Name_____KEY_____

EAS Master Beekeeper Lab Exam 2019

The EAS Lab Exam consists of ? stations each with one or more items. There are 2-5 questions per station each worth 1 or 2 points. Total exam value = 100 pts. Passing grade = 85 points. **Read the questions carefully.**

STATION 1. Here before you are 6 microscopes each with a slide containing a mystery item. Please identify the object (1 point each).

1a_____ Varroa
1b_____ proboscis
1c_____ drone aedeagus
1d_____hamulii
1e_____ Sting
1f_____Pollen grains

Station 2. Name each pathogen/organism (1 point each).

2a._____ Wax moth adult

2b._____AFB

2c._____Wax moth larvae

2d._____ EFB

2e._____ Small Hive Beetle larvae

Station 3. What is the name and purpose of each tool (2 points each)

3a. _____pollen trap

_____ collecting pollen

3b. _____fume board

_____harvesting honey

3c. _____Honey scratcher

_____removing wax caps

3d. _____ frame feeder

_____feeding bees

3e._____chinese grafting tool

_____picking up larvae for grafting

Station 4. Identify the object, and why one would use it. (2 points each)

4a. _____marking pen

_____to mark queen

4b. _____entrance reducer

_____reduce robbing and intrusion into the colony

4c._____package

_____to ship a queen and bees for sale

4d._____drone comb

_____for drone comb removal

4e._____Queen cage

_____to introduce a queen or protect her during moving

4f. _____votive mold

_____making candles

Station 5. Identify the object and answer associated question (2 points each).

5a. _____Harbo syringe

What is this object used for?_____Inseminating queens_____

5b. _____mouse guard

When would one use this tool__In winter preparation_____

5c._____a wad of wax

What type of products could one make with this substance?_____candles, soap, lip balm etc…_____

5d. Name this equipment_____ division board

When would one use this piece of equipment_raising queens, specifically to divide the brood nest_____

5e. What is this object? _____ How would one use it?

Station 6. Honey bees and their relatives (2 points each)

6a. Name the insect shown in the picture?_____Apis dorsata_____

Provide a life history fact that differs from *Apis mellifera*. Live on an exposed comb nest

6b. What is the common name of this insect? _____sweat bee

Where does it make its nest?_____in the ground

6c. What insect makes this type of nest?_____ andrenidae

Where would one find this nest on the landscape?_____miner in the ground

6d. Whose nest is this?_____spider wasp

What is inside?_____baby spiders

Station 7. Identify the structure in the picture and answer the associated question(s). (2pts)

7a. What is the structure and what is the difference between picture A and picture B.
spermatheca, A- mated versus B- virgin

7b. Look at this picture of a worker honey bee and name the structure and (A) and (B).
mouthparts, proboscis and mandibles.

7c. What structure is the arrow pointing to on the adult honey bee worker abdomen?_____. What is the purpose of this structure? Nasonov gland, orientation and homing pheromone

7d. What is the name and function of this structure?_____
(2pts) antennal cleaner, clear antennae of any debri

Station 8. Pests and pest management

8a. Name four methods for mite monitoring (4 pts)

1. Alcohol wash (1pt)
2. CO2 (1pt)
3. sticky board (1pt)
4. Powdered sugar (1pt)
5. Fogging (1pt)
6. Visual inspection (1pt)

8b. Name three products currently registered for Varroa management, include and identify the one that is approved for use during nectar flows (4pt)

1. Apivar (1pt)
2. Oxalic acid (1pt) – "The killing material naturally is found in vegetables such as _spinach/leafy veg/brassicas _ and _rhubarb_& legumes" (1pt) from 2017 exam
3. Formic Acid (1pt) – approved for use during nectar flow (1pt) this chemical is naturally produced by what hymenopteran relative of bees? Ant. (1pt)

8c. What is this device used for? Varroa monitoring, specifically mite washes

8d. What damaged this frame? Wax moths (1 point) Name 2 ways to protect frames from this pest. 1) fumigation crystals 2) open air frame storage 3) freezing 4) Bt spray (2pts)

8e. Name four different methods for controlling small hive beetle. Include and identify the one that is considered a bio-control agent (5 points)

Station 9. Foraging behavior and honey (3 pts each)

9a. What three things are required on a honey label? [a: common name of product, net weight, contact information] (3pts)

1. Common name of product
2. Net weight
3. Contact information

9b. What are the three types of honey shown in the following pictures called? (3 pts)

a. Comb
b. Chunk
c. Cream

9c. What type of dance would be used for each of the 3 scenarios a,b and c?

a. Large field of clover 1 mile away ____waggle_____

b. Small field of clover over 2 miles away_____waggle_____

c. Small patch of sunflower 25 meters behind the apiary___round_____

Station 10. Flower biology (5pts)

1. Define pollination and then label the parts A,B and C on the picture. (5 points)
   Pollination is the movement of the pollen grain (male gamete) from the stamen to the stigma.

A. Stigma

B. Anther

C. Petals

D. Where is the nectar located? The nectaries are located at the base of the petals in this particular flower.

10e. What process is letter A and B demonstrating? What process is letter C demonstrating? (2pt)

A and B- Self pollination, C- cross pollination

10f. During pollination pollen is transferred from the anther to the_____stigma_____ (1pts)

10g. What do you call this type of foraging behavior? Explain your answer.

(3pts) This pictures demonstrates robbing behavior

Station 11. Miscellaneous

11a**.** Please name the malady represented in the photograph. (1pt.)
Deformed Wing Virus

11b. What is this machine called?
Artificial insemination device

11c. Describe two reasons why you would use this machine
Inseminating queens
Control mating