### C:\Users\Dr.Abdelwahab\Desktop\Logo Entomology.jpgBenha University,

### Faculty of Science,

### Entomology Department

### Final Examination, 2nd Semester, 2017

### Insect pathology and Immunology (396E)

### Time allowed 1 Hour

### Date 6/6/2017

### Answer the following questions:

### 1. Put the sign √ or X (24 Marks)

|  |  |
| --- | --- |
| **Statement** |  |
| Bacillus spp can be easily produced by fermentation. |  |
| The members of (GVs) can be distinguished from (NPVs) morphologically. |  |
| Wolbachia is a gram-positive bacterial genus form intracellular inherited infections in many invertebrates. |  |
| Chemically poisoned insects can have the appearance of pathogen-infected insects. |  |
| Plant secondary compounds can poison adapted insect hosts. |  |
| It is easy to determine whether a disease is due to a genetic metabolic disease, or a nutritional disease. |  |
| Bacterial flora found in digestive tracts of healthy insects resemble the flora of higher animals |  |
| The most important bacteria causing insect diseases are the spore forming bacteria |  |
| Most synthetic insecticides are neurotoxins. |  |
| The clottable proteins are lipophorin and vitellogenin like proteins. |  |
| All the components of the insect immune system (the fat body, the lymph gland and the hemocytes) originate from the ectoderm. |  |
| All occluded insect viruses can survive freeze drying. |  |
| Entomophthorales fungi are easily cultured on artificial media |  |
| Dead insects due to Rhabiditid nematodes turns red |  |
| *Bacillus sphaericus* bacteria produce crystalline parasporal body |  |
| In pathological studies, infected specimens can be store in 70% alcohol |  |

### 2. Write the scientific term in front of each of the following statements (20 Marks)

|  |  |
| --- | --- |
| **Statement** | **Scientific term** |
| Protect the virus and can persist for years in the right conditions |  |
| The safest insect viruses |  |
| Rapidly growing microscopic cells |  |
| Microbes that harm their hosts |  |
| Intersex mutants that are usually sterile |  |
| Abnormal masses of tissues, uncoordinated with that of normal tissue and persists in the same excessive manner after cessation of the stimulus that affects it. |  |
| Produced by injured insects to speeds the heart rate, mobilizes hemocytes, and stimulates RNA synthesis. |  |
| A multicellular defense mechanism where an overlapping layer of hemocytes is formed around larvae of parasitic insects. |  |
| Produced mainly in the fat body to defend insects against microbial attack. |  |
| Inactive proenzyme, synthesized in the hemocytes and is either actively transported into the cuticle, or deposited around wounds |  |

### 3. Write only two important symptoms of insects infected with the following pathogens (4 Marks)

|  |  |
| --- | --- |
| Fungi | Viruses |
|  |  |

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### Answer the following questions:

### 1. Put the sign √ or X (24 Marks)

|  |  |
| --- | --- |
| **Statement** |  |
| Bacillus spp can be easily produced by fermentation. | √ |
| The members of (GVs) can be distinguished from (NPVs) morphologically. | √ |
| Wolbachia is a gram-positive bacterial genus form intracellular inherited infections in many invertebrates. | X |
| Chemically poisoned insects can have the appearance of pathogen-infected insects. | √ |
| Plant secondary compounds can poison adapted insect hosts. | X |
| It is easy to determine whether a disease is due to a genetic metabolic disease, or a nutritional disease. | X |
| Bacterial flora found in digestive tracts of healthy insects resemble the flora of higher animals | √ |
| The most important bacteria causing insect diseases are the spore forming bacteria | √ |
| Most synthetic insecticides are neurotoxins. | √ |
| The clottable proteins are lipophorin and vitellogenin like proteins. | √ |
| All the components of the insect immune system (the fat body, the lymph gland and the hemocytes) originate from the ectoderm. | X |
| All occluded insect viruses can survive freeze drying. | √ |
| Entomophthorales fungi are easily cultured on artificial media | X |
| Dead insects due to Rhabiditid nematodes turns red | X |
| *Bacillus sphaericus* bacteria produce crystalline parasporal body | X |
| In pathological studies, infected specimens can be store in 70% alcohol | X |

### 2. Write the scientific term in front of each of the following statements (20 Marks)

|  |  |
| --- | --- |
| **Statement** | **Scientific term** |
| Protect the virus and can persist for years in the right conditions | Occlusion bodies |
| The safest insect viruses | bucloviruses |
| Rapidly growing microscopic cells | Germs |
| Microbes that harm their hosts | Pathodens |
| Intersex mutants that are usually sterile | Gynandromorphy |
| Abnormal masses of tissues, uncoordinated with that of normal tissue and persists in the same excessive manner after cessation of the stimulus that affects it. | Neoplasms |
| Produced by injured insects to speeds the heart rate, mobilizes hemocytes, and stimulates RNA synthesis. | haemokinin (injury factor) |
| A multicellular defense mechanism where an overlapping layer of hemocytes is formed around larvae of parasitic insects. | Encapsulation |
| Produced mainly in the fat body to defend insects against microbial attack. | Antimicrobial peptides |
| Inactive proenzyme, synthesized in the hemocytes and is either actively transported into the cuticle, or deposited around wounds | Prophenoloxidase |

### 3. Write only two important symptoms of insects infected with the following pathogens (4 Marks)

|  |  |
| --- | --- |
| Fungi | Viruses |
| * After death the cadaver is desiccated, never flaccid. * The body is covered with fungal mycelium or bands of hyphae grow between the integuments. | * Larvae may hang by their prolegs, May ooze white fluid. * Larvae become pale and flaccid and dark in color after death. |