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14th November 2015 Time Allowed 1½ hours 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 Give one use to which pollen may be put by humans.

Q2 How does horse chestnut use colour to communicate information to bees?

Q3 Give the melting point of beeswax.

Q4 What is meant by the term thixotropic?

Q5 What information can the microscopic examination of pollen in honey offer?

... Q6 Name one instrument used to measure the moisture content of honey.

Q7 Name one way to remove cappings from combs, prior to extraction?

Q8 Name one plant that produces nectar that is unpalatable to humans?

Q9 What can be measured to indicate ash content in honey?

Q10 Name a piece of equipment that can be used to recover wax from old comb.

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Q17 You wish to produce both cut comb and chunk honey for sale to the public.

(a) How would you encourage your bees to produce suitable honey and comb? 7

(b) (b) How would you prepare chunk honey for sale? 7

(c) (c) How would you prepare, pack and label cut comb honey for sale? 9 (d) What is the legal definition of comb honey? 2

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2.15 The main constituents and properties of beeswax

Varies: depends on the bees, weather and time of year

Made of: **myricyl palmitate** – a chemical ester

4 main ingredients:-

Esters 70%

Alcohols 1%

Acids 10%

Hydrocarbons 13%

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Physical Properties of Beeswax

- Solubility
 - insoluble in water
 - slightly soluble in alcohol
 - soluble in ether, chloroform, benzene
- Colour
 - colourless as flakes white as solidifies
- Temperature
 - melts 62 ° =64 °
 - pliable 32 ° - 35 °
 - flashpoint 242 ° - 250 °
- Relative Density - 0.96
- Acidity -20
- Reactivity
 - reacts with alkalis and hard water, saponification

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2.16 Methods of recovering saleable beeswax from comb and cappings

- Solar wax extractor
- Pratley tray




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Steam extractor

**WAX CAPPINGS**

- Drain
- Feed back in a feeder on crownboard 2-3 days
- Rinse in rain water/ saponification
- Solar wax extractor/ slungum
- Melt in saucepan with half water ! 63° / 73 °
- Filter stockinette/lint / coffee filters
- Slow cooker with tights /rain water
- Bain marie

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