### C:\Users\Dr.Abdelwahab\Desktop\Logo Entomology.jpgBenha University, Faculty of Science Entomology Department

### Final Examination, 2nd Semester, 2017 Time allowed 1 hour

### General Entomology (111E) 48 Marks

### Date Tuesday, 30/5/2017

**ملحوظة: الأسئلة في ثلاث ورقات ، والإجابة في المكان المخصص لها في الجدول**

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

|  |  |
| --- | --- |
| S.T. | **The Statements** |
|  | The stages between molts. |
|  | Coloration, makes some insects hardly noticeable for predators, is called. |
|  | The strongest of all natural fibers. |
|  | A compound from insects used for tanning and dying leather. |
|  | Subclass of primitive and wingless insects. |
|  | The most diverse of all insect orders. |
|  | The longest of all insects. |
|  | Periodic shedding the exoskeleton |
|  | The basic structure in the respiratory system in insects. |
|  | Development of eggs without fertilization by sperm. |

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

|  |  |
| --- | --- |
|  | **THE STATMENT** |
|  | 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. |
|  | **Male and female mosquitoes have piercing and sucking mouth parts.** |
|  | **Wings of houseflies move as a unit together during flight.** |
|  | Spiders and scorpions are close relatives of insects in phylum Hexapoda. |
|  | 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. |
|  | 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. |
|  | Freedom of insect's movement is ensured by chitin in the exoskeleton. |
|  | In hemimetabolous insects, wings may be completely absent during the first instar |
|  | All adult higher insects have wings. |
|  | All plants cannot reproduce without pollination by insects. |

### Question 3: Complete the missing labels (15 Marks)

|  |  |
| --- | --- |
| C:\Users\SCI_DRABDELWAHAB\Desktop\7.jpg | C:\Users\SCI_DRABDELWAHAB\Desktop\4.jpg |
| Comment on respiration of this insect Go to fullsize image | Comment on the image C:\Users\SCI_DRABDELWAHAB\Desktop\7.jpg |

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**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)**

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

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

|  |  |
| --- | --- |
|  | **THE STATMENT** |
|  | The antennae of grasshoppers can be longer than the body. |
|  | Antennae can be used as tactile organs. |
| x | 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. |
|  | Insects are divided up into 32 orders, or groups. |
|  | **Allantoin** was extracted from maggots and used as antibiotic. |
|  | Bumblebees have “tongues” For collecting nectar. |
| x | If all pairs of legs are equally developed, such legs are called jumping legs. |
|  | 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. |
| x | Male ants can live up to 15 years. |
| x | Freedom of insect's movement is ensured by chitin in the exoskeleton. |
|  | In hemimetabolous insects, wings may be completely absent during the first instar |
| x | All adult higher insects have wings. |
| x | All plants cannot reproduce without pollination by insects. |

### Question 3: Complete the missing labels (15 Marks)

|  |  |
| --- | --- |
| نتيجة بحث الصور عن ‪insect leg‬‏ | نتيجة بحث الصور عن ‪mouthparts of cockroach‬‏ |
| Comment on respiration of this insect Go to fullsize image 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 C:\Users\SCI_DRABDELWAHAB\Desktop\7.jpg Insects could guide the next wave of advances in biomimetic robotics. Small flying robots could one day be used for detecting harmful chemicals. |