

THE BRITISH BEEKEEPERS' ASSOCIATION

Founded in 1874

Registered Charity No. 212025

EXAMINATION FOR PROFICIENCY IN APICULTURE

MODULE 2 HONEY BEE PRODUCTS AND FORAGE

23rd March 2019 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 melomel?
- Q2 What is the permissible level of hydroxymethylfurfural in blossom honey?
- Q3 Define hygroscopic?
- Q4 What is glucose oxidase?
- Q5 What is the melting point of beeswax?
- Q6 What is the Schade scale used to measure?
- Q7 Name a flower that changes colour when it has been pollinated
- Q8 What is the function of sucrose (invertase) added to nectar by bees?
- Q9 Why is cut comb often stored in the refrigerator or freezer?
- Q10 What is entomophilous?

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 is honeydew and how is it produced? | 4 |
| | (b) | How does honeydew honey differ from blossom honey: | |
| | (i) | in appearance visually and microscopically; | 2 |
| | (ii) | in other chemical properties? | 5 |
| | (c) | Name four plants which commonly produce honeydew. | 4 |
| Q12 | (a) | Why might it be necessary to heat honey to 60°C? | 2 |
| | (b) | How can honey be pasteurized and why may it be done? | 2 |
| | (c) | What may happen if the water content is high and how would that be recognised in the honey? | 4 |
| | (d) | What is the maximum moisture content permitted for blossom honey, state any exceptions. | 2 |
| | (e) | What happens if honey is heated to excess? | 5 |
| Q13 | (a) | In the Honey Regulations the sucrose content allowed of most honeys is up to 5g/100g. Honey from some plants may have a higher sucrose content. Name four such plants and state what level of sucrose is permissible. | 8 |
| | (b) | Electrical conductivity of most honey must be no more than 0.8mS/cm. Name four honeys where a higher value is permitted. | 4 |
| | (c) | What is the specified amount of fructose/glucose in: | |
| | (i) | blossom honey and | 1 |
| | (ii) | honeydew honey? | 1 |
| | (d) | What is thixotropy? | 1 |
| Q14 | (a) | What factors should be considered when preparing cut comb for sale? | 9 |
| | (b) | List the points a judge would consider when judging a cut comb class at a honey show. | 6 |
| Q15 | (a) | Briefly describe nectaries and where are they found on a plant giving examples. | 7 |
| | (b) | What is the function of nectaries and their role in pollination? | 2 |
| | (c) | Describe nectar guides, their role, and give two examples of flowers with guides. | 4 |
| | (d) | What is flower constancy or fidelity and what is its importance to the plant? | 2 |

SECTION C (30 marks)

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

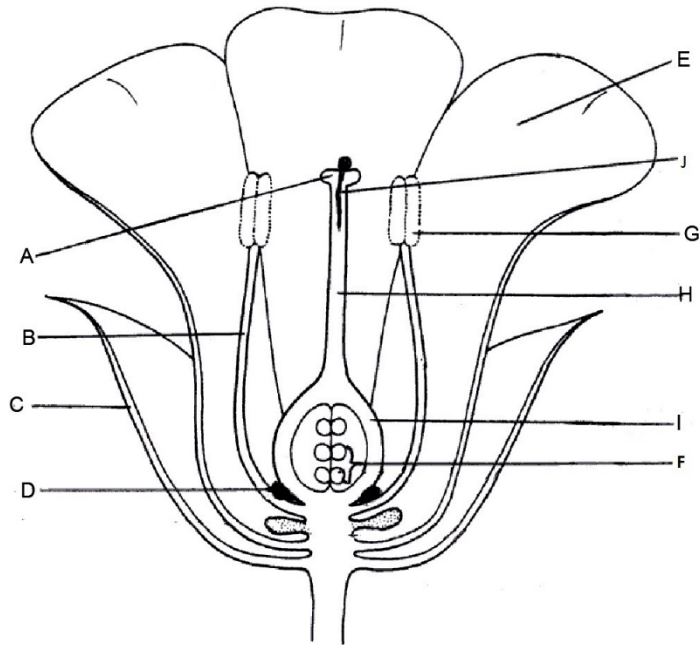
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|-----|-----|---|----|
| Q16 | (a) | On the diagram provided label A – J | 5 |
| | (b) | With reference to A and J, describe the process of fertilisation. | 12 |
| | (c) | What are compatible and incompatible pollens? | 3 |
| | (d) | Describe ways in which plants have modified to achieve cross pollination through protogyny, protandry, heterostyly, dioecious, monoecious, and give an example of a plant displaying each characteristic. | 10 |
| Q17 | (a) | Distinguish between naturally granulated, soft set and seeded honey. | 5 |
| | (b) | Describe how to prepare a seeded honey from a tub of coarse grained set honey using a fine grained set honey as seed. | 15 |
| | (c) | What are the factors affecting the granulation of honey? | 10 |

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Q16 (a) On the diagram below, label A – J

5



- A _____
- B _____
- C _____
- D _____
- E _____
- F _____
- G _____
- H _____
- I _____
- J _____

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