

THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

EXAMINATION FOR PROFICIENCY IN APICULTURE

MODULE 6 HONEY BEE BEHAVIOUR

10th November 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 Describe a distinctive behaviour of a robber bee.
- Q2 Give one behavioural characteristic adopted by a guard honey bee.
- Q3 What do bees do with larvae affected by *Ascophera apis*?
- Q4 Give one use of pollen in the hive.
- Q5 Name one use of the Nasonov pheromone.
- Q6 What is an effect of Chronic Bee Paralysis Virus on the behaviour of honey bees?
- Q7 From where do bees collect propolis?
- Q8 What can happen in a colony if there is an abrupt end to the nectar flow in early August?
- Q9 How does a honey bee stimulate the development of her wax glands?
- Q10. What period of the year is the colony at its lowest population?

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) | Construct a table to compare what would be seen in a colony of honey bees with a drone laying queen and a colony with laying workers. | 7 |
| | (b) | Explain why laying workers may occur. | 4 |
| | (c) | Describe briefly the behavioural trait that is known as 'worker policing' in Honey bees. | 4 |
| Q12 | (a) | List the conditions required for honey bees to initiate comb building. | 3 |
| | (b) | Describe briefly the process of comb building. | 7 |
| | (c) | State the size of both worker and drone cells. | 2 |
| | (d) | Describe the main requirements of comb for its most efficient use. | 3 |
| Q13 | (a) | Describe briefly the behaviour of honey bees when a swarm is preparing to leave the hive. | 8 |
| | (b) | How does a swarm select a new home? | 7 |
| Q14 | | Using diagrams, briefly describe 3 dances that a honey bee can use to inform other workers of a source of nectar. | 15 |
| Q15 | (a) | Briefly describe how nectar is converted to honey. | 8 |
| | (b) | How do honey bees control the collection of water in a colony? | 7 |

SECTION C (30 marks)

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

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|-----|-----|--|----|
| Q16 | (a) | How do worker bees treat the queen between her emergence and her first mating flight? | 3 |
| | (b) | How soon after emergence do a drone and a queen take their first mating flight? | 2 |
| | (c) | Describe the key characteristics of a drone congregation area (DCA). | 5 |
| | (d) | Give reasons why drones and queens choose particular DCAs. | 3 |
| | (e) | Describe the behaviour of a queen and a drone in a DCA. Include in your answer the ideal conditions for mating flights and the role of pheromones. | 17 |
| Q17 | (a) | Using a table, list the work performed by worker honey bees and give the approximate ages at which they normally carry out this work. | 8 |
| | (b) | Describe how the work performed in the colony changes according to the season. | 18 |
| | (c) | Give four examples of when age related division of labour is modified so that bees undertake work normally associated with older or younger workers. | 4 |