

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

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

Semester: 2

Date:26/12/2018

Subject Code: 20104151

Time: 10:30am to 01:00pm

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. A respiratory system in which all ten pairs of spiracles are functional is called \_\_\_\_\_.
2. The right mandible is absent in \_\_\_\_\_ type of mouth parts.
3. The male genital appendages are situated at \_\_\_\_\_ abdominal segment in insect.
4. The antennae is situated at \_\_\_\_\_.
5. The forewing of coleopteran insects modified in to \_\_\_\_\_ for protection of membranous hind wings.
6. Adult mite have \_\_\_\_\_ pairs of legs.
7. The wings of insects arise from \_\_\_\_\_.
8. The amount of uric acid in excreta of insects is \_\_\_\_\_ percent.
9. In house fly, hind wings are reduced to slender knob and a stalk structure known as \_\_\_\_\_.
10. Aquatic nymph is called \_\_\_\_\_.

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

1. 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
2. Who was first Imperial Entomologist?
 

a) Beeson	c) Hampson
b) Maxwell Lefroy	d) Fletcher
3. Which insect is biggest in insect world in term of total wing surface area?
 

a) Atlas moth (Attacus atlas)	c) Sphinx moth
b) Tasar silkworm moth	d) Lemon butterfly
4. Which is fastest flying insect?
 

a) Dragonfly	c) Locust
b) Butterfly	d) Mayfly
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. Insects of which order possess scale wings?
 

a) Lepidoptera	c) Diptera
b) Coleoptera	d) Orthoptera
8. Hermaphroditism is very common in
 

a) <i>Icerya purchasi</i>	c) <i>Aphis gossypii</i>
b) <i>Apis indica</i>	d) <i>Myzus persicae</i>
9. The part of insect body is
 

a) Head, thorax and abdomen	c) Head, cephalothorax
b) Head and tail	d) None of these
10. The outer most layer of insect body is called
 

a) Cuticle	c) Epidermis
b) Epidermis or Hypodermis	d) Basement membrane
11. Cornicles are found in
 

a) Whitefly	c) Aphids
b) Lac insect	d) Jassids

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

**Q.2 Do as Directed.**

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

**(05)**

1. Agricultural Entomology
2. Exoskeleton
3. Moulting
4. Metamorphosis
5. Respiratory System
6. Nocturnal
7. Nomenclature

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

**(05)**

1. Write the Steps of moulting
2. Explain the body wall its structure and function with labelled diagram
3. Explain the types of metamorphosis with example
4. Draw the labelled diagram of female reproductive system
5. What is insect?
6. What is entomology?
7. How insects are harmful (Enemy)?

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

**(10)**

1. Draw the labelled diagram of tracheal respiration system
2. Write the function of blood or haemolymph of insect
3. Write the types of neurons according to functions
4. Write the types of neurons according to number of axons
5. Write the stages of taxonomy
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. Enlist the excretory organ of insect and explain the Malpighian tubules
3. What is metamorphosis? Explain the types of metamorphosis with example
4. Draw the labelled diagram of Female reproductive system