

# THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

## EXAMINATION FOR PROFICIENCY IN APICULTURE MODULE 6 HONEYBEE BEHAVIOUR

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

Exam Number:
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*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 a reason why drone laying queens may arise. ....
- Q2 Give one of the main cause of winter mortality for a honeybee colony? .....
- Q3 How long can healthy sperm survive in the queen's spermatheca? .....
- Q4 Name one beekeeping activity likely to instigate robbing. ....
- Q5 What do bees do with larvae affected by *Ascophora apis*? .....
- Q6 Circle the correct answer: What do bees derive from
- |             |        |        |
|-------------|--------|--------|
| a) Poppies? | Nectar | Pollen |
| b) Borage?  | Nectar | Pollen |
- Q7 What is left in the queen honeybee after copulation? .....
- Q8 Approximately what distance from the hive is being indicated by the round dance? .....
- Q9 What period of the year is the colony at its lowest ebb? .....
- Q10 Name one situation which encourages bees to construct comb .....

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

# MODULE 6 HONEYBEE BEHAVIOUR

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 Describe the conditions and time of year that are most likely to lead to (a) swarming and (b) supersedure and how a beekeeper can tell the difference between them. 15
- Q12 List the events which occur in a queen honeybee's life between her emergence and the laying of a good worker brood pattern. 15
- Q13 (a) Briefly describe the varying conditions that lead to the development of laying workers. 8  
(b) List the behavioural consequences of this situation. 7
- Q14 How do bees control the temperature within the colony when the ambient temperature:  
(a) drops from 20°C[68°F] to below 5°C[41°F] 8  
(b) rises above 36°C[97°F] 7
- Q15 (a) On the grid provided, draw the seasonal variation in the size of a normal colony. Add to the graph information about possible events affecting the colony and the times these occur. 4  
(b) Describe briefly what is shown on the graphs. 11

## SECTION C (30 marks)

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

- Q16 (a) Give a description of the bee behaviour involved in nectar and pollen collection. The process of pollen packing is not required. 20  
(b) Discuss what the bees may do with the collected pollen. 10
- Q17 (a) Describe the behaviour of honeybee intruders and guard bees when workers:  
(i) drift into a wrong hive by accident; 15  
(ii) are intent on stealing food stores.  
(b) Compare the behaviour of bees when other pests and predators, such as wax moth, mice and varroa enter the hive. 15

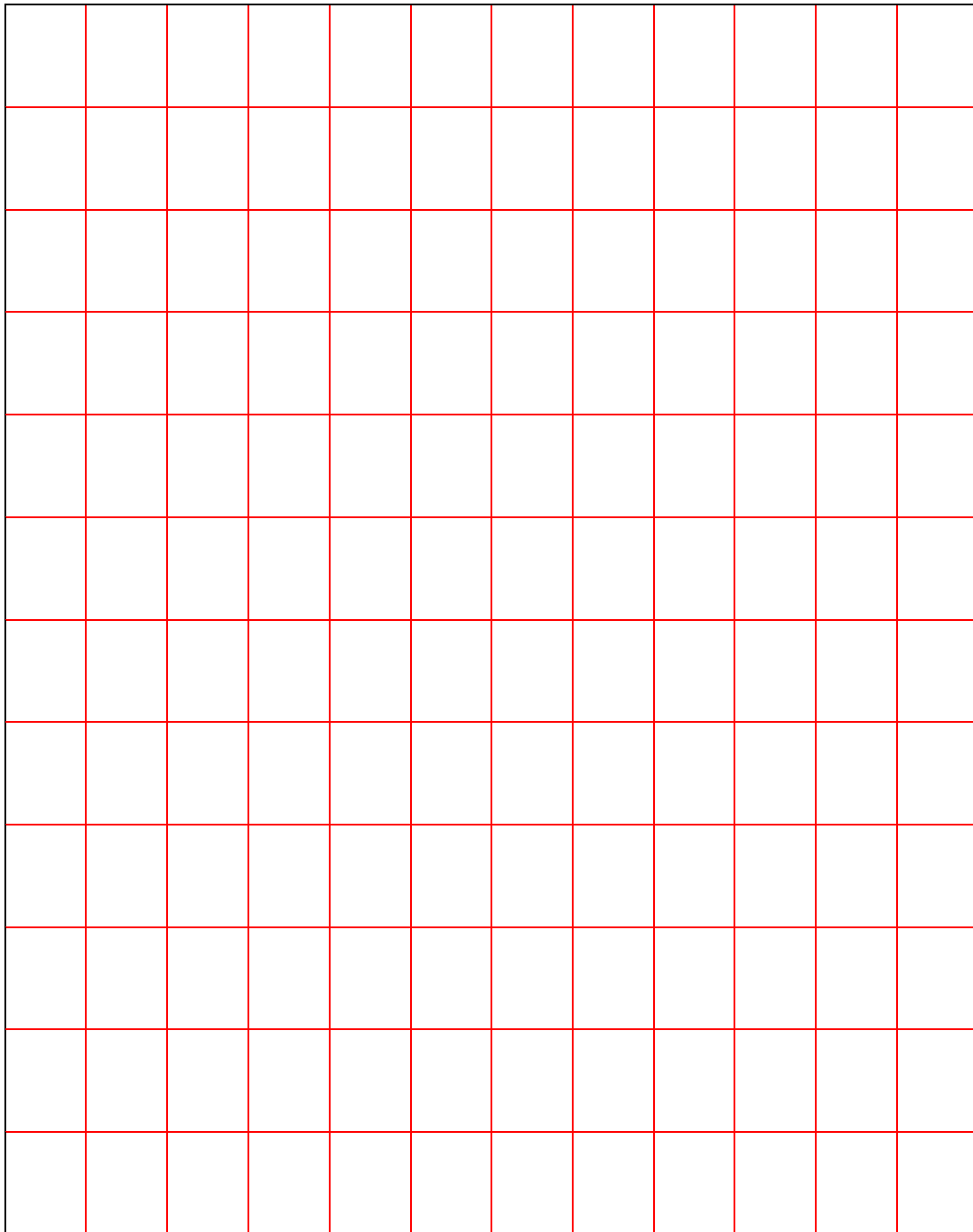
# MODULE 6 HONEYBEE BEHAVIOUR

10<sup>th</sup> November 2012

- Q15 (a) On the grid below, draw the seasonal variation in the size of a normal colony.  
Add to the graph information about possible events affecting the colony and the times these occur.

Population

Months



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