



# MODULE 7 SELECTION AND BREEDING OF HONEY BEES SYLLABUS

Applicable from January 2020

## **Aims**

The Modules are designed to give beekeepers the opportunity to study the craft of apiculture further with the goals of obtaining an Intermediate Theory Certificate and an Advanced Theory Certificate.

## **Conditions of Entry**

The Candidate is recommended to have kept and managed bees for at least 2 seasons.

Modules can be taken in any order with the exception of Module 8, which shall be the last module to be taken.

The secretary to the Board shall have received a completed Application Form and fee by the 10th February for March Series and by 30<sup>th</sup> September for the November series of the Module Examinations.

A maximum of FOUR modules can be taken at any one session

## **Award of Certificates**

A BBKA Certificate will be awarded for each module passed and the pass mark will be 60% for all modules. (Credit 70%, Distinction 80%)

## **In addition:**

- The BBKA Intermediate Theory Certificate will be awarded when modules 1, 2, 3 and one other from 5, 6 or 7 have been passed.
- The BBKA Advanced Theory Certificate will be awarded when all modules been passed.
- The BBKA Master Beekeeper Certificate will be awarded to a beekeeper who has obtained a BBKA Advanced Theory Certificate and the BBKA Advanced Certificate in Beekeeping Husbandry.
- In order to qualify for either a BBKA Intermediate or BBKA Advanced Theory Certificate the necessary modules must be passed in a time period not exceeding 12 years.

## **The Examination**

Each module examined consists of a written paper. There will be three sections to the paper; Section A requires one or two word answers, Section B (4 questions from a choice of 5) requires short answers in note form, Section C (1 question from a choice of 2) requires more detailed answers. Candidates will be expected to use scientific nomenclature where applicable.

The Examiners may include in any Module examination any topic from the Basic Assessment syllabus.

Candidates' papers will be retained by the Examinations Board. The candidate is able to request a résumé of their paper on payment of the appropriate fee.





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The Candidate shall be able to:-

- 7.1 give the principles of the selection of breeder queens and drones;
- 7.2 describe a system of record keeping used in the assessment of queens and their progeny;
- 7.3 give a detailed account of methods of queen rearing suitable for a beekeeper with five to ten colonies and methods more suitable for larger scale queen rearing operations;
- 7.4 give an outline account of a method of instrumental insemination and assess the role this technique could play in honey bee breeding;
- 7.5 give a detailed account of methods of queen introduction, the principles underlying the processes involved, the precautions to be taken, and the attendant difficulties in relation to different strains of bee and colony condition;
- 7.6 describe the setting up of mating nuclei and any precautions that need to be taken;
- 7.7 give an account of the subspecies and strains of honey bee commonly used by beekeepers in Europe with particular reference to their appearance and behavioural characteristics;
- 7.8 give an account of the important aspects of the behaviour of honey bees, in relation to breeding programmes;
- 7.9 show an understanding of Mendelian genetics, particularly the inheritance of one gene with two alleles, and the concept of multiple alleles;
- 7.10 give an outline account of inheritance in the honey bee;
- 7.11 describe the genetic basis of sex determination in the honey bee including parthenogenesis;
- 7.12 give an account of mitosis and meiosis showing an understanding of the unusual nature of meiosis in the drone honey bee;
- 7.13 describe in detail the reproductive system of the queen and drone with an outline account of sperm and egg production;
- 7.14 give a detailed account of the mating behaviour of honey bee queens and drones including the roles of pheromones and the concept of drone congregation areas;
- 7.15 describe the causes of drone laying queens and laying workers and ways to recognise the presence of these in a colony;
- 7.16 describe ways of dealing with colonies with laying workers and drone laying queens;
- 7.17 describe the signs of queenlessness and how this may be confirmed;
- 7.18 give a detailed account of methods of marking and clipping queens and the advantages and disadvantages of these practices;
- 7.19 distinguish between queen cells produced under the emergency, supersedure and swarm impulses;
- 7.20 give an account of the problems inherent in cross breeding subspecies of honey bee;
- 7.21 give an account of the advantages and disadvantages of inbreeding and out breeding and how it can be assessed;
- 7.22 give an account of the effect of pathogens and pests on bee breeding.





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## **Arrangements**

The Assessment venue and the Invigilation are arranged by the Local Examination Secretary. Approval for these arrangements shall be obtained from the Secretary to the Board at least five weeks before the date of the Assessment.

## **Application to Enter**

These should be made through the Local Examination Secretary of the County Beekeeping Association or directly to the Secretary of the Board at the address given below. Applications are required at least six weeks before the date on which the Assessment is to be taken. Available dates for the Assessments can be found on the BBKA Website or may be obtained from the Board Secretary.

## **Application Form**

Every application must be accompanied by a completed Application Form together with the Assessment Fee. Cheques should be made payable to BBKA.

## **Assessment Fees**

The current fee for any Assessment may be obtained from the Secretary to the Board or the Local Examination Secretary.

## **AUTHORITY**

The above is issued by the BBKA Examinations Board and all communications in respect of the Assessments should be addressed to:

The Secretary  
BBKA Examinations Board  
National Beekeeping Centre  
Stoneleigh Park  
KENILWORTH  
Warwickshire  
CV8 2LG

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