

**ASSIGNMENT 2**

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Name: \_\_\_\_\_

Student Number: \_\_\_\_\_

Grade: \_\_\_\_\_/100

**MULTIPLE CHOICE: PLACE THE LETTER OF THE MOST CORRECT ANSWER IN THE BLANK SPACE NEXT TO THE QUESTION NUMBER. (3 POINTS EACH)**

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- \_\_\_\_\_ 1. Larval worker bees  
a. are fed directly by adult workers  
b. feed themselves from brood food deposited at the bottom of cells by adult drones  
c. produce their own sterols, and so do not require these in their diets  
d. add fungicidal agents to the honey they are fed  
e. none of the above
- \_\_\_\_\_ 2. Drone cells are capped by  
a. adult worker bees  
b. the larvae themselves  
c. adults and larvae together  
d. a mix of wax and propolis  
e. none of the above
- \_\_\_\_\_ 3. Brood food is produced by worker  
a. salivary glands  
b. hypopharyngeal glands  
c. mandibular glands  
d. hypopharyngeal plus mandibular glands  
e. none of the above
- \_\_\_\_\_ 4. Pollen may be fed to bees  
a. only in the spring  
b. dry, if sterilized at high temperatures  
c. only when fresh  
d. dry, following freezing, if mixed with supplement  
e. none of the above

- \_\_\_\_\_5. A 15 day old worker
- a. is too young to forage
  - b. will not attend the queen
  - c. frequently has well-developed wax glands
  - d. can not digest pollen
- \_\_\_\_\_6. Nectar brought back to the nest
- a. has been processed into honey
  - b. still needs to have some water evaporated from it
  - c. is deposited directly into cells by workers
  - d. contains mostly trisaccharides
  - e. two of the above
- \_\_\_\_\_7. Orientation flights
- a. are taken when bees are less than 5 days old
  - b. take more time than foraging flights
  - c. can not be taken on cloudy days
  - d. may also be defecation flights
  - e. none of the above
- \_\_\_\_\_8. The DVAV dance
- a. is only associated with foraging
  - b. regulates foraging activity
  - c. is performed by workers and drones following flight
  - d. is identical to the trembling dance
  - e. two of the above
- \_\_\_\_\_9. Polarized light is perceived
- a. only by the ocelli
  - b. by an interaction between compound eyes and ocelli
  - c. only on cloudy days
  - d. only on sunny days
  - e. none of the above
- \_\_\_\_\_10. Queen pheromones
- a. inhibit the rearing of new queens
  - b. attract drones to mate inside the nest
  - c. repel adult drones once mated
  - d. are produced in the queen's nasonov gland
  - e. stimulate worker egg laying

**TRUE - FALSE:** WRITE TRUE OR FALSE IN THE BLANK TO THE LEFT OF THE QUESTION. (3 POINTS EACH)

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- \_\_\_\_ 1. High fructose corn syrup should not be fed to bees in the spring.
- \_\_\_\_ 2. Queens deposit unfertilized eggs in worker cells and fertilized eggs in queen cups.
- \_\_\_\_ 3. Cells are closed by the time larvae spin cocoons.
- \_\_\_\_ 4. Robbing workers frequently have few hairs.
- \_\_\_\_ 5. Landmarks are the most important orientation cue used by honey bees returning from a flower.

**SHORT ANSWER:** BRIEFLY ANSWER EACH QUESTION (3 POINTS EACH).

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1. Three functions of queen attendance are:
  
  
  
  
  
  
  
  
  
  
2. List and describe each in a phrase; 3 ways of feeding sugar to bees.
  
  
  
  
  
  
  
  
  
  
3. Why are cells capped?
  
  
  
  
  
  
  
  
  
  
4. Describe what happens to a worker bee following stinging.
  
  
  
  
  
  
  
  
  
  
5. How do bees compensate for the sun's daily movement?

**LONG ANSWER: ANSWER EACH QUESTION (10 POINTS EACH).**

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1. What factors determine how long an adult bee lives? Is there anything you, as a beekeeper, can do to influence adult bee length of life?
2. Discuss the factors that determine whether a bee will be a worker, drone, or a queen.
3. Contrast the way bees collect and process nectar with the way they collect and process pollen.
4. How do pheromones influence worker bee behaviors?