

**Salaheddin University- Erbil**

**College of Education**

**Department of Biology**

**Subject: Question Bank of Entomology**

**Give suitable terms for the following sentences:**

1-The area lying in between the tergum and dorsal diaphragm, that contains heart known as..... sinus.

2-..... a peculiar type of development which consists of two or more types or forms of larvae in the life cycle of insects.

3- ..... are exceptional in having only six abdominal segments, even in the embryo.

4- Legs modified for ..... are found in predaceous insects such as the mantis.

5- The cerci may be ..... as in Grasshoppers (Orthoptera).

6- Circulation of blood takes place in two phases: ..... and ..... due to the action of the alary muscles as well as the muscles of the walls of the heart.

7-In Diptera the hind wings are modified as .....

8- The mouthparts of female mosquitoes are of the..... Type.

9- Dorsal body plate of each thoracic segment is called as ....., mesonotum and ..... respectively.

10-.....**cross vein located between radius and media.**

11- A typical insect wing is triangular with three margins and three angles. Three margins are: ....., .....and .....

12- Honeybee has .....type mouthpart and the food canal is formed between.....**and**.....

13- ..... mouthparts Is regard as a secondary modification of Sponging type.

14- Chitin is absent in .....

15- ..... It is differentiated into Exo and Endo cuticle after sclerotization process.

16- Moulting is a complex process which involves 1....., 2-.....and 3.....

17- The stage where the insect has both newly formed epi and procuticle and old exo and epicuticle is known as .....

18- The proboscis in Sponging type of mouthparts is divided into a basal ..... middle ..... and a distal .....

19- The period between any two molts is called .....

20- In Siphoning type mouthparts, the food channel is formed between .....

21- Insect body wall consists of 3 layers 1.....2.....and.....

### Choose the correct answer

- 1) Study of arrangement of seta is known as..... (**Chaetotaxy- Taxonomy- Chemotaxy**)
- 2) ..... are Cuticular processes, immovable outgrowths of cuticle, found on hind tibia of grasshopper. (**Spines- Spurs- Sclerite**)
- 3) The mandibles in ..... type of Mouthparts are dumbbell shaped, non-trophic and industrial in function, have a variety of functions. (**Chewing and lapping - Chewing - Rasping and sucking**)
- 4) .....is the separation of the epidermal cells from the old cuticle. (**Apolysis- Ecdysis-Exuvia**)
- 5) Insects which feed on dead and decaying matter are called ..... (**Predator- Scavengers- Parasite**)
- 6) The food channel in butterflies is formed by the fusion of both the ..... (**Paraglossa- Galea -Glossa**)
- 7) The mandibular stylets in Piercing and sucking type mouthparts in ..... possess serrated margins at their tip. (**Mosquitoes (female)- Mosquitoes (male)- plant bug**)
- 8) The proboscis in.....type mouthparts is divided into a basal rostrum, middle haustellum and a distal labellum. (**Sponging -Cutting and lapping - Siphoning**)

- 9) ..... Hormone Produced from corpora allata of brain that helps the insects to be in immature stage. (Juvenile - **Ecdysis** - Moulting )
- 10) After shedding of old cuticle the new cuticle which is soft, milky white coloured becomes dark and hard through the process known as ..... (sclerotization- **Apolysis- Ecdysis**)
- 11)..... type mouthparts is regard as a secondary modification of sponging type, labellum in this type reduced in size and provided at tip with rasping denticles. (**Cutting and sucking- Cutting and lapping- lapping**)
- 12).....the area between the cuticle and epidermis, fills with a molting gel that contains chitinase and proteases for digesting the old cuticle.( **Exuvial space-Exuvia-Stadium**)
- 13) ...have Cutting and lapping type mouthpart. (**Tsetse fly - Horse flies - Stable fly**)
- 14)..... Is an untanned cuticular protein, which is water soluble. (Sclerotin- Arthropodin- Resilin)
- 15) ..... suture it is the only real suture in insect head. As this suture separates the head from the neck, hence named as real suture.( **Occipital- Post occipital - Ecdysial** )
- 16) Food channel in Sponging type of Mouthparts ( House fly) which is formed by the (maxillae and hypopharynx-labrum-epipharynx and hypopharynx-maxillae and mandible)
- 17) ..... process occurs many times in an insect during the immature stages before attaining the adult-hood. (**Sclerotization - Apolysis – Moulting**)
- 18) The time interval between the two subsequent moulting is called as.....  
(**Pharate instar - Stadium -Instar**)

**Read carefully and answer true (T) or false (F) and correct the false one:**

1. Grouping of body segments into distinct regions are known as the tagmata.
2. The mandibles in chewing type mouth parts are dumbbell shaped, non-trophic and industrial in function.
3. The period between any two molts is called instar.
4. Typically the mouthparts are directed ventrally, (Hypognathous) as in aphid.
5. The cuticular parts which discarded during the moulting are known as Exuvia.
6. The separation of the epidermal cells from the old cuticle is known as ecdysis
7. Cutting and sucking mouthparts is regard as asecondary modification of sponging type,
8. Post occipital suture is 'U' shaped or horseshoe shaped suture located between epicranium and occiput.
9. Frons is that part of the head immediately ventrad of the vertex.
10. Naids of Dragonflies have predaceous with biting type mouthparts

**Write the main differences differences between the following terms.**

1. Arolem and Empodium
2. Exopterygota and Endopterygota
3. Larva and Nymph
4. Epimorphic development and Anamorphic development
5. Exocuticle and Endocuticle
6. Apodemes and Apophyses
7. Apolysis and Ecdysis

**Write main function for the following terms (20 mark).**

- 1- Collophore or ventral tube
- 2- Crop
- 3- Incurrent 'ostia'
- 4- Mandible
- 5- Peritrophic membrane (PM)
- 6- Juvenile Hormone
- 7-Dermal gland
- 8-Apodemes

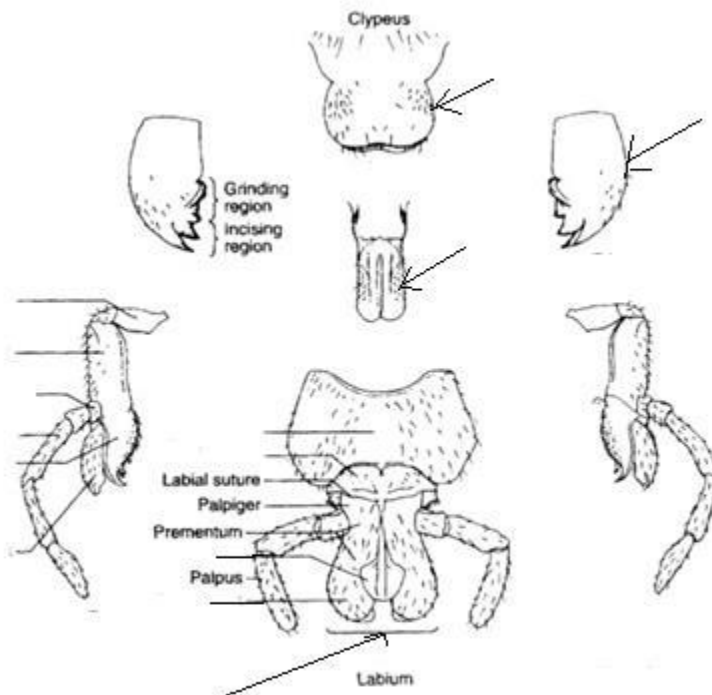
- 9-Pore canals
- 10-Maxillary palps
- 11-Wax layer
- 12-Antennae
- 13- Tentorium

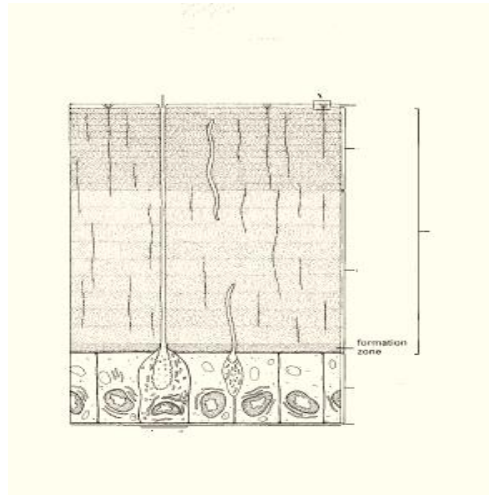
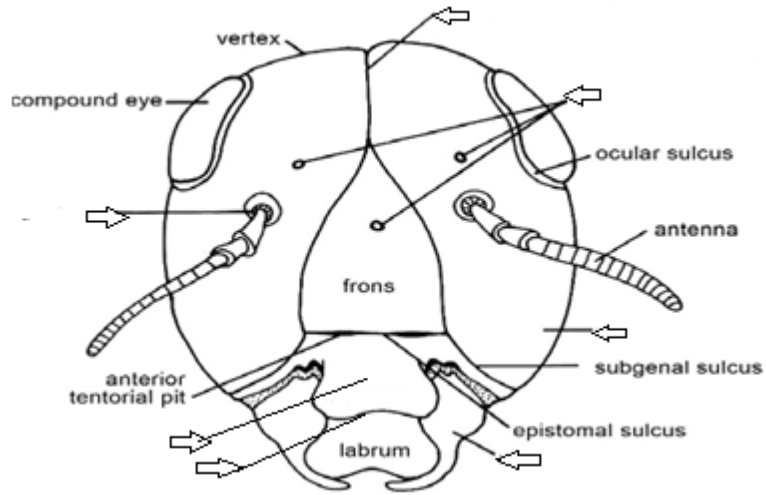
**Only count which characters contributing to the, success of class insect.**

**Draw and label each of the following:**

- 1- Structure of alimentary canal (Insect Digestive System)
- 2- Clarify the main steps of molting process in insects.
- 3- Main sinuses of haemocoel (Circulatory system)
- 4-Insect wing areas.
- 5- Typical insect integument.

**Name the figures and all the pointed parts with suitable term.**





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