

## Unit 5 - Maintenance and Movement

### Study Guide

#### Unit objectives:

1. Describe embryonic origin of alimentary canal divisions.
2. Draw and label generalized alimentary canal and describe function of each component.
3. Draw and label generalized insect circulatory system and describe circulation pattern.
4. Describe the tracheal system of insects and define trachea, tracheoles, and taenidia.
5. Describe how insects maintain proper body temperature and how they keep from freezing.

#### Introduction Alimentary Canal

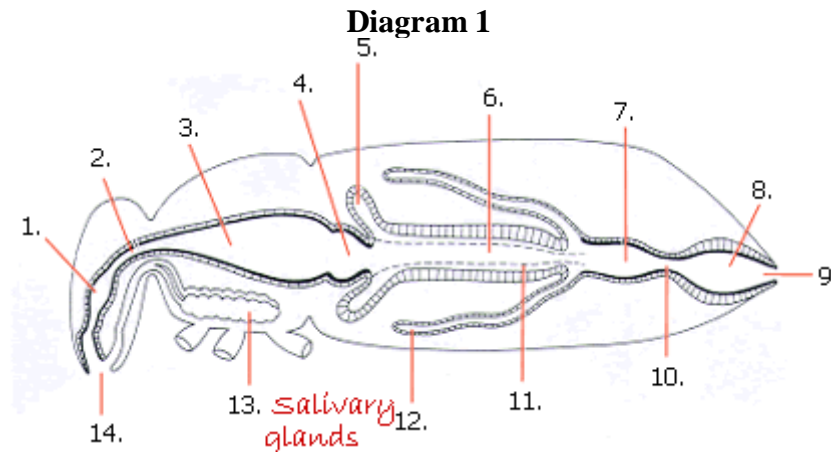


Fill out the functions for the digestive structures.

**Table 1**

<u>Structure</u>	<u>Function</u>
preoral cavity	
pharynx	
esophagus	
salivary gland	
crop	
proventriculus	
midgut	
gastric caeca	
Malpighian tubules*	
peritrophic membrane	
ileum	
colon	
rectum	
anus	

## Label Diagram 1



### Alimentary canal embryonic origins

Which embryonic layer formed the midgut?

Which one formed the hindgut?

What happens to the foregut and hindgut lining when the insect molts?

What is the lining made of?

### Tracheal system

Why don't insects have lungs?

What is the function of the tracheal system?

What is the function of spiracles?

What is the function of taenidia?

How does oxygen get to every cell in the insect body?

### Circulatory system

Why is insect blood **not** red?

Does hemolymph transport oxygen to cells?

What is the insect heart?

Define ostia:

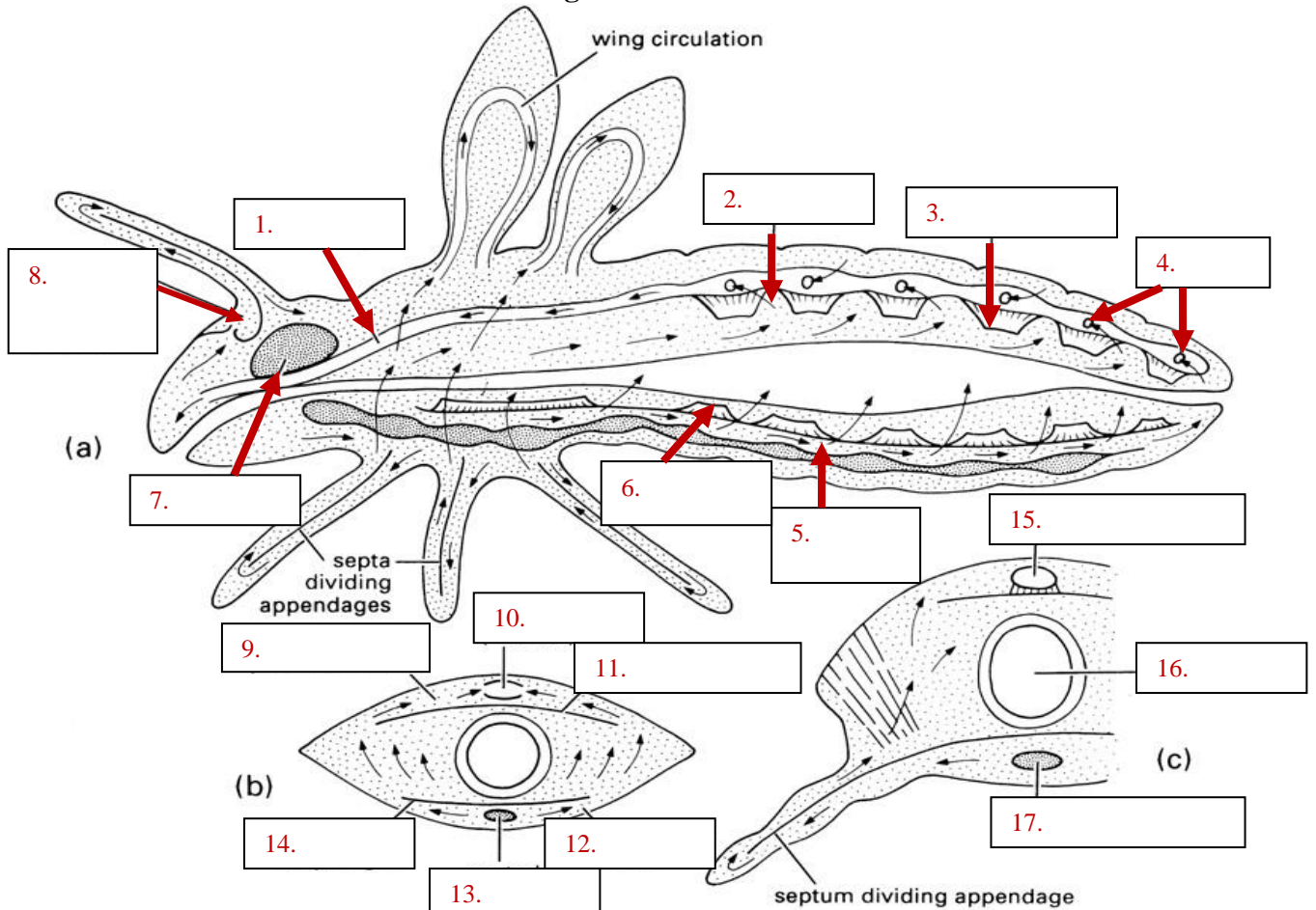
Define aorta:

How does hemolymph move throughout the insect body? What direction does it flow?

How does hemolymph get into the wings and antenna?

Label the following circulatory system in diagram 2.

**Diagram 2**



1. <b>aorta – dorsal vessel</b>	10.
2.	11.
3.	12.
4.	13.
5.	14.
6.	15.
7.	16.
8.	17.
9.	

### **Maintaining body temperature**

When an insect is at rest, what is its body temperature?

What are some ways insects increase their body temperature?

What are some ways insects keep from freezing?

**Refer back to the unit objectives and see that you have met them.**

**GOOD LUCK ON EXAM 1!**