

**Examination Board for the National Diploma in Beekeeping & the United Kingdom
Certificate in Beekeeping.**

March 1996.

Paper A.

Time allowed - 3 Hours.

Instructions to Candidates:-

Read the questions carefully.

Answer FOUR questions only.

Marks will be deducted for irrelevancy, and for faulty English.

Marks will be awarded for clear diagrams where relevant.

1. Describe the regulations applicable in the United Kingdom to the extraction and subsequent processing and storage of honey destined to be sold through retail outlets. Explain the significance of H.M.F. and diastase levels within the regulations and how these levels might be affected by processing techniques.
2. a) Describe in detail the role of pollen in the nutrition, development and well being of the honey bee colony during a twelve month cycle.
b) Give examples of pollen supplements and substitutes in colony management, their composition, the method of feeding and some of the difficulties likely to be experienced in their use.
3. Describe fully the contribution made to bee keeping by Five of the following:-
F.W. Sladen; S. Simmins; Dr. E. Zander; Dr. J. Dzieron; Prof. M. Lindauer; C.R. Ribbands; Moses Quinby.
4. a) Explain how you would prepare 20 stocks to obtain a crop of heather honey from moors 100 miles away. Include the steps leading to the preparation of the colonies, the method of transport and the management of the colonies during their stay on the moors.
b) List some of the colony health factors traditionally associated with heather moor migration.
5. a) Describe the current M.A.F.F. regulations relating to the notification and treatment of bee disease.
b) Explain the effects of various viral infections that occur in the bee colony. Describe the effects of one of these in detail and the factors in its transmission.
6. a) Which properties of propolis account for its present demand and which are the main substances within propolis that contain these properties?
b) Describe the use made by the honey bee of propolis, indicating its source and its value to the colony.
c) How can a crop of propolis be maximised, harvested and prepared for sale?
7. You have been asked to give a lecture on "*The History of bee keeping in Britain*" to a local association. Give the headings you would use to outline your talk and any visual aids you would use. Take one heading and expand it as you would when giving your lecture.

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1. Describe the role played by pheromones in the balance of colony behaviour, with reference to source, distribution and effect.
2. Using illustrations, describe the position, structure and function of the exocrine glands of the worker honey bee.
3. Explain Six of the following scientific terms or names: trophallaxis; ecdysis; heterosis; colporate pollen; sporoblast; meliponinae; *Galleria mellonella*; alleles; sclerite.
4. Prepare a set of notes for a bee keeping audience describing the common British solitary bees, their importance as pollinators and the steps which could be taken to ensure their survival within changing countryside conditions.
5. a) Describe the broad anatomical differences between the Hemiptera, Coleoptera and Lepidoptera.
b) In what way does the life cycle of the Hemiptera differ from that of the other two?
6. The "fat body" of the bee has considerably more significance than its name suggests. Give an account of the position, development and physiology of this tissue during the larval and pupal stages of the worker honey bee.
7. Reports are being received of large numbers of honey bee colonies collapsing, particularly over southern England despite their being correctly treated for *Varroa jacobsoni* during the previous Autumn. Discuss the possible causes of this occurrence and give your views on courses of action that might be helpful in alleviating this situation.