

THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

EXAMINATION FOR PROFICIENCY IN APICULTURE

MODULE 6 HONEYBEE BEHAVIOUR

21st March 2015

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 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.**

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 At what age is drone sexually mature?
- Q2 What is the name given to a place where drones meet and mate with queens?
- Q3 What term is used for the mechanism of controlling the environment within the hive?
- Q4 What is sucrose?
- Q5 Name a use of the Nasonov pheromone.
- Q6 What causes eversion in the drone?
- Q7 When normally in the year does the brood exceed the numbers of adult bees?
- Q8 Name one major factor that encourages comb building.
- Q9 When does the process of conversion of nectar to honey commence?
- Q10 What is the optimum temperature to maintain in the brood nest?

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) | Why might a queen be laying only eggs that develop into drones and how can this be recognised? | 6 |
| | (b) | Why might workers lay eggs and how can this be recognised? | 9 |
| Q12 | | A scout bee finds a new source of nectar. Briefly describe the behaviour: (diagrams are not required in this question); | |
| | (a) | of the scout bee after she has collected the nectar from a plant; | 1 |
| | (b) | of the scout bee after entering the hive; | 7 |
| | (c) | of the house bee. | 7 |
| Q13 | (a) | Describe briefly the behavioural trait that is known as 'worker policing' in honeybees. | 4 |
| | (b) | How is this form of social control of benefit to a queen right colony? | 11 |
| Q14 | (a) | List the sequence of the tasks which on average may be performed by a worker bee after she emerges from a cell. (Specific days allotted to the tasks are not required in the answer). | 9 |
| | (b) | What conditions cause variations in these tasks? | 6 |
| Q15 | (a) | What is hive odour and what factors affect it? | 3 |
| | (b) | How do bees recognise and react to potential intruders? | 6 |
| | (c) | How can the response to intruders vary during the season? | 6 |

SECTION C (30 marks)

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

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|-----|-----|---|----|
| Q16 | (a) | Describe the conditions that can lead to swarming. | 10 |
| | (b) | Describe how a swarm prepares and leaves the hive. | 10 |
| | (c) | How do bees in a temporary cluster find and select a new permanent home? | 10 |
| Q17 | (a) | Describe the behaviour of bees involved in pollen collection from the time they collect pollen from the anthers of plants and explain how and why pollen is used and stored in the colony. (The process of pollen packing is not required). | 18 |
| | (b) | Describe the effects of Nosema on honeybee behaviour. | 12 |