

# **Scottish Beekeepers' Association**

Education and Examination Committee



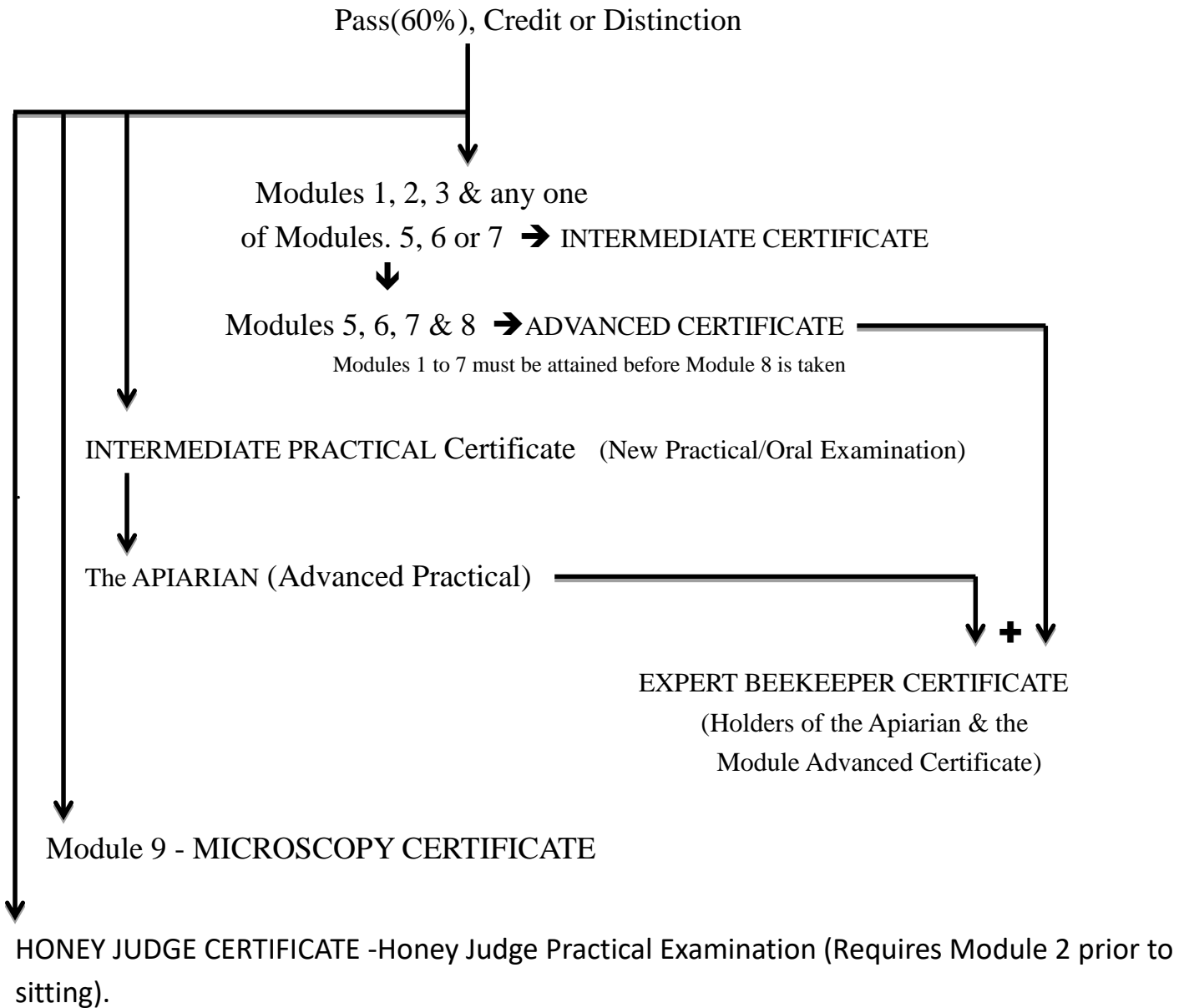
**Syllabus of Examination for Proficiency in Apiculture**

## **BASIC BEEKEEPING CERTIFICATE**

Updated June 2019

# Structure of SBA Examination System

**Entry Point** – Basic Beekeeping Assessment (Practical/Oral “over the hive” assessment). The Certificate is awarded at 3 levels Pass=60%, Credit=70% & Distinction=80%.



# **THE SCOTTISH BEEKEEPERS' ASSOCIATION**

## **THE BASIC BEEKEEPING CERTIFICATE**

### **AIMS**

- 1. To improve the standard of beekeeping in Scotland.**
- 2. To provide beekeepers with a goal towards which they can work that will give a measure of their achievement in the basic skills and knowledge of their craft.**
- 3. To provide a foundation for the more demanding Intermediate Practical Certificate, Apiarian, Expert Beekeeper and Honey Judge examinations.**
- 4. To prepare candidates for entering the module examination system.**

### **The Examinations**

- 1. An examiner approved by the Education Committee is required to conduct the examination at any suitable apiary. Normally only the examiner and the candidate shall be present at the examination. Should the Education Committee wish a trainee Examiner or a member of the committee to be present as an observer prior approval of the candidate or candidates will be obtained.**
- 2. The examination shall comprise of two parts , a Practical over an open hive (Manipulation) and Oral questions covering the practice of beekeeping, types of equipment, natural history of the honeybee and bee diseases. The candidate must achieve 60% for a pass, If 70% is achieved a Credit pass will be awarded and a Distinction pass for 80% or over. .**
  - a) The practical examination will assess the candidate's ability to handle bees and beekeeping equipment and to interpret what is observed.**
  - b) An oral examination of the candidate's understanding of basic beekeeping theory.**

**The length of the examination shall not exceed one & a quarter hours.**

**As a prerequisite for entry to some other SBA examinations and attendance at some training workshops, candidates are required to have achieved the Basic Beekeeping Certificate.**

# **BASIC BEEKEEPING CERTIFICATE**

## **SYLLABUS      Revised 2017**

### **1.0 MANIPULATION OF A HONEYBEE COLONY.**

*The candidate will be aware of:*

- 1.1 the care needed when handling a colony of honeybees;**
- 1.2 the reactions of honeybees to smoke;**
- 1.3 the personal equipment needed to open a colony of honeybees and the importance of its cleanliness;**
- 1.4 the reasons for opening a colony;**
- 1.5 the need for stores;**
- 1.6 the importance of record keeping;**

*the candidate will be able to:*

- 1.7 open a colony of honeybees and keep the colony under control;**
- 1.8 demonstrate lighting and the use of the smoker;**
- 1.9 demonstrate the use of the hive tool;**
- 1.10 remove combs from the hive and identify worker, drone and queen cells or cups if present;**
- 1.11 identify the female casts and the drone;**
- 1.12 identify brood at all stages;**
- 1.13 demonstrate the difference between drone, worker and honey cappings;**
- 1.14 identify stored honey, nectar and pollen;**
- 1.15 take a sample of worker bees in a match box or similar container;**
- 1.16 state the number of worker bees required for an adult disease diagnosis sample;**
- 1.17 demonstrate how to shake bees from a comb and how to look for signs of brood disease;**

### **2.0 EQUIPMENT**

*the candidate will be*

- 2.1 able to name and explain the function of the principal parts of a modern beehive;**
- 2.2 aware of the concept of bee space and its significance in the modern beehive;**
- 2.3 able to assemble a frame and fit it with foundation;**
- 2.4 aware of the reasons for the use of wax foundation;**
- 2.5 aware of the spacing of the combs in the brood chamber and super for both foundation and drawn comb and methods used to achieve this spacing;**

### **3.0 PRACTICE OF BEEKEEPING**

*The candidate will be:*

- 3.1 able to give an elementary description of how to set up an apiary;**
- 3.2 able to describe the precautions which should be taken to avoid the honeybees being a nuisance to neighbours and livestock;**
- 3.3 able to describe the possible effects of honeybee stings and to recommend suitable first aid treatment;**
- 3.4 able to give an elementary description of the annual cycle of work in the apiary;**
- 3.5 able to describe the preparation of sugar syrup and how and when to feed honeybees;**
- 3.6 aware of the need to add supers, and the timing of the operation;**
- 3.7 able to give an elementary account of one method of swarm control;**
- 3.8 able to give an account of an elementary method of producing a new queen**
- 3.9 able to describe the signs of a queenless colony and how to test if a colony is queenless;**
- 3.10 able to describe the signs of laying workers and of a drone laying queen;**
- 3.11 able to describe a simple method of queen introduction;**
- 3.12 aware of the dangers of robbing and how it can be avoided;**
- 3.13 able to describe one method of uniting colonies;**
- 3.14 aware of the reasons for uniting bees and the precautions to be taken;**
- 3.15 able to describe methods of securing stocks prior to moving;**
- 3.16 able to state the risks in transporting live honeybee colonies;**
- 3.17 able to describe a method of clearing honeybees from supers;**
- 3.18 able to describe the process of extracting honey from combs and a method of straining and bottling honey suitable for a small scale beekeeper;**
- 3.19 aware of the need for good hygiene in the handling of honey for human consumption;**
- 3.20 aware of the legal requirements for the labelling and sale of honey;**
- 3.21 able to give an elementary account of the harvesting of beeswax;**
- 3.22 aware of the need for good apiary hygiene;**
- 3.23 aware of the need for regular brood comb replacement;**
- 3.24 able to describe how to take a honeybee swarm and how to hive it;**

#### **4.0 NATURAL HISTORY OF THE HONEYBEE**

*The candidate will be*

- 4.1 able to give an elementary account of the development of queens, workers and drones in the honeybee colony;**
- 4.2 able to state the periods spent by the female casts and the drones in the four stages of their life ( egg, larva, pupa, adult );**
- 4.3 able to give an elementary description of the function of the queen, worker and drone in the life of the colony;**
- 4.4 able to give a simple description of wax production and comb building by the honeybee;**

- 4.5** aware of the importance of pollination to flowering plants, and consequently to farmers and growers;
- 4.6** able to name the main local flora from which honeybees gather pollen and nectar;
- 4.7** able to give a simple definition of nectar and a simple description of how it is collected, brought back to the hive and converted into honey;
- 4.8** able to give a simple description of the collection and use of pollen, water and propolis in the honeybee colony;
- 4.9** able to give an elementary description of swarming in a honeybee colony;
- 4.10** able to give an elementary description of the way in which the honeybee colony passes the winter.

## **5.0 DISEASES, POISONS AND PESTS**

*The candidate will be*

- 5.1** able to describe the appearance of healthy brood;
- 5.2** able to describe the signs of the bacterial diseases American Foul Brood (AFB) and European Foul Brood (EFB) and the fungal disease chalk brood and describe their effects on the colony;
- 5.3** able to detect the presence of Varroa ( a mite) and describe its effects on the colony including an awareness of the effects of associated viruses;
- 5.4** aware of acarine ( a mite ), nosema ( a microsporidian fungus ) and braula ( a wingless fly ) stating their effects on the colony;
- 5.5** able to describe ways of controlling Varroa using integrated pest management techniques;
- 5.6** aware of current legislation regarding notifiable diseases and pests of honeybees;
- 5.7** aware of the national and local facilities which exist to verify honeybee diseases and advise on treatment;
- 5.8** aware where to obtain assistance if any poisoning by toxic chemicals is suspected;
- 5.9** able to describe how comb can be stored to prevent wax moth damage;
- 5.10** able to describe how mice and other pests can be excluded from hives in the winter.

**SBA BASIC BEEKEEPING CERTIFICATE – EXAMINER’S MARK SHEET/GUIDELINE & REPORT - IssueMar2017**

Name of Candidate .....Date & Place of Exam.....

**MANIPULATION**

Syllabus Learning Outcome	Guide for Examiner	Avail Mark	Marks Awarded	Notes
1.3	Personal Equipment – Protection for face, hands, ankles,	1		
1.1,,2,8	Smoker or Water Spray – <i>Lighting/remaining lit, Use of, too much/too little. Control of bees</i>	3		
1.4 to1.6	Reasons for opening a colony- <i>Check for food, eggs(Q), disease, space, swarm signs, Importance of record keeping - Q identity, performance, temper,</i>	4		
1.9	Use of Hive Tool – <i>Always in hand, correct levering, avoid unnecessary movement over tops</i>	3		
1.7	Manipulative skills: <i>Removal &amp; placement of roof, super, Q excluder</i> <i>Removal of 1<sup>st</sup> frame avoiding rolling bees, removal of subsequent frames</i> <i>Handling combs, replacement without gaps.,</i> <i>Care of bees–avoid alarming, avoid trapping (squashed bees spread diseases).</i>	4 3 4 3		
1.10 to 1.14	Identify: <i>Worker &amp; Drone comb, Q cells &amp; cups, eggs, larvae &amp; sealed brood (worker &amp; drone)</i> <i>Adult Workers, Drones &amp; Queen (if seen), honey (capped &amp; unsealed) &amp; Pollen</i>	2 2		
1.16	State no. of bees required for adult disease diagnosis- <i>(30),demo collection, where to send</i>	3		
1.17	Demo shaking bees off comb to check for brood disease <b>OR</b> correct way to hold frame for examination for AFB & EFB - <i>Horizontal with sun over shoulder to get a good look into cells</i>	3		
<b>Total</b>		<b>35</b>		

**PRACTICE OF BEEKEEPING, EQUIPMENT, NATURAL HISTORY**

2.1 to 2.4	Name the principal parts of a modern beehive - <i>including concept of beespace</i> <i>Assemble a frame - nails in correct position &amp; foundation correctly inserted</i>	3 2		
2.5	Knowledge of frame spacing in brood chamber & super <i>(3.5cm, 1<math>\frac{3}{8}</math> &amp; 4.1cm 1<math>\frac{3}{8}</math>)</i>	2		
3.1 to3.3	Siting an apiary – <i>Dry, frost, water, food, nuisance, effects of stings</i>	3		
3.4	Briefly describe annual cycle – <i>Feeding, Varroa trtmt.,Spring Q check, supering, swarm control</i>	4		
3.5, 3.12	Feeding – <i>Syrup strength, winter stores qty, feeder types, emergency feeding, robbing danger</i>	4		
3.6 to3.8	Swarm control –Describe 1 method – <i>Not sufficient to cut out Q cells, Not sufficient to separate Q &amp; flying workers from brood –must describe a workable method</i> Need to add supers for space <b>OR</b> An elementary method of producing a new Q	6 2		
3.9 to 3.11	Signs of queenlessness – plus <i>Test method</i> , 1 method of introducing a queen <b>OR</b> Difference between signs of laying workers/drone laying queen- <i>drone caps on worker cells, multiple eggs, haphazard laying pattern, eggs half-way down cells.</i>	4		
3.13-.16	Uniting - <i>1 method OR moving bees –Importance of ventilation, securely strapped,sealed</i>	1		
3.17-.24	Harvesting, <i>Clearing method(s), Hygiene (foodstuff), Labelling Honey,Traceable, Wt, BB date.</i>	2		
4.1- 4.4	Life cycle & function of worker <b>OR</b> queen <b>OR</b> drone-, <i>times of 4 stages- egg, larva (unsealed), pupa (sealed), adult - house, nurse, wax/nectar. guard, forage, mature Q, mature drone</i>	3		
4.5-4.10	Ecology – <i>Importance of pollination, collection of nectar, pollen, water &amp; propolis .Local sources</i>	4		
<b>Section Total</b>		<b>40</b>		

**DISEASES**

5.1	Describe appearance of healthy unsealed brood- <i>Colour, position in cell, segmentation</i>	3		
	Describe appearance of healthy sealed brood- <i>Colour, capping form, position in cell, segmentation, concentric lay pattern, correct for caste, few pop holes,</i>	3		
5.2	Describe signs of AFB - <i>sealed, sunken perf. caps, rope test, hard scale &amp; EFB –mainly unsealed, darkening larvae, loss of segmentation, easily removable scale</i>	6		
5.6,5.7	What to do if notifiable disease discovered – <i>Reassemble, reduce entrance, inform Insp./SASA</i>	4		
5.3,5.5	Varroa-Appearance & method of detection– <i>8 legs, pin hd. Size, crab shape-OMF, drone removal, Effects on colony &amp; Treatment –weakens, virus spread, discuss management, 2 treatments, IPM</i>	4		
5.4	Signs of & detection of Nosema- <i>fail to build, sometimes dysentery –microscope spore detection</i> <b>OR</b> Acarine – <i>weakness, bees crawling out in front of hive to die, discoloration of trachea.</i>	2		
5.8	Poisoning – <i>Signs, No. of samples, where to send -carpet of dead bees, 3 samples of 200, SASA</i>	1		
5.9,5.10	Comb storage, Exclusion of pests – <i>Sealed supers, certain, mice guards, woodpecker nets</i>	2		
<b>Section Total</b>		<b>25</b>		

**TOTAL MARK (%)**

Examiner's Signature & Date .....

**Recommended Reading List for the Basic Beekeeping Examination**

<b>Title</b>	<b>Author</b>	<b>Publisher/Location</b>
<b>Recommended texts</b>		
An Introduction to Bees & Beekeeping	Editor P J Browne	SBA
Beekeeping for Beginners	A Richards	NBB
Guide to Bees & Honey	Ted Hooper	Blandford
Beekeeping Study Notes for SBA Basic	J D & B D Yates	BBNO
Beekeeping Certificate		
<b>Other Suitable &amp; general textbooks:</b>		
Practical Beekeeping	Clive de Bruyn	Crowwood
A Practical Manual of Beekeeping	David Cramp	Spring Hill
Beekeeping – A Seasonal Guide	Ron Brown	Batsford
<b>Disease</b>		
Managing Varroa	FERA	Beebase website
Foul Brood Disease of Honey Bees	FERA	Beebase website

Members may borrow books from the Moir library – See the Scottish Beekeeper for contact details & opening times.

**REVISIONS:** Nov 2014 –Requirement to describe an elementary method of producing a new queen added see 3.8. Nov2016 – Revision to name & 3 pass awards added. Mar2017- Revised Mark sheet added. June 2019 Notes on 3 pass grades added