**Basic Assessment Study Guide**

*Beekeeping*

<table>
<tr><th>The Candidate should be…</th><th colspan="2">Responses may include:</th></tr>
<tr><td rowspan="2">4.1 able to give an elementary description of how to set up an apiary</td><td>Site</td><td>Set Up</td></tr>
<tr><td>Consideration for the public<br>Availability of forage and water<br>Environmental factors – wind, sun, damp, frost pocket, flooding, livestock<br>Access and space for the beekeeper</td><td>Hive stand<br>Positioning of a high barrier to encourage the bees to fly upwards<br>Warning notices</td></tr>
<tr><td>4.2 able to describe what precautions should be taken to avoid the honeybees being a nuisance to neighbours and livestock</td><td colspan="2">Take flight paths to main areas of forage and water sources into consideration<br>Erection of a high barrier will encourage the bees to fly up out of their hive above head height<br>Avoid sides adjacent to public foot/bridal paths<br>Keep only good tempered bees (re-queen if necessary)<br>Build good relationships with your neighbours, by gaining their interest, cooperation, support and respect<br>Take the appropriate steps to prevent swarming</td></tr>
<tr><td>4.3 able to describe the possible effects of honeybee stings on humans and able to recommend suitable first aid treatment</td><td colspan="2">Local Reactions (Utricaria):<br>Pain<br>Itching<br>Redness<br>Swelling<br>Heat<br><br>General Reaction (Anaphylaxis):<br>Systemic shock<br>Breathing difficulties<br>Swelling of lips, tongue and/or eyelids<br>Vomiting<br>Dizziness<br>Pain</td></tr>
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| | Treatment – Mild Reaction:<br>Remove sting by scraping of sideways with the hive tool<br>Remain calm<br>Puff smoke on the site of the sting to minimize stinging responses by other bees<br>Take asprin or antihistamine as and when required<br><br>Treatment – Severe Reaction:<br>Move away from the apiary<br>Remove sting<br>Administer Epi-Pen if one is carried and has been authorised by the sufferer<br>Write down the time when the injection was administered<br>Call an ambulance and explain situation<br>Loosen clothing<br>Deep breathing |
| 4.4 able to give an elementary description of the annual cycle of work in the apiary | Winter:<br>Clean, mend, replace and store equipment<br>Check food levels and top up if necessary<br>Administer Varroa treatment (oxalic acid)<br>Check for wind and pest damage<br><br>Spring:<br>Continue to check food levels id spring weather is poor<br>Replace queen excluder<br>Resume regular inspections<br>Conduct swarm prevention and control<br>Add supers<br>Monitor Varroa levels<br><br>Summer:<br>Continue inspections<br>Continue Varroa IPM |

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<tr><td></td><td colspan="2">Replace old frames<br>Make up nucs<br>Replace queens<br><br>Late Summer:<br>Remove honey<br>Varroa treatment<br><br>Autumn:<br>Combine weak colonies<br>Remove queen excluder<br>Supply winter food<br>Prevent robbing<br>Secure hives for winter – put on mouse guards and woodpecker cages</td></tr>
<tr><td rowspan="2">4.5 able to describe the preparation of sugar syrup and how and when to feed bees</td><td>Preparation</td><td>Feeding</td></tr>
<tr><td>Dissolve 2lbs sugar in 1 pint hot water<br>Heavy syrup<br>Allow to cool</td><td>Contact or reservoir feeder in eek<br>Feed in the evening to prevent robbing<br>Provide room to store sugar<br>Undertake in Spring and Autumn or when building wax<br>At least 6 outer frames full of stores are needed to successfully over winter bees<br>Hive should feel as if it is nailed down onto the stand/ground when hefting (take roof off prior to hefting)</td></tr>
<tr><td>4.6 aware of the need to add supers and the timing of the operation</td><td colspan="2">Add super when the previous one is full of bees, not honey<br>Ensure that 7 frames are filled before adding the next super, as the bees may not complete the previous<br>Include some drawn comb if possible<br>Add above existing super for speed of application or below if planning to remove some full ones ahead of the rest</td></tr>
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<tr><td rowspan="2">4.7 able to give an elementary account of one method of swarm control</td><td>Prevention</td><td>Control</td></tr>
<tr><td>Use a strain of bees less likely to swarm<br>Use young queens<br>Provide ample room<br>Ensure good ventilation<br>Inspect for queen cells at least every 7 – 9 days</td><td>Creation of a nucleus or artificial swarm<br>Create more space – add supers, rearrange brood frames<br>Clipping of queen’s wings<br>Bailey comb change<br>Remove queen cells (unless they have already swarmed)</td></tr>
<tr><td>4.8 able to describe how to take a honeybee swarm and how to hive it</td><td colspan="2">Initial Contact:<br>Ascertain whether they are honeybees<br>Confirm address<br>Confirm height and position of cluster<br>Confirm size of cluster<br><br>Liaise with the Owner:<br>Explain what will happen<br>Confirm time to attend and cost<br>Ensure there is a clear area in which to work<br><br>Prepare Equipment:<br>Ladder<br>Secateurs<br>Sheet/Blanket<br>Skep/Cardboard Box<br>String<br>Smoker, fuel and matches<br>Protective clothing<br>Mobile phone<br><br>Collection Method:<br>Detach/knock swarm into box</td></tr>
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<tr><td></td><td colspan="2">Invert box on sheet and prop up with a piece of wood/stone to enable flying bees to return to the colony<br>Return in the evening and remove the swarm<br>Wrap the box in the sheet and tie up with the string (to make it bee tight)<br><br>Disposal:<br>Re-hive on clean frames and new foundation<br>Feed 48hrs later<br>Re-queen if swarm shows adverse tendencies<br>Until the comb has been drawn out and the queen starts to lay, place a queen excluder between the brood box and the floor to deter absconding<br>Administer Varroa treatment (as there is no brood or honey)</td></tr>
<tr><td>4.9 able to describe the signs of a queenless colony and how to test if a colony is queenless</td><td colspan="2">Absence of eggs in the first instance<br>Then later, absence of larvae and ultimately all brood<br>There may be a possible presence of queen cells in combination with an absence of eggs and/or brood<br><br>Laying Workers:<br>There is evidence of more than one egg per cell<br>The egg will be laid in the side of a cell rather than directly in the centre<br>Observation at the hive entrance, shows that bees are not bringing in pollen<br><br>To test for queenlessness:<br>Add a frame with eggs from another hive and see if queen cells are built</td></tr>
<tr><td rowspan="2">4.10 able to describe the signs of laying workers and of a drone laying queen</td><td>Laying Workers</td><td>Drone Laying Queen</td></tr>
<tr><td>Disorganised brood pattern<br>More than one egg per cell<br>Eggs are laid to the side rather than in the centre of the cell, due to the workers having shorter abdomens<br>It is thought that laying workers exist in the majority of colonies, but workers</td><td>This is a rare situation as the queen would usually be superseded<br>More likely to happen in nucs<br><br>Reasons for a Drone Laying Queen:<br>Too old – run out of sperm<br>Not properly mated</td></tr>
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| | ‘police’ the hive and remove eggs considered abnormal | Not mated<br>Deformity or abnormality<br>Low brood nest temperature |
| 4.11 aware of the dangers of robbing and how robbing can be avoided | *Dangers*<br>Debilitates and depletes the colony of bees and stores<br>If robbing remains undetected, can lead to starvation over winter<br>Leads to fighting | *Prevention*<br>Feed during the evenings<br>Feed all colonies in the apiary at the same time<br>Inspect quickly and if the robbing starts, complete the inspection on another day<br>Work carefully, do not spill syrup or fondant, as this will act as an attractant to foreign bees<br>Keep exposed hive parts covered during manipulations<br>Reduce entrance in late summer and during periods of feeding to enable bees to repulse robbers<br>Keep hives in good condition – mend any holes or damage<br><br>If robbing gets out of control:<br>Stop up the entrance completely using grass or leaves and remove later or the next day<br>Place a wet towel over the hive that is being robbed. The resident bees will find their way in, but robbing bees will fly into the towel. Remove the towel in the evening |
| 4.12 able to describe methods of uniting colonies | This technique is achieved by positioning one brood box on top of another and allowing the bees to gradually grow accustomed to one another | |

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<tr><td></td><td colspan="2">Ensure that brace comb and the unwanted queen is removed earlier in the day<br>Return in the evening and remove the roof and supers from the ‘bottom’ hive<br>Place newspaper underneath the queen excluder and make small pilot holes in the newspaper<br>Position the ‘top’ brood box directly over the queen excluder<br>If the remaining queen is in the upper box, place another queen excluder on the top. It is better that the queen is in the bottom box<br>If returning any supers to the stack, ensure that there is a layer of paper separating components from different colonies<br>Replace the roof etc<br>As the bees chew through the paper, their scents will amalgamate without the need for fighting<br>Approximately 7 days later, combine the colony into one brood box (ensure that the queen is present)<br>Remove surplus frames without brood<br>Use any surplus frames with brood in another colony, first having shaken all the bees off both</td></tr>
<tr><td rowspan="2">4.13 able to describe a simple method of queen introduction</td><td>Why</td><td>How</td></tr>
<tr><td>To change behavioural problems<br>To eliminate certain diseases<br>To deal with poor productivity<br>To reduce the likelihood of swarming<br>To re-queen a queenless colony</td><td>The colony should be receptive – remove the existing queen if present and leave queenless for 24hrs<br>The colony should not have been queenless for more than 7-9 days (in case of virgin queens)<br>The new queen should be placed in an introduction cage and inserted into the centre of the brood nest to eat through the fondant plug<br>To minimize stress to the new queen, retain her attendants until the last minute</td></tr>
<tr><td>4.14 aware of the reasons for uniting bees and the</td><td>Why</td><td>Precautions</td></tr>
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| precautions to be taken | To create one strong stock<br>To introduce queenless bees to a 'queenright' colony<br>To reduce colon numbers in Autumn | Remove one queen (oldest, least productive or poorest characteristics) or they will fight with each other<br>Remove brace comb or one brood box will not fit on top of the other<br>Complete manipulations in the evening when the flying bees are in the hive, otherwise the flying bees from the top box will be rendered 'homeless'<br>Separate bees from different colonies with newspaper to avoid fighting between workers<br>Leave alone for 7 days |
| 4.15 able to describe a method used to clear honeybees from supers | The crown board should be fitted with a porter escape and inserted below the supers to be cleared<br><br>Other escape mechanisms include:<br>Cone<br>Rhombus<br>Curtain<br>Canadian<br><br>Other clearing methods include:<br>Mechanical blowing<br>Use of chemicals<br>Use of bee brush | |
| 4.16 able to describe the process of extracting honey from combs and a method of straining and bottling honey suitable for a small scale beekeeper | Using a warming cabinet for the possible use of warming to prevent crystalisation<br>Using an uncapping tray and knife to uncap frames<br>Manual of electrical extractor (centrifugal device used to spin honey from cells in frames)<br><br>Straining through a double strainer sieve/mesh and straining cloth into a tank or into | |

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| | food grade storage buckets<br>Allow honey to settle to enable bubbles to move upwards and debris downwards<br><br>Decant into jars |
| 4.17 aware of the need for good hygiene in the handling of honey for human consumption | Use food grade S/S or plastic containers<br>Ensure hands and equipment have been washed and cleaned and long hair has been put up and/or covered with a cap<br>Ensure that the honey room is clean prior to beginning the process<br>Honey should be free of mould, insect debris and other substances foreign t the composition of the honey<br>Water content must be less than 20% - a refractometer can be used to measure this<br>Honey should not be heated excessively, as this destroys the enzymes<br>New, sterile or sterilised honey jars and lids must be used |
| 4.18 aware of the legal requirements for the labeling and sale of honey | Descriptions and illustrations should not mislead<br>Honey must come entirely from the identified source<br>Include the name and address of the producer, packer, seller<br>It is mandatory to include the country of origin<br>Include a best before date – suggested 2yrs<br>Lot numbers need to be used<br>Honey must be sold in specific quantities – figures must be <4mm in height |
| 4.19 able to give an elementary account of the harvesting of beeswax | Save all old comb, capping and pieces of wax<br>Wax floats to the top of heated honey<br>Old comb/wax should be rendered separately from new, as new comb yields higher quality wax<br>Store wax in a way that protects from wax moth<br>Melt wax in soft water – do not boil<br>Strain through lint (or other suitable material) into a container which has been previously lubricated with liquid soap to act as an aid release<br>Cool slowly<br>Can be exchanged for foundation with some suppliers |
| 4.20 aware of the need for good apiary hygiene | Don't leave bits of comb or honey lying around in the apiary<br>Take a covered container to the apiary to collect pieces of brace comb or scrapings |

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| | from the top bars or queen excluder<br>Keep comb covered to discourage bees from robbing<br>Wrap up the contents and dispose of it or if you have a wax solar extractor, you can collect and recycle the wax |
| 4.21 aware for the need for regular brood comb replacement | Brood comb becomes damaged<br>Contains extensive amounts/ inconveniently placed drone comb<br>Comb may contain the causative organism of bee diseases – EFA, AFB, Nosema etc.<br><br>Refer to: National Bee Unit – Replacing Old Brood Comb for further details |
| 4.22 aware of the various web based resources | BBKA<br>BeeBase (National Bee Unit)<br>Non Native Species Secretariat (where Asian Hornet sightings can be reported)<br>Hornet Watch App |