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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR JUNIORS (SECOND) STUDENTS OF CHEMISTRY/ENTOMOLOGY			
	COURSE TITLE:	Economic Entomology		COURSE CODE: EN2123
DATE 2/1	JANUARY, 2014	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Section: I

1. Correct the following statements: (10marks)

- Ichneumon wasp is predaceous in the larval stage.
- One of the insects that used in scientific research is thrips
- Insects that have provided basic pattern in many types of art are cockroaches and grasshoppers.
- The galls of insects contain certain valuable products that have been used in dental impressions and crayons.
- The stings of honey bee have value in the treatment of bone injuries.

2. Fill in the blanks with the appropriate words: (16marks)

- The substance that makes the cocoon of *Bombyx mori* is produced from.....
- Bee wax is the secretion from.....on the underside of the abdomen of honey bee.
- Shellac is used in.....
- Light producing insects are used as.....
- Cochineal dye is derived from.....
- Insect galls are.....
-is necessary for fertilization and seed production in all seed plant.
- is an extract from the bodies of blister beetles.

3. Choose from between the brackets the correct word: (10marks)

- (aphid lion-house fly-wasps) is among the best known predatores.
- Cochineal dye is produced from (scale insect-beetles-insect bug).
- The most valuable parasitoids are (ground beetle-aphids-tachinid flies).
- Among egg parasites are (acrididae-apidae-scelionidae).
- (lady bird-mole cricket-wood-boring insects) are important as insect scavengers.

- Write short notes on how honey bee produce and form honey. (1.5 marks).

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TANTA UNIVERSITY
FACULTY OF SCIENCE
ZOOLOGY DEPARTMENT

Final Examination For The 2nd Year Students Of Chemistry & Entomology

Course title:

Insect Ecology

Course code: EN 2244

Date: 8 / 6 / 2014

Term: Second

Degree: 150 marks

Time allowed: 2 hours

Part 1

I) Compare between each two of the following:

(18 marks)

Natality and Mortality, r - selected and k - selected species, population density and dispersion

II) Write short notes on:

(16 marks)

Exponential population growth and write its equation – types of predators .

III) Given that $K = 400$ and $r = 0.1$, what is N_3 , if $N_0 = 200$?

(5 marks)

IV) Choose the correct answer

(36 marks)

1- The logistic population growth model, $dN/dt = rN[(K - N)/K]$, describes a population's growth when an upper limit to growth is assumed. This upper limit to growth is known as the population's _____, and as N gets larger, dN/dt _____

a) biotic potential/increases

b) biotic potential/decreases

c) carrying capacity/increases

d) carrying capacity/decreases

2- Cannibalism means: a form of

a) intraspecific predation

b) interspecific predation

c) completion

3- When the resource is absent the predator population declines exponentially. This rate can be symbolized as

a) $dR / dt = r R$

b) $dP/dt = - dP$

c) $dp /dt = a p$

4- Population is limited in their number by food, space and other environmental conditions as in

a) Geometric growth

b) Exponential growth

c) Logistic growth

d) Constant growth

5- As populations grow individuals tend to compete for

a) Density

b) stress

c) resources

d) independence

6- Density-dependent factors include factors such as _____, while density-independent factors include factors such as _____.

a) temperature; floods

b) temperature; disease

c) disease; parasites

d) competition; storms

7- When the resource is absent the predator population

a) decline

b) increase

c) Constant

d) high

8- Movement of individuals into a country is

a) Emigration

b) population impact

c) population degeneration

d) immigration

9- When r is exactly zero, the population size is:

a) increase

b) decrease

c) stable and does not change

d) decline

10- A negative rate of growth means that:

a) the population is declining

b) the population is increasing

c) the population is logistic

d) zero population growth has been reached

11- If the distribution of individuals over an area is uniform

a) The variance may be much larger than the mean.

b) The variance will be quite small and smaller than the mean.

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c) The variance should be equal to the mean.

12- Cyclic and non periodic fluctuation in which:

- a) Amplitude is constant & time intervals of fluctuation vary.
- b) Amplitude varies but time intervals do not vary.
- c) Both the amplitude and time intervals of population vary.

Part II

First Question (19 marks)

1 Why are guilds useful? (6 Marks)

Write a short note on

- 2. The role of insects as decomposers. (6 Marks)
- 3. Simpson and Shannon wiener indices. (7 Marks)

Second Question (32 marks)

Complete the following sentences_(32 marks)

- 1) Ecosystem is.....
- 2) Potentially higher predation by insects in some tropical habitats result into
- 3) Insects' parasitoids appear to be or more..... in temperate than in the tropical food webs.
- 4) Lady beetles arewhen they eat aphids, butwhen hundreds collect inside your house.
- 5) The biosphere is.....
- 6) A biome is defined as.....while Ecotone is
- 7) Species richness is.....while diversity is.....
- 8) The boundary of a community is determined by.....
- 9) Habitat is a..... while niche is a.....
- 10) Primary consumer While secondary consumer always

Third Question (24 marks)

Chose the correct answer (24 marks)

- 1. If we remove one species from an ecosystem, there could be (slight - severe-moderate) consequences for that ecosystem.
- 2. Several populations living together make up (a community- a biome- organisms).
- 3. A group of the same organisms that are able to breed and produce fertile organisms called (population- species- community)
- 4. A place where an organism lives or can be found is the (niche- Habitat- biome).
- 5. The overriding factor that determines the general nature of an ecosystem is the (climate- temperature- moisture- Water).
- 6. Energy flows through ecosystems in (two directions- all directions- One direction).
- 7. The study of organisms and their interrelationships with their environment (A community- Ecology- Biotic factors).
- 8. A pyramid of number can be generated by counting all the organisms at the (first-different -second) feeding levels

Examiner: Prof.Dr/ Ensaf A .El – Gayar

Prof. Dr/ Lamiaa A. Sharra

With our best wishes

مراجعة

مراجعة الرياضيات

المستوى : الثانى (علوم الحاسب والرياضيات)

امتحان الفصل الدراسى الاول

جامعة طنطا

المادة : جبر مجرد

2015-2014

كلية العلوم

(MA2103)

الزمن : ساعتان

قسم الرياضيات

Answer the following questions .:

1- A) Let X be a nonempty set. $P(x)$ is the set of all subsets of X . If \cap is the intersection operation on $P(x)$, then discuss the algebraic properties of $(P(x), \cap)$. (15 marks).

B) Let R be the set of all real numbers ,

$F = \{ f \mid f: R \rightarrow R \}$ is the set of all mappings on R .

Define the additive operation on F as follows:

$$(f + g)(r) = f(r) + g(r).$$

Show that $(F, +)$ is an abelian group. (20 marks).

2- A) Let G be a group , $a \in G$. Define the centralizer of a , $C(a)$, and show that it forms a subgroup of G . (15 marks).

B) Let $\rho = (1 \ 2)(3 \ 4 \ 5) \in S_5$.

How many elements in S_5 are in the same cycle pattern as ρ ?

Write down these elements .

How many elements in $C(a)$? Write down these elements.

(25 marks).

Section:2

-1. Complete the missing parts: (each 30 marks: 3 each)

- 1- Species of insects producing the toxic substance were termed.....
- 2- In horse bots, the most injurious stage of the fly is.....
- 3- The term is applied to the injury caused by the leaf hopper
- 4- The gall-forming insects are present in orders ,.....and.....
- 5-are associated with sooty molds
- 6- Blackleg is a bacterial soft rot caused by
- 7- Virus diseases of alfalfa and clover are wide spread. They are responsible for reducingand yields.
- 8- Fire blight is a major disease of and
- 9- Potato leaf roll virus is transmitted by, necrosis in tuber increasestorage.
- 10-and are pathogen that can disseminated to the plants by insects.

2- Correct the following statements (10 marks: 2 each)

- 1- One person dies somewhere in the world every 10 seconds from filariasis.
- 2- In eastern Equine Encephalitis vaccine is available for humans, but not horses.
- 3- In the case of *Anopheles*, the eggs are stuck together in rafts up to 200.
- 4- Mosaic diseases of vine crops are caused by four different viruses.
- 5- Epidemic typhus is chiefly a disease of hot weather.

3-Choose from between the brackets the correct answers: (30marks)

- 1- The cotton leaf curl virus is transmitted by (White fly- Aphid- Scale insects)
- 2- Ergot of cereals is (bacterial- viral- fungal) disease.
- 3- Stinging hairs which break off at contact and inject irritating chemicals are common in (caterpillars- adults- pupae).
- 4- Female *Culex* is the vector of (Malaria- Filaria-Dengue) disease.
- 5- (Black fly- blue fly- white fly) is the vector of river blindness.

- 6- Plague is a bacterial disease caused by (*Onchocerca volvulus*-*Yersinia pestis*-*Wuchereria bancrofti*).
- 7- Gummosis of sugar cane is (bacterial- viral fungal) disease.
- 8- (Adults-nymphs-naiads) of Psyllids are toxicogenic.
- 9- The internal disease of cotton bolls known as (Stigmosis-Gummosis- Endosepsis).
- 10-(stable fly- screw fly-horse fly) lays eggs only about the edges of wounds on animals.

4-Discuss in details the following sentences:

- 1-How to control the mosquitoes both (adults &larvae). (2.5 marks).
- 2- Symptoms of anaphylaxis. (2.5 marks).

Section:3

1. Fill in the blanks with the appropriate words: (Total 20 Marks, 2 Marks each)

- a-Common examples of chewing insects that destroy vegetable crops areand.....
- b. The twig girdler gnaws a deep groove around the twigs ofand..... before.....
- c. The damage done by plant bugs varies with different species, owing to the most injurious bug in this group is
- d. The tropical leaf cutting ants cut leaves into fine pieces sometimes mixed with.....orand form a medium up on which.....are grown.
- e. Some insect may feed internally within the plant tissue, this group is calledthey entrance to the plant either by.....or.....
- f.cause abnormal growths on plants due to inject.....into the plant
- g. Insects that attack plants below the surface of the ground called.....such as.....and.....
- h. Cut worms injure plants in three major way.....and.....
- i. Seed feeders are found among larvae of

.....and.....

- j. Aphids secrete..... which provides excellent medium for the growth of fungus and..... preventof the plant.

2. Choose from between the brackets the correct answer:
(Total 10 Marks, 1 Mark each)

- a- White grubs are pests of (onion-tomatoes-potatoes)
- b- The straw berry weevil damage blossoms during (sap sucking-oviposition-nest making).
- c- Double cotton seeds are formed by the hibernating larvae of (the cotton leaf worm- the cotton boll weevil-the pink boll worm).
- d- Aphid is Common example of (leaf miners-piercing sucking insects – chewing insects) that destroy crops.
- e-The cottony cushion scale is a serious pest of (cotton- citrus- corn).
- f-The mole cricket is an example of the (sap suckers- leaf chewers- root chewers).
- g- Cut worms are serious pests because (they destroy more of the plant than they eat- they occur in outbreaks- they feed at night- all of the previous)
- h- Insect sometimes remove parts of plants for the construction of nests such as (cotton boll weevils-strawberry weevil -leaf cutting bee)
- i- Insects feed on the tissue between the upper and lower epidermis of leaf known as (leaf miners-sap suckers-seed feeders)
- j- Cerambycidae larvae bore in (corn ears- hard wood- cotton bolls).

3-Indicate whether the following statements are true or false
Total 2.5 Marks, 0.5 each)

- a- the plum curculio cuts a crescent-shaped incision beside the pit of fruits.
- b-The digestion of grasshoppers is complete.
- c-The tomato yellow leaf curl virus transmitted by fruit flies is the main limiting factor of tomato production in Egypt.
- d-The Bruchidae are serious pests of leguminous plant.

e-Because the restricted habitat of leaf miners they are all small insect, they tend to be flat and have pointed heads.

4-Give reasons of the following (Total 5 Marks, 2.5 each)

- 1-White flies can cause economic damage to plant in several ways.
- 2- It is difficult to detect the symptoms of red palm weevil

GOOD LUCK!

EXAMINERS	Dr. Iman El Hussieny	Dr. Mohammed Hassan	Dr. Noha Dabor
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January 2014
Time allowed: 2 hrs.
Course No. : CH 2111

Answer The Following Questions : (100 Marks)

i- KCN.

ii- Dil. NaOH.

iiii- NH_3 .

iv- Sodium ethoxide .

v- Alcoholic KOH.

b- - Describe the effect of the following: (6 Marks)

i- NaOH on α -, β - and γ - chlorobutyric acids .

ii- Heat on α - , β - and γ - hydroxybutyric acids .

iii- NaOH on an oil (saponification process).

2) An organic compound **A** discharge the colour of bromine, and on ozonolysis gave compound **B** ($\text{C}_3\text{H}_6\text{O}$) and compound **D** ($\text{C}_4\text{H}_8\text{O}$).

Compound **B** react with 2,4- DNP and reduce Fehling solutions but give no iodoform test; while compound **D** react with 2,4- DNP and can not reduce Fehling solutions but give iodoform test. What are **A** , **B** & **D** ? Illustrate your answer by equations. (12 Marks)

3) Carry out the following conversions: (18 Marks)

i- Methyl iodide \rightarrow ethylacetate .

ii- Carbon grafite \rightarrow acetaldehyde .

iii- Ethanol \rightarrow 2- butanone .

iv- n- Butyl alcohol \rightarrow sec- butyl alcohol .

4) a- Write all possible isomers of an organic compound with M.F. C_5H_{10} .

b- Describe by equations the reactions of ethyl alcohol with each of the following reagents : (10 Marks)

i- PCl_3 .

ii- Sodium metal .


iii- H_2O_2 .iv- Acetic acid (conc. H_2SO_4) .v- conc. H_2SO_4 (170°C).

5) Write the mechanism of the following reactions : (18 Marks)

$$\alpha\text{-Acetaldehyde} + \text{NaOH (dil.)} \rightarrow \text{---(heat)--} \rightarrow \text{---}$$
$$\text{b-Acetophenone} + \text{HCN} \rightarrow$$

c-2- Butanol + conc. H_2SO_4 (170°C) \rightarrow _____

$$\text{d-1-Butene} + \text{HBr (H}_2\text{O}_2) \rightarrow$$

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR SOPHOMORES (SECOND YEAR) STUDENTS OF ENTOMOLOGY			
	COURSE TITLE: Insect Taxonomy	COURSE CODE: 2240		
DATE: JUNE, 2014	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS	

Answer the following questions:

1. Correct the following statements: (Total 8 Marks)

- In Frenatae, the two wings on each side are united by a small lobe at the base of the front wing, which overlaps the base of the anterior edge of the hind wing (1.Mark)
- In Hymenoptera, the fore and hind wings are membranous and similar in size. (1.Mark)
- The styli of bristle tail are usually present on abdominal segment 3-6. (2.Marks)
- The insects of Mantodea are striking in either resemblance to twigs and leaves. (2.Marks)
- The paedogenetic larvae are belonging to suborder adephaga. (2.Marks)

2. A-Choose from between the brackets the correct answer (Total 20 Marks, 2 Marks each):


(Section A)

- (Tipulidae---- Simuliidae--- Syrphidae) have extremely long-legs which are easily broken off.
- (Calliphoridae -----Syrphidae----- Sarcophagidae) are brightly colored and resemble bees or wasps often with black and yellow strips along the abdomen.
- In (Symphyta----- Apocrita), the first abdominal segment is fused with the thorax and separated from the remainder of the abdomen by constriction; the petiole.
- In (Braconidae---Ichneumonidae) the abdomen is longer than the head and thorax combined while in (Braconidae---Ichneumonidae) the abdomen is about as long as the head and thorax combined.
- Bombinae adults have (black and yellow hairs that cover the entire body, often in bands----- have the dorsum of abdomen shiny and bare), while Xylocopinae adults have (black and yellow hairs that cover the entire body, often in bands-----have the dorsum of abdomen shiny and bare).
- In (Evaniidae--- Cynipidae ---Trichogrammatidae), the abdomen is very small and oval, attached by a slender petiole to the propodeum above the base of the hind coxa
- In (Sphingidae----- Saturniidae), the body is spindle-shaped, and tapering, and pointed.
- Calliphoridae are (metallic blue or green -----black with gray thoracic strips and black checker abdomen).
- In (Gastrophyllidae---- Tabanidae ----Bombyllidae), the wings at rest are held outstretched.
- In (Bombycidae---- Geometridae---- Noctuidae), the wings of males are marked with fine wavy lines while the females are wingless or have rudimentary wings.

(Section B)

3. **2-b. Identify the letter of the choice that completes the statement, then rewrite in your paper. Total 87 Marks, 3 Marks each):**

1. Cerci consists of eight segments in.....
a) Rock crawlers b) Gladiators c) Ear wigs d) web spinners
2. resemble complete metamorphosis in that the host nymph instar pupa like.
a) Cicadas b) Psylla c) Scale insects d) White flies
3. Larvae of family Lampyridae are known as
a) Glow worms b) Wire worms c) black worms d) water tiger
4. The second tarsal segment is narrow in.....
a) Forficulidae b) Labiduridae c) Tettigoniidae d) Gryllidae
5. In Dytiscidae the larvae are known as.....
a) Water tiger b) Wire worms c) Water lion d) Glow worms
6. The only insects that molts after they have attained functional wings.....
a) Fire flies b) Horse flies c) May flies d) Dragon flies
7. The snout beetles are belonging to family
a) Elateridae b) Curculionidae c) Dermistidae d) Meloidae
8. The ovipositor is usually laterally flattened and blade-like in
a) Gryllidae b) Gryllotalpidae c) Acrididae d) Tettigoniidae
9. Thoracic segments with ventral spiracles in.....
a) Mallophaga b) Hemiptera c) Zoraptera d) Anoplura
10. The front wing are provided with two double ladder in
a) Dermaptera b) Coleoptera c) Plecoptera d) Blattodea
11. Males are winged and the females are wingless in
a) Labiduridae b) Polyphagidae c) Embiidina d) both b &c
12. Wings with dark area on the costal margin known as pterostigma in
a) Odonata b) Plecoptera c) Orthoptera d) Phthiraptera
13. Insects of Auchenorrhyncha have antennae
a) Short-bristle like b) Long-filiform c) Moniliform d) Stylete
14. The life cycle of the periodical cicadas lastsyears
a) 11-17 b) 12-17 c) 13-17 d) 14-17
15.are beautiful green in color with golden eyes and oviposit eggs on stalks.
a) Myrmeleontidae b) Coccidae c) Cicadidae d) Chrysopidae

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	COURSE TITLE: Insect Taxonomy	COURSE CODE: 2240		
DATE: JUNE, 2014	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS	

Answer the following questions:

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- The styli of bristle tail are usually present on abdominal segment 3-6. (2.Marks)
- The insects of Mantodea are striking in either resemblance to twigs and leaves. (2.Marks)
- The paedogenetic larvae are belonging to suborder adepaga. (2.Marks)

2. A-Choose from between the brackets the correct answer (Total 20 Marks, 2 Marks each):

(Section A)

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