersedure queen cells be recognised? | 3 |
| | (c) | Use a table to illustrate the similarities and differences in laying workers and drone laying queens. | 7 |
| | (d) | Name one pathogen that could cause a colony to become queenless. | 1 |
| Q13 | (a) | How does a bee learn to recognise the position of its hive? | 8 |
| | (b) | What is the term given to this type of learning? | 1 |
| | (c) | How may beekeepers use this recognition in their beekeeping? | 6 |
| Q14 | (a) | What are the factors that will initiate the building of new comb? | 5 |
| | (b) | What are the factors that allow for efficient use of comb? | 5 |
| | (c) | What is propolis used for within the colony? | 5 |
| Q15 | (a) | What are the triggers for a colony to start preparations for swarming? | 5 |
| | (b) | Explain briefly the behaviour of a colony of honey bees from the construction of swarm cells to the emergence of the first virgin queen. | 10 |

SECTION C (30 marks)

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

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|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q16 | (a) | A honey bee has landed on a flower. Describe how nectar is collected and transported back to the hive. Include changes that may happen to the nectar. | 9 |
| | (b) | What happens on her return to the hive with a full load of nectar up to the point the honey cell is sealed? | 18 |
| | (c) | Outline the chemical process of converting nectar to honey. | 3 |
| Q17 | (a) | Using a table, name seven brood and adult bee diseases and their specific effects on bee behaviour. | 21 |
| | (b) | Use a graph to show how the population of honey bees and brood in a healthy colony varies during the year? | 3 |
| | (c) | How might the population change with a severe infection of chalkbrood, from the spring onwards and what would be the impact on the colony and honey harvest? | 6 |