	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR SENIORS (FOURTH YEAR) STUDENTS OF CEMISTRY AND ENTOMOLOGY			
	COURSE TITLE:	Integrated pest management		COURSE CODE:EN 4202
DATE:	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions:
Notice! The examination consists of two pages.

1. **Choose from between the brackets the correct answer (Total 15 Marks, 3 Marks each):**

   a. Trap crops are planted to (attract and hold pest------repel) insects where they can be managed more efficiently and prevent or reduce their movement onto valuable crops.

   b. *Bacillus thuringiensis israelensis* is active against (mosquito and fungus gnat larvae------black fly larva) but is not harmful to other aquatic organisms

   c. Nematodes are most useful against insects living in (aquatic habitat--------on or in the soil).

   d. Natural enemies usually take (longer----------shorter) to suppress a pest population than other forms of pest control.

   e. Conventional or chemical insecticides are defined as those having a (narrow spectrum----------broad spectrum) of activity and being more detrimental to natural enemies

2. **Correct the underlined words in the following statements (Total 10 Marks, 2 Marks each)**
   a. Biorationals insecticides are toxic and more nonselective, they are generally harmful to natural enemies and the environment.
   b. Augmentation biological control is used most often for fast-moving pests such as grasshoppers, in enclosed spaces such as greenhouses, by home gardeners, and in organic agriculture where few disruptive chemicals are used.
   c. Physical controls include physical barriers and tillage that keep insects out.
   d. Insecticides that are selective because they are most effective against insects with certain feeding habits, at certain life stages, or within certain taxonomic groups, are referred to as conventional pesticides.
   e. Natural enemies are generally less adversely affected by chemical insecticides than the target pest.
3. **Fill in the blanks with the appropriate words (Total 20 Marks, 2 Marks each)**

   a. Not all insects require control because,.....and.....
   b. Pest monitoring when conducted routinely can help.....,.....,.....and.....
   c. The components of an integrated pest management program are.....,.....,.....,...and.....
   d. Agricultural practices that make the environment less favorable to insect include,.....

e. Pheromone traps are used extensively in commercial agriculture to help farmers, ...and.....
f. Insect growth regulators are least toxic pesticide control option that typically kill insects by.....
g. The types of biological control are.....,.....and.....
h. Pesticides are essential tools in IPM when,.....
i. Conventional or chemical insecticides are defined as .....
j. The principal use of insect sex pheromones are,.....and.....

4. **Indicate whether the following statements are true (T) or false (F): (Total 16 Marks, 2 Marks each)**

a. Insect growth regulators adversely affect non-target species such as humans, birds, fish or other vertebrates.
b. Most insecticides in use today have a narrow spectrum of activity.
c. Insect pest that is accidentally introduced into a new geographic area without its associated natural enemies are referred to as exotics.
d. Conservation biological control is the practice of enhancing natural enemy efficacy through modification of the environment or of existing pesticide practices.
e. Mechanical controls include simple hand-picking and traps to disrupt pest growth and reproduction.
f. At high pest densities, parasitoids can suppress infestations to below economic thresholds.
g. Pheromones are environmentally friendly and non-toxic to humans and wildlife,
h. Classical biological control does not always work.

5. **Write a short assay on each of the following (Total 39 Marks):**

a. Importance of parasitoids in insect management. (6 Marks)
b. Methods of application of insect sex pheromones in pest management: (6 Marks)
c. Benefits and disadvantages of integrated pest management. (10 Marks)
d. Use of insect growth regulators in integrated pest management. (5 Marks)
e. Reduced risk pesticides. (6 Marks)
f. Factors that must be considered when determining the impact of insecticide applications on natural enemies. (6 Marks)

Good luck

Examiners	Prof. Dr. Amal Seif	Prof. Dr. Mohamed Soliman

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR SENIORS (FOURTH YEAR) STUDENTS OF CHEMISTRY AND ENEOMOLOGY			
	COURSE TITLE:	Insect transmission of plant diseases		COURSE CODE: EN 4258
DATE:	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS:50	TIME ALLOWED: 2 HOURS

Answer the following questions:

Notice! The examination consists of two pages.

1. **Choose from between the brackets the correct answer (Total 10 Marks, 1 Mark each):**
   a. The causative organism of bacterial soft rots *is (Erwinia carotovora---------- Erwinia amylovora---------- Pseudomonas savastanoi).*
   b. The vector of bacterial soft rot in potatoes is (the spotted cucumber beetle *Diabrotica undecimpunctata*----------the seed corn maggot, *Delia platura* ---- toothed flea beetle *Chaetocnema denticulate).*
   c. Witches' brooms symptoms of plant shoots and roots appear as a result of infection with (viruses----------fungi---------- mollicutes).
   d. The aster yellows *Phytoplasma* symptoms are characterized by (general yellowing----------cankers on stems ---------- wilts).
   e. Canker of apple, is transmitted by (the bark beetles, *Ips pini*----- the wooly aphid *Eriosoma lanigerum* ------the European elm bark beetle *Scolytus multistriatus*).
   f. Apple proliferation is caused by (*Spiroplasma*----- ----------*Phytoplasma*).
   g. Red ring of coconut palms is caused by the nematode (*Bursaphelenchus xylophilus* ----------*Bursaphelenchus cocophilus*).
   h. Sudden wilt of oil palms is caused by (flagellate protozoa of the genus *Phytomonas*----------*Spiroplasma*---------plant-pathogenic Gemini viruses).
   i. Potato virus Y is transmitted by (leafhoppers--------aphids----------white flies).
   j. Fig smuts is caused by (*Aspergillus niger*------ *Monilinia fructicola*----- *Botrytis cinerea*) while the gray mold of grapes is caused by (*Aspergillus niger*------ *Monilinia fructicola*---------- *Botrytis cinerea*).

2. **Correct the underlined words in the following statements: (Total 5 Marks, 1 Mark each)**
   a. Ergot of cereals caused by *Ovulina azaleae* develops in the flowers and produces spores that are contained in a sweet and sticky substance.
   b. All plant protozoan diseases invade the xylem, multiply, reaching populations of varying densities.
   c. Symptom of bacterial wilt of corn is pale red wavy streaks on the leaves.
   d. The mealy bug is the main vector of the tomato yellow leaf curl virus.
   e. In anther smut of carnations caused by the fungus *Ustilago violacea*, pollen and petals are replaced by the spores of the fungus.

3. **Fill in the blanks with the appropriate words (Total 5 Marks, 1 Mark each):**
   a. Insects facilitate the entry of plant pathogens by .....and help the survival of the pathogens by .....
   b. Bacterial wilt of cucurbits affects several crops such as.....
   c. The symptoms of fire blight of pears include.....
   d. The symptoms of citrus greening disease on citrus fruit are.....
   e. Powdery mildews on leaves is characterized by.....

4. **Indicate whether the following statements are true (T) or false (F) Total 10 Marks 1 Mark each:**
   a. Plant pathogenic bacteria which are produced within or between plant cells, escape to the surface of their host plants as droplets or masses of sticky exudates.
   b. The rice tungro spherical virus is transmitted by aphids.
   c. Stigmatomycosis or internal boll disease is caused by the fungus *Nematospora gossypol.*
   d. The sawyer beetle, *Monochamus* is the vector of red ring of coconut palms.
   e. Sudden wilt of oil palms caused by flagellate protozoa of the genus *Phytomonas* is transmitted from infected to healthy plants by stink bugs *Lincus* sp.
   f. Viruses transmitted by one type of vector are transmitted by any other type of vectors.
   g. Olive knot disease occurs as chlorosis developing on leaves, branches, roots and fruits.
   h. The insects most commonly involved in transmitting and facilitating infection of corn kernels by *Aspergillus* is the European corn borer, *Pyrausta nubilalis*.
   i. The vector of cucurbit yellow vine disease is the sharpshooter leafhoppers.
   j. Potato leaf roll virus is transmitted by aphids in a non-persistent manner.

5. **Give only one symptom that characterizes the following plant diseases (Total 8 Marks, 2 Marks each)**:
   a. Tomato big bud.
   b. Citrus stubborn disease.
   c. Potato virus Y.
   d. Powdery mildews on cops.

6. **Write short note on the symptoms and method of transmission of each of the following plant diseases: (Total 12 Marks, 3 Marks each)**

   a. Fire blight of pears and apples.
   b. Sooty molds.
   c. Tomato spotted wilt tospo virus on pepper.
   d. Pear decline.

Good Luck

Examiners	Prof. Dr. Amal Seif	Dr, Mervat Abou Seda