



Benha University, Faculty of Science
Final Examination, 2nd Semester, 2017
General Entomology (111E)
Date Tuesday, 30/5/2017

Entomology Department
Time allowed 1 hour
48 Marks

ملحوظة: الأسئلة في ورقتين ، والإجابة في المكان المخصص لها في الجدول

Model Answer

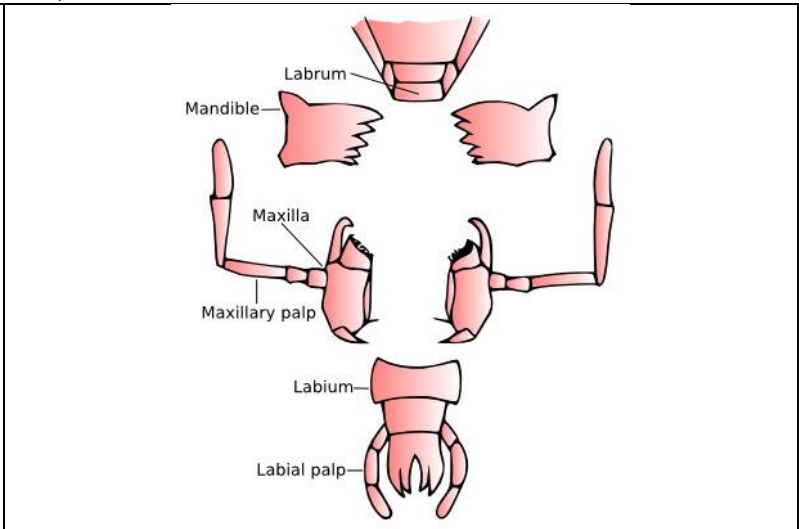
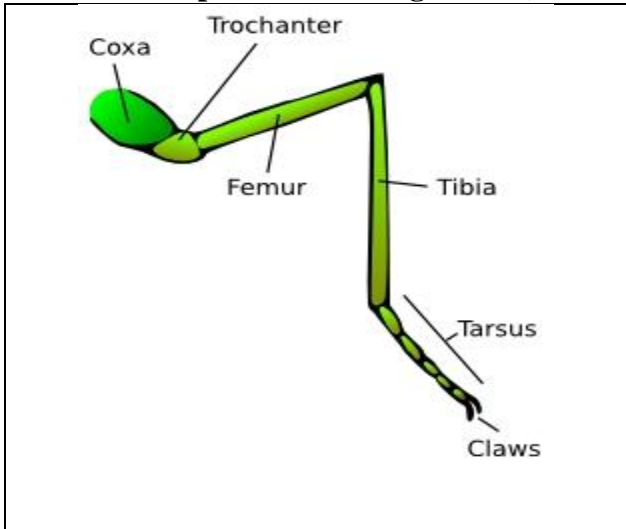
Question 1: Write the scientific term for each of the following: (15 Marks)

The Statements	S.T.
The stages between molts.	Instars
Coloration, makes some insects hardly noticeable for predators, is called.	cryptic
The strongest of all natural fibers.	Silk
A compound from insects used for tanning and dyeing leather.	Tannic acid
Subclass of primitive and wingless insects.	Apterygota
The most diverse of all insect orders.	Coleoptera
The longest of all insects.	Stick insects or walking sticks
Periodic shedding the exoskeleton	Molting or ecdysis
The basic structure in the respiratory system in insects.	Tracheas
Development of eggs without fertilization by sperm.	Parthenogenesis

Question 2: Put the sign ✓ or x in front of each statement in the column (18 Marks)

THE STATEMENT	
The antennae of grasshoppers can be longer than the body.	✓
Antennae can be used as tactile organs.	✓
In grasshoppers and crickets eardrum is located on the tibiae of the hind legs.	x
Male and female mosquitoes have piercing and sucking mouth parts.	x
Wings of houseflies move as a unit together during flight.	x
Spiders and scorpions are close relatives of insects in phylum Hexapoda.	x
Insects are divided up into 32 orders, or groups.	✓
Allantoin was extracted from maggots and used as antibiotic.	✓
Bumblebees have "tongues" For collecting nectar.	✓
If all pairs of legs are equally developed, such legs are called jumping legs.	x
Each facet of the compound eye represents the surface of a separate eye called ommatidium.	✓
Insects live in Arctic and Ant-arctic Circles, are active only during summer.	✓
Some insects can run on water surface.	✓
Male ants can live up to 15 years.	x
Freedom of insect's movement is ensured by chitin in the exoskeleton.	x
In hemimetabolous insects, wings may be completely absent during the first instar	✓
All adult higher insects have wings.	x
All plants cannot reproduce without pollination by insects.	x

Question 3: Complete the missing labels (15 Marks)



Comment on respiration of this



insect

Many insects living in water (water beetles and true bugs, larvae and pupae of mosquitoes, etc) have to rise to the surface to take in air, i.e. they also have air breathing. Larvae of mosquitoes and some other insects, for the time of renewing the air in the tracheal system, get “hanged” from beneath to the surface of the water with the help of water-resistant hairs.

Comment on the image



Insects could guide the next wave of advances in biomimetic robotics. Small flying robots could one day be used for detecting harmful chemicals.