

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**  
**B.Sc.(Hons.) Agriculture Winter 2019 - 20 Examination**

Semester: 2

Date: 11/12/2019

Subject Code: 20104151

Time: 02:00 pm to 04:30 pm

Subject Name: Fundamentals of entomology

Total Marks: 50

**Instructions**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Do as Directed.****A. Fill in the blanks. (Each of 0.5 marks)****(05)**

1. Every flowering plant providing food for one or many \_\_\_\_\_ insects.
2. The forewing of coleopteran insects modified in to \_\_\_\_\_ for protection of membranous hind wings.
3. Adult mite have \_\_\_\_\_ pairs of legs
4. The study of the kinds and diversity of organisms and the relationships among them is called \_\_\_\_\_
5. Meso and metathorax is collectively known as \_\_\_\_\_
6. Locomotor center in insect body is \_\_\_\_\_
7. The alimentary canal of insect is divided into \_\_\_\_\_ parts.
8. For dry storage of coleopteran insects, it should be pin through the \_\_\_\_\_
9. The wings of insects arise from \_\_\_\_\_
10. A respiratory system in which all ten pairs of spiracles are functional is called \_\_\_\_\_

**B. Multiple choice type questions. (Each of 0.5 mark)****(10)**

1. Insects of which order possess scale wings?
 

a) Lepidoptera	c) Diptera
b) Coleoptera	d) Orthoptera
- 2 Tympanum organ is related to the
 

a) Sound producing	c) Taste
b) Hearing	d) Photoreceptor
- 3 Which insect is biggest in insect world in term of total wing surface area?
 

a) Atlas moth ( <i>Attacus atlas</i> )	c) Sphinx moth
b) Tasar silkworm moth	d) Lemon butterfly
- 4 The part of insect body is
 

a) Head, thorax and abdomen	c) Head, cephalothorax
b) Head and tail	d) None of these
- 5 It is the largest order in the animal kingdom.
 

a) Diptera	c) Hymenoptera
b) Coleoptera	d) Lepidoptera
- 6 All arthropods have.....
 

a) Segmented bodies	c) Jointed appendages
b) Bilateral symmetry	d) All of these
- 7 Who was first Imperial Entomologist?
 

a) Beeson	c) Hampson
b) Maxwell Lefroy	d) Fletcher
- 8 Hermaphroditism is very common in
 

a) <i>Icerya purchasi</i>	c) <i>Aphis gossypii</i>
b) <i>Apisindica</i>	d) <i>Myzus persicae</i>
- 9 The outer most layer of insect body is called

- a) Cuticle  
b) Epidermis or Hypodermis
- c) Epidermis  
d) Basement membrane
- 10 Who was the first Entomologist to the Government of India?  
a) H. M. Lefroy  
b) Lionel de Niceville  
c) T. B. Fletcher  
d) J. C. Fabricius
11. During the development period insects cast off their cuticle is called  
a) Shedding  
b) Moulting/ecdysis
- a) Shedding  
b) Moulting/ecdysis
12. The sclerites are attached to each other with a thin membrane is called  
a) Sclerites  
b) Suture  
c) Groove  
d) Sulcus
13. The second segment of antennae is  
a) Scape  
b) Pedicel  
c) Flagellum  
d) None of these
14. Insect tongue is  
a) Labium  
b) Labrum  
c) Hypopharynx  
d) Maxilla
15. The basal segment of insect leg is  
a) Coxa  
b) Trochanter  
c) Femur  
d) Tibia
16. The wax layer is the part of  
a) Procuticle  
b) Epicuticle  
c) Exocuticle  
d) Endocuticle
17. Which is fastest flying insect?  
a) Dragonfly  
b) Butterfly  
c) Locust  
d) mayfly
18. Afferent neuron is also known as  
a) Sensory neuron  
b) Associational neuron  
c) Motor neuron  
d) All of these
19. Absorption of digested food takes place in  
a) Hindgut  
b) Midgut  
c) Foregut  
d) None of these
20. Which type of legs are found in mole cricket  
a) Fossorial  
b) Natatorial  
c) Saltatorial  
d) Cursorial

**Q.2 Do as Directed.**

**A. Define the following. (Any five)**

**(05)**

1. Moulting
2. Nomenclature
3. Agricultural Entomology
4. Excretion
5. Taxonomy
6. Exoskeleton
7. Nocturnal

**B. Answer the following. (Any five)**

**(05)**

1. What is insect?
2. Enlist the Sclerites of Head with location
3. Enlist the Natural enemies (Parasites, Predators) of insect
4. Draw the labelled diagram of Female reproductive system
5. Write the Steps of moulting
6. Explain the types of insect mouthparts with example
7. How insects are harmful (Enemy)?

**Q.3 Write short notes. (Any five)**

**(10)**

1. Write the stages of taxonomy

2. Write the types of neurons according to number of axons
3. Write the types of neurons according to functions
4. Write the function of blood or haemolymph of insect
5. Explain the types of insect heads with example
6. Enlist the the excretory organs

**Q.4 Attempt any Three/Long Questions/Example**

**(15)**

1. Explain the digestive system of insect with labelled diagram
2. Effect of abiotic factors on population growth of insects
3. What is metamorphosis? Explain the types of metamorphosis with example
4. Classify the respiratory system according to number of functional spiracles