

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

JUNE 1986.

PAPER 'A'.

Time allowed - 3 hours.

Instructions to Candidates:-

ANSWER FOUR QUESTIONS ONLY.

All questions carry equal marks.

Marks will be deducted for irrelevancy and for faulty English.

Marks will be awarded for clear diagrams, where relevant.

1. Write an essay on *"The use and value of pollen supplements and pollen substitutes in the feeding of honey bees in the United Kingdom"*. Your answer should include a description of the methods of producing, storing and feeding, and the possible dangers involved in such feeding.
2. Describe:-
 - a) The impact that the "Africanised bee" has had on beekeeping in South America.
 - b) How the problem arose.
 - c) The possible effects on beekeeping in the USA if the "Africanised bee" became established in North America.
3. Briefly discuss FIVE of the following:-
 - a) The granulation of honey.
 - b) The enzymes found in honey.
 - c) The value of instrumental insemination of queen honey bees.
 - d) Diploid drones.
 - e) The sterilisation of comb contaminated with A.F.B. spores by means of irradiation.
 - f) The current world honey market.
 - g) The importation of queen honey bees into the United Kingdom.
 - h) The identification of pollens in honey.
4.
 - a) Give a full account of the "ten day system" of swarm control. Your account should include the principles on which the system is based.
 - b) Discuss the merits and demerits of the system.
5. In recent years farmers have introduced several "new" crops, e.g. borage, linseed, etc. You have been asked to provide colonies of honey bees for the pollination of such a crop. In respect of a particular crop, which you should name, describe:-
 - a) What information you would require before proceeding.
 - b) The basic details of your contract with the farmer.
 - c) How the colonies would be prepared and how they would be managed on the site.
6. Describe the contribution that FOUR of the following have made to beekeeping:-
Cheshire; Zander; Rennie; Lindauer; Dierzon; Doolittle.
7.
 - a) Name the legislation currently applicable in the United Kingdom to the control of honey bee pests and diseases.
 - b) List the main features of the legislation.
 - c) Describe briefly how the legislation is implemented.

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ANSWER FOUR QUESTIONS ONLY.

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1. a) Name and give a description of all the species in the genus *Apis*, other than *Apis mellifera*.
b) Give a brief account of their colony organisation and geographical distribution.
2. a) Describe, with the aid of diagrams, the mouthparts of the worker honey bee.
b) Explain how the mouthparts function in the ingestion of both liquid and solid food.
3. "*The distinguishing feature of a true society is division of labour*" Wigglesworth - "The life of insects". Discuss this statement in relation to the honey bee colony.
4. Write briefly on FIVE of the following: Arthropoda; axon; campaniform organ; crystalline cone; glycogen; colporate pollen; oil immersion lens; Parasitica.
5. Describe:-
a) In detail, the production of sugars in the plant.
b) The changes and processes involved until the sugars are stored as honey in the hive.
6. Describe, with illustrations, the exocrine glands of the worker honey bee, and their structure and function.
7. a) Give a brief account of the Order Hymenoptera.
b) Describe briefly the life history of a common British member of the Symphyta.