

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**

**B.Sc.(Hons.) Agriculture Summer 2018 - 19 Examination**

Semester: 2

Subject Code: 20104151

Subject Name: Fundamentals of entomology

Date: 01/04/2019

Time: 2:00 pm to 4:30 pm

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 arises 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, cephalothoraxes
b) Head and tail	d) None of these
5. It is the largest order in the animal kingdom.
 

a) Dipteral	c) Hymenoptera
b) Coleopteran	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	c) Epidermis
b) Epidermis or Hypodermis	d) Basement membrane
10. Who was the first Entomologist to the Government of India?
 

a) H. M. Lefroy	c) T. B. Fletcher
b) Lionel de Niceville	d) J. C. Fabricius
11. Cornicles are found in \_\_\_\_\_.

- a) Whitefly  
b) Lac insect
12. The cuticle is made up of \_\_\_\_\_.
- a) Epicuticle, Procuticle  
b) Procuticle, Endocuticle
13. The wax layer is the part of
- a) Procuticle  
b) Epicuticle
14. In grasshopper which type of head is found?
- a) Prognathous  
b) Hypognathous
15. Clypeus is situated at
- a) Cephalothorax  
b) Head region
16. What is the shape of the epicranial suture?
- a) Inverted V shaped  
b) Inverted U shaped
17. The Johnston's organ works as \_\_\_\_\_.
- a) Auditory organ  
b) Olfactory organ
18. Bipectinate type antennae found in \_\_\_\_\_.
- a) Leaf hopper  
b) Silk moth
19. The mouth parts in order Lepidoptera is \_\_\_\_\_.
- a) Piercing & Sucking type  
b) Biting and chewing type
20. The legs of insects arise from \_\_\_\_\_.
- a) Prothorax  
b) Mesothorax
- c) Aphids  
d) Jassids
- c) Pro, Epi and Endocuticle  
d) None of these
- c) Exocuticle  
d) Endocuticle
- c) Opisthognathous  
d) None of these
- c) Abdomen  
d) Thorax
- c) Inverted Y shaped  
d) None of above
- c) Gustatory organ  
d) None of these
- c) Mantid  
d) Sugarcane root borer
- c) Siphoning type  
d) Sponging type
- c) Metathorax  
d) All of these

**Q.2 Do as Directed.**

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

**(05)**

1. Moulting
2. Nomenclature
3. Agricultural Entomology
4. Excretion
5. Insect ecology
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 excretory organs and Explain the malpighian tubules.

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

**(15)**

1. Explain the digestive system of insect with labelled diagram.
2. Effect of biotic and abiotic factors on population growth of insects.
3. What is metamorphosis? Explain the types of metamorphosis with example.
4. What is IPM? Describe the Components of IPM.