

# THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

## EXAMINATION FOR PROFICIENCY IN APICULTURE

### MODULE 2 HONEY BEE PRODUCTS AND FORAGE

10<sup>th</sup> 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 What is the allowable limit of diastase activity in blossom honey in the UK? .....
- Q2 Name one source of honey unpalatable to humans. ....
- Q3 What is the maximum percentage of water allowed in Ling heather honey? .....
- Q4 What is royal jelly used for commercially? .....
- Q5 Name one source of honey that may be used as a 'seed' to produce a fine set honey. ....
- Q6 What is the average pH of blossom honey? .....
- Q7 Name one source of pollen in Jan/Feb. ....
- Q8 What is the maximum legally permitted level of sucrose in English blossom honey for retail sale in the UK? .....
- Q9 What is meant by the term hygroscopic? .....
- Q10 What is honeydew? .....

**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

- |     |     |  |    |
|-----|-----|--|----|
| Q11 | (a) | What are extra floral nectaries?   | 1  |
|     | (b) | Name three plants with extra floral nectaries and briefly state where these nectaries are found on each plant.   | 3  |
|     | (c) | List six factors affecting nectar secretion in plants.   | 6  |
|     | (d) | What are nectar guides, why are they often visible to bees and not humans and how are they useful to a foraging bee and the plant?   | 5  |
| Q12 | (a) | List 6 constituents of nectar.   | 6  |
|     | (b) | What is a refractometer, describe briefly how it is used in beekeeping?  | 3  |
|     | (c) | Explain briefly why honey granulates; why some granulates faster than others and give the optimum temperature for granulation to occur.  | 4  |
|     | (d) | Name two flowers from which honey granulates quickly and two where honey granulates more slowly.   | 2  |
| Q13 |     | List the factors involved in the processes of:   |    |
|     | (a) | pollination;   | 8  |
|     | (b) | fertilisation in flowering plants.   | 7  |
| Q14 | (a) | List eight constituents, expressed in percentage terms, of a typical sample of UK summer blossom honey.  | 8  |
|     | (b) | Identify two enzymes and state their actions in blossom honey.   | 4  |
|     | (c) | Name three sources of nectar available to bees from plants in Sept /Oct.   | 3  |
| Q15 | (a) | State two ways in which the floral source of honey may be identified.  | 2  |
|     | (b) | Briefly outline how bees transport and process nectar to convert it into honey (give the chemical equation), explain how it is stored by the bees and name the other enzyme involved in the process. | 13 |

## SECTION C (30 marks)

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

- |     |     |   |    |
|-----|-----|---|----|
| Q16 | (a) | (i) Give the definition of "comb honey" from to the 2015 Honey Regulations.                             | 2  |
|     |     | (ii) Why is heather honey more difficult to extract than blossom honey?                                 | 1  |
|     |     | (iii) List different ways of extracting heather honey.  | 4  |
|     | (b) | How is heather cut comb honey prepared, processed and stored?   | 13 |
|     | (c) | List the legal requirements in the UK for labelling a jar of 454g of honey for sale.                    | 10 |
| Q17 | (a) | List the physical properties of beeswax.  | 7  |
|     | (b) | Describe how to treat the cappings after extracting honey to recover as much honey and wax as possible. | 8  |
|     | (c) | Starting with small blocks, how can beeswax be prepared for the show bench?                             | 8  |
|     | (d) | How is propolis collected and used by bees?   | 7  |