	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	EXAMINATION FOR SECOND LEVEL STUDENTS OF ZOOLOGY		
COURSE TITLE:	Biological Associations	COURSE CODE: ZO 2208	
DATE: 1, JUNE. 2015	SEMESTER: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions: (Exam in 2 pages)

[25 Marks]

Q1. A. Detect the ecological concept of amensalism and commensalism; give examples.

B. Write two different equations could describe the interaction between:

- Two species one benefit and the other is neutral.
- Two species both are positively effected.

C. Three mite species A, B and C grazed on three species of fungi a, b and c. analysis of gut contents of mites species showed an alternative pattern of different grazing pressure the data were tabulated in two way table as follow

		Mite		
Fungi species		A	B	C
	a	23	17	10
	b	10	6	34
	c	16	64	20

Do these data provide a sufficient evidence indicated that the mites and fungi species significantly associated?

Q2. Write short notes on the following

[20 marks]

- Principle of competitive exclusion.
- Write a simple mathematical model that would be used to predict the changes in the population number of a predator population and its resource population. Define all terms and variables. And its assumption
- Compare between the two types of amensalism: 1. competition and 2. Antibiosis
- Define each of the following terms:

intraspecific interactions - competition coefficients - Commensalism

Q3. A. Complete the following statements:

[20 Marks]

- The effect of the competitor on the population growth rate of species 1 and species 2 can be incorporated into the logistic equation, as $dN_1/dt = \dots\dots\dots$
And $dN_2/dt = \dots\dots\dots$
- The values α and β are called the $\dots\dots\dots$ and indicate the $\dots\dots\dots$
 $\dots\dots\dots$

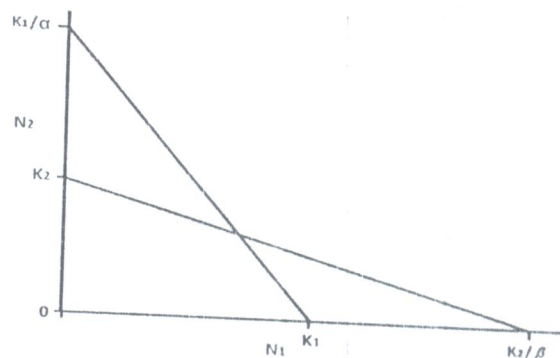
3. There are four possible out-comes of interspecific competition.

1. 2.
3. 4.

4. **intraspecific interactions** is interaction among.....
however interspecific interactions **is** interaction among

B. Here is a plot of the zero-growth isoclines of two competing species (A & B) when there is stable coexistence. According to the Lotka-Volterra explain when,

1. Species A will increase and species B will decrease.
2. Species B will increase and species A will decrease.
3. both will decrease,
4. both will increase



Q4. Give an account of the followings:

(35 marks)

a. Write down the meaning of each symbol in the next formulae.

$$H_{n+1} = k H_n f(H_n, P_n), \quad P_{n+1} = c H_n [1 - f(H_n, P_n)]$$

b. Some parasites modify host behavior to make transmission to other hosts. Give an example

c. Determine hosts, vector, disease and parasite in the followings:

Echinococcus granulosus normally passes to a dog through a goat or sheep. But it may come to a human being and remain, causing hydatidosis, and a dog has no chance to get it from a person.

d. Define only one of host- parasitoid models.

e. Determine major characteristics of insect parasitoids.

f. Give a scientific term for each of the followings:


1. Parasites live in cells within the host.
2. Occurs when the host has been parasitized by more than one species.
3. Visit their host only for a short period of time.
4. A single parasitoid feeds on a single host.
5. It steal food from other species found among birds, fish or insects.

With best wishes

Examiners:

Prof. Dr Abd El Naieem Al Assiuty

Dr. Hewaydah El Sayed Abou Shafey

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR 2ND LEVEL VERTEBRATE SPECIAL ZOOLOGY 2202			
	COURSE TITLE:	CHORDATES		COURSE CODE: 24092
DATE:	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Answer the following Questions:

PART (I)

(75 MARKS)

The first question (25 Marks)

Write short answers with drawing on the excretory system of amphioxus.

The Second question (45 Marks)

Write (✓) for the correct answer and (×) for the wrong one.

- 1- Phylum chordata is divided into four subphyla.
- 2- The end of the primary gill bar is forked.
- 3- Dog fish belongings to class elasmobranchi.
- 4- The heart of the frog consists of five chambers.
- 5- The air bladder of *Clarias lazera* is a physoclistous type.
- 6- The lateral line canal of actinopterygians is a sensory organ.
- 7- The urinogenital system of the male fish opens to out side by the urinogenital opening.
- 8- The left auricle of the frog receives the oxygenated blood.
- 9- The two lateral dorsal aorta of *Tilapia nilotica* form the circulus cephalicus.
- 10- The spiracle of dog fish is known as pseudobranch.
- 11- The gass gland is specialized for the resorption of gases from the lumen of the swim bladder.
- 12- The left Cuvierian duct of ammocoets larva is absent.
- 13- In amphioxus, the non-oxygenated blood is collected from the tail region by the posterior carotinel vein.
- 14- All the members of subclass Anura have tail.
- 15- The first arch of the visceral skeleton is called hyoid arch.

PART (II)**(75 MARKS)****The first question (20 Marks)****Put (✓) or (X)**

1. Some reptiles are endothermal vertebrates while others are ectothermal. ()
2. Reptiles and birds have three chambered heart with two auricles and one ventricle. ()
3. Skin of reptiles is highly moisture because of the glands it has. ()
4. Birds are warm blooded while mammals are cold blooded. ()
5. Bones of rabbits are spongy and pneumatic. ()
6. Dentition in mammals is as follow: monophyodont, heterodont and thecodont. ()
7. Toads are not amniotic animals. ()
8. During metamorphosis, young reptiles get resemble the adults. ()
9. Pigeon pancreas is a lobed structure. ()
10. Carnivorous birds have shorter small intestine than herbivorous birds. ()

The second question.....(10 Marks)**Write the scientific term**

1. A sheet of muscle and tendon separates the mammalian body cavity into two sections.
2. The glands which modified into mammary glands in mammals.
3. A part of a pigeon's stomach where the digestive enzyme is secreted.
4. The type of the limbs that are found in reptiles.
5. A structure in birds appeared from the fusion of the posterior caudal vertebrae.

The third Question.....(20 Marks)

Explain with a full labeled diagram how is the female urinogenital system of a bird adapted for flight?

The fourth Question.....(25 Marks)**Discuss with a full labeled diagrams**

1. Digestive system of the pigeon and its modification

With best wishes

EXAMINERS	PROF. SIHAM BAYOUMI SALEM	
	PROF. ABEER ALAM EL-DEEN	



Tanta University
Faculty of Science
Department of Zoology



EXAMINATION FOR JUNIORS (2nd LEVEL) STUDENTS, SPECIAL ZOOLOGY

Course title: Immunology	Student No.: 47	Course code: ZO2214
Date: 3, June, 2015	Total assessment marks: 100	Time allowed: 2 HOURS
Examiners: Prof. Mohamed Labib and Dr. Soha Gomaa		

Question 1: Fill in the blank with appropriate word(s)? (40 marks)

- 1- is protection against infection that relies on mechanisms that exist before infection.
- 2- and found in tears, saliva and nasal secretions can breakdown the cell wall of bacteria and destabilize bacterial membranes.
- 3- is the major humoral non-specific defense mechanism that leads to increased recruitment of phagocytic cells and lysis and opsonization of bacteria.
- 4- are proteins that can limit virus replication in cells, while breaks down the cell wall of bacteria.
- 5- Characteristics of adaptive immunity are.....
- 6- Primary lymphoid organs include.....andwhereas secondary lymphoid organs include
- 7-Granule-containing cells such as..... attack parasites, while..... release granules containing histamine and other allergy-related molecules.
- 8- Lymphoid cells includeand..... but myeloid cells include and
- 9-are responsible for fighting protozoan infection, whereas are responsible for fighting fungus infection and phagocytosis.
- 10- T cells displaying co-receptor CD8 are known as, but T cells displaying co-receptor CD4 are defined as
- 11- is mediated by lymphocytes and stimulated by exposure to infectious agents.
- 12- There are three type of defensive barriers.....
- 13- The normal flora of the skin and in the gastrointestinal tract can prevent the colonization of pathogenic bacteria by.....Or
- 14- Pro-inflammatory cytokines includewhile anti-inflammatory cytokines include.....
- 15-is one of humeral barriers that induces fever and the production of acute phase proteins.
- 16- are small proteins that produced by a broad range of immune and non immune cells and are important in cell signaling.
- 17-MHC means, its class I is expressed on, and its MHC class II is expressed on
- 18- Thymus is the largest and most active during, but starts in atrophy during
- 19-is site for Haematopoiesis & B cell maturation
- 20- secretes hormones thymopoietin and thymosins.
- 21- filter the lymphatic fluid to remove antigens and pathogens by the phagocytic macrophages
- 22- are collection of lymphocytes in the wall of the small intestine
- 23- Immunological function of spleen isbut hematopoietic function is.....
- 24- Polymorphonuclearleukocytes include, while Mononuclear Cells include

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Question 2: Choose the correct answer? (30 marks)

- 1- is a protein produced by platelets during coagulation can lyse many Gram positive bacteria
a. Interferon b. Lactoferrin c. Beta-Lysin
- 2- Innate immunity is
a. Genetically determined b. Not genetically determined c. Both of them
- 3- and are proteins which bind to iron and limit bacterial growth.
a. Defensins and lysozymes b. Interleukin-1 and interferons c. Lactoferrin and transferrin
- 4- secrete chemicals that destroy large parasites that are too big for any one of WBC to phagocytose
a. Basophils b. Neutrophil c. Eosinophils d. NK cells
- 5- Cytotoxic cells bind antigens presented on complex of virus-infected or tumor cells and kill them.
a. MHC II b. TCR c. BCR d. MHC I
- 6- Low pH of sweat and gastric secretions which prevent growth of bacteria are of
a. Chemical factors b. Mechanical factors c. Biological factors
- 7- inhibit the attachment and penetration of infectious agents
a. Chemical factors b. mechanical factors c. Biological factors
- 8- rises in response to allergies, parasitic infections and collagen diseases
a. NK cells b. Neutrophil c. Eosinophils d. Mast cells
- 9- are chiefly responsible for allergic and excrete histamine and heparin
a. Basophils b. Neutrophils c. Eosinophils d. Mast cells
- 10- are responsible for burst release of preformed cytokines, chemokines and histamine
a. Dendritic cells b. Neutrophils c. Eosinophils d. Mast cells
- 11- Signal 2 is generated when.....
a. B7.1 binds to CD4 b. B7.1 binds to CD28 c. B7.2 binds to CD28 d. MHC-a binds to CD28
- 12- recognize glycolipid antigen presented by a molecule called CD1d.
a. NKT cells b. Regulatory T cells c. Cytotoxic T cells d. Helper T cells
- 13- is any molecule that induces or elicits an immune response.
a. Pathogen b. Immunogen c. Hapten
- 14- TCR is expressed on:
a. All T Cells b. Only Macrophages c. All lymphocytes d. only T cells
- 15- Innate immune cells mostly recognize microbes and their products by:
a. TLRs b. TCR c. BCR d. TLRs and TCR
- 16- MHC class-I is expressed on:
a. All cells in the body b. B-cells, dendritic cells and macrophages c. All nucleated cells in the body
- 17- Both mast cells and basophils.....
a. Are phagocytic b. Circulate in the blood stream c. Are found primarily in lymph nodes
d. Have receptors for IgM antibodies. Release histamine
- 18- Macrophages
a. Circulate in the blood stream b. Produce nitric oxide c. Have receptors for IgM
d. Are the first leucocytes to arrive at the site of a skin infection e. Are the main immune cells for dealing with viruses
- 19- An antigen presented by MHC-I is recognized by
a. TCR complex on CD4 cells b. TCR complex on CD8 T cells c. BCR on B cells, d. CD3 on T cells

Question 3: Discuss three of following in details? (30 marks)

- 1- Innate and adaptive immune receptors
- 2- Structure and classes of antibody
- 3- Types of T cells
- 4- Professional and non-professional antigen-presenting cells
- 5- If you are one of T cells, which one do you want to be and why?

*Best wishes from
The Examiners*



Tanta University
Faculty of Science
Department of Zoology



EXAMINATION FOR JUNIORS (2nd LEVEL) STUDENTS, SPECIAL ZOOLOGY

Course title: Immunology	Student No.: 47	Course code: ZO2214
Date: 3, June, 2015	Total assessment marks: 100	Time allowed: 2 HOURS
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*Best wishes from
The Examiners*



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

FINAL EXAMINATION FOR SECOND LEVEL STUDENTS OF ZOOLOGY

COURSE TITLE:

COMMUNITY ECOLOGY

COURSE CODE: ZO 2212

DATE: 27, MAY. 2015

SEMESTER: SECOND

TOTAL ASSESSMENT MARKS: 100

TIME ALLOWED: 2 HOURS

Answer the following questions:

(Exam in 2 pages)

Q1. A. Put [T] for true statements and [F] for false sentence, change the false sentences so as to make them true. (10 marks)

1. Community is a set of species occurring in the same place. ()
2. Fundamental niche is the niche a species actually occupies in a particular () environment.
3. Allopatric species occur in different geographical regions, while sympatric () species occur in the same area.
4. Indicator species help in determine the types and numbers of other species in a () community thereby helping to sustain it.
5. Joseph Connell's famous experiments indicated that *Chthamalus* realized niche () was the same as its fundamental niche, while fundamental niche and realized niche for *Balanus* were not the same.
6. Productivity is the rate of production, while Production is the amount of () accumulated organic matters.
7. Macrophytes are is much more important than phytoplankton in the production () of basic food for the aquatic ecosystem.
8. The energy flow through a trophic level equals the total respiration at that level. ()
9. Disturbance of a community is usually followed by recovery, called ecological () succession.
10. Very little amount of energy is pass from DFC into GFC in comparison to the () amount of energy which flow from GFC to DFC.

B. Complete the following statements:

(15 marks)

1. In any food chain third level represented by
2. As a result of competition, species can response in two ways:
1. 2.
3. The ultimate disposition of energy in herbivores occurs by three routes:
1. 2. 3.
4. Classification of ecosystem services includes:
1. 2. 3. 4.
5. The product of photosynthesis is carbohydrate such as sugar (glucose) have several destinations:
1. 2. 3.
6. The detritus food chain starting from into and then to

Q2. Write short notes on the following (25 marks)

- Structure of community and the characteristic pattern that is determined its structure.
- Dominance in community.
- Components and functions of ecosystem.
- The four successive steps in the production process.
- Energy flow through ecosystem.

Q3. A. Explain structure of grazing food chain and draw a diagram showing inputs and losses of energy at each trophic level in grazing food chain. (10 marks)

B. Define each of the following terms: (15 marks)

1. Turnover rate & Turnover time
2. Native species & keystone species
3. Diversity index
4. Food chain & food web
5. Trophic level
6. Pyramid of biomass
7. Stratification in community

Q4. A. In a table compare between the following: (15 marks)

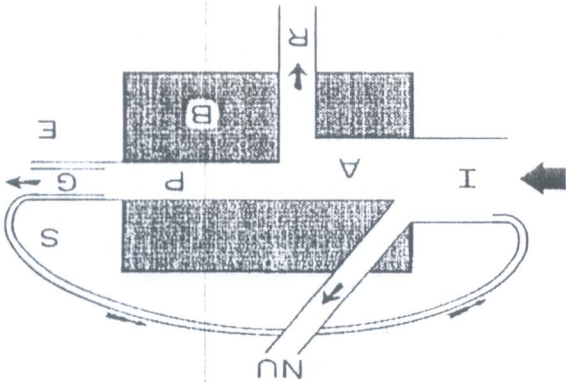
- 1- Grazing and detritus food chains.
- 2- Land and water ecosystems.
- 3- Primary succession and secondary successions.

B. Write short notes on: (6 marks)

- 1- The advantages and disadvantages of pyramid of energy.
- 2- Emergent properties of a community.

C. Complete the components for the following universal model of ecological energy flow.

I =
 NU =
 A =
 P =
 R =
 G =
 E =



End of Exam 😊 with best wishes 😊 please smile 😊

Examiners:

Prof. Dr. Mohamed Ahmed Khalil

Dr. Mohamed Fouad Ageba



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

STUDENTS OF SPECIAL ZOOLOGY 2ND LEVEL (FINAL EXAM.)

COURSE TITLE:

PROTOZOOLOGY

COURSE CODE: ZO2206

DATE: 30

MAY, 2015

TERM: SECOND

TOTAL ASSESSMENT MARKS: 150

TIME ALLOWED: 2 HOURS

Answer the followings: - (الامتحان في ثلاث ورقات)

First part (50 marks)

I- Complete:

(15 marks)

- 1- About 8-16 bundles of flagella called
- 2- Gametogony of *Gregarina rigida* takes place in.....
- 3-is the family of *Toxoplasma gondii*.
- 4- "An Eucoccidian oocyst is described as tetrasporous and octazoic" means.....
- 5- parasitic on the alimentary canal of grasshoppers.

II- Identify the correct choice and then rewrite it in your answer sheet: (10 n Marks)

1. Some Protozoa change their shape, other have a definite shape because

- a- They possess different types of organoids.
- b- Fresh water and intestinal living.
- c- They are cellular with one or more than one nuclei.
- d- Some of them possess plasma membrane and others possess pellicle.

2. *Toxoplasma gondii*

- a- This is a common coccidian intestinal parasite of cat.
- b- Over than 300 species of mammals, including man
- c- About 30 species of birds have been identified as paratenic hosts.
- d- a, b, c

3. Axiopoda

- a- They are straight and fine pseudopodia, not anastomizing.
- b- They contain a highly refractile axial rod composed of fine fibrils.
- c- They are characteristic of Heliozoa and many Acantharia.
- d- a, b, c

4. Asporous

- a- Oocyst with sporozoites but lacking sporocysts .
- b- Oocyst with sporozoites and sporocysts.
- c- Oocyst without sporozoites but having sporocysts .
- d- a, b, c

5. *Eimeria tenella*

- a- Parasitized chickens.
- b- Cause a serious disease known as cecal coccidiosis.
- c- The oocysts break out from their epithelial cells,
- d- a, b, c.

III- Give a short account with drawings as possible on the followings: (25 marks)

- 1- Three differences between Coccidians and Gregarines.
- 2- Transmission of *Toxoplasma gondii*.
- 3- Types of flagella
- 4- Life cycle of *Eimeria tenella*.
- 5- The epimerite.

Second part (50 marks)

I- Write on the followings:

(35 Marks, 7 mark each)

- a- The role of pseudopodia in Foraminifera.
- b- A protozoan of freshwater fishes.

- c- Structure of cnidocyst.
- d- Nutrition in Protozoa.
- e- An example of protozoan life cycle showing mutualism.

II- Complete the missing parts

(15 Marks)

- 1- The external skeleton of protozoa is classified according to its morphology into and
- 2- The internal continuous skeleton is found only in
- 3- The cytostome is
- 4- In Suctoria, trichocysts are located at the end of tentacles in bundles, which called
- 5- The structure of contractile vacuole of Paramecium includes and.....
- 6- Histomonas meleagridis is a parasite of and causes a disease known as.....
- 7- Nyctotherus cordiformis is a commensal organism found in the.....
- 8- The shell of Elphidium consists of with traces of other organic compounds, such as
- 9- The foraminiferan shell develops from a central chamber known as
- 10- The pusules are permanent organelles of

Third part (50 marks)

I- In the form of table compare between:

(20 marks)

L. donovani, *L. tropica* and *L. Braziliensis* referred to: (organ involved, disease, epidemiology and symptoms).

II- Fill in the blanks and rewrite (only) the answer in your sheet)

(20 Marks- 2 mark each)

- 1-.....is the division preceded by a period of nutrition and growth.
- 2-is a multiple fission takes place after a sexual process, giving rise to spores or naked sporozoites.
- 3- is the fusion between gametes of different species.
- 4-is a portions of the parent differentiate and develop into a new individuals.
- 5-is The daughter cells begin to form cell membrane and organelles within the cytoplasm of mother cell.
- 6- is the temporary union of two individuals, during which they exchange parts of their nuclear apparatus.
- 7-is a binary fission repeated over and over again, without a period of nutrition and growth.
- 8- the reproduction that meiosis takes place during the first division of zygote.
- 9- is the gametes which differ in size .
- 10- is the period of a type of sexual reproduction that the ectoplasm becoming sticky, that enable the ciliate to adhere.

III- Choose the correct answer and rewrite(only) the answer in your sheet (10Marks- 2 mark each)

1 - The reconstruction of the nuclear apparatus takes place in the ciliate individual without conjugation called:

- a- Syngamy.
- b- Autogamy.
- c- Conjugation.

2 - Elongated form with short flagellum that is free, the kinetoplast is located anterior to the nucleus with no undulating membrane called:

- a- Promastigote.
- b- Trypanomasidote.
- c- Choanomastigote.

3- The intermediate host of *Trypanosome cruzi* is:

- a- Sand fly.
- b- Kissing bug.
- c- Tse -tse fly.

4- Visceral Leishmaniasis caused by:


- a- *L. braziliensis*.
- b- *L. tropica*.
- c- *L. mexicana*

5- *T. brucei* caused:

- a- sleeping sickness.
- b- visceral leishmaniasis.
- c- Splenomegaly.

Good Luck

Prof. Dr. Saeed M. Nour El Dein Dr. Hewaydah E. A. Shafey Dr. Samar F. Haraas Dr. Lamlaa I. Bakr

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR SOPHOMORES (SECOND YEAR) STUDENTS OF ENTOMOLOGY			
	COURSE TITLE:	Insect Taxonomy	COURSE CODE: 2240	
DATE: 3	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Answer the following questions:

1. Correct the following statements: (Total 10 Marks, 2 marks each)

- In Thysanura the compound eyes are large and tarsi are 3 segments. (2.Marks)
- Bombycidae have strong wide wings with eye- spot near the center of each wing. (2.Marks)
- In Cyclorhapha adults emerge from a T-shaped opening in one end. (2.Marks)
- The paedogenetic larvae are belonging to suborder Adephaga. (2.Marks)
- Cerci long and consists of 8 segments in Mantophasmatodea. (2.Marks)

**2. Identify the letter of the choice that completes the statement, then rewrite in your paper.
Total 120 Marks, 3 Marks each):**

- Adults of Plecoptera are.....
a) weak fliers b) strong fliers c) medium fliers d) wingless
- The tarsal formula is (5-5-4) in.....
a) Darkling beetles b) Skin beetles c) click beetles d) Scarab beetles
- Tiger beetles are belonging to family.....
a) Staphylinidae b) Scarabaeidae c) Cicindelidae d) Elateridae
- Trochanter of ichneumon wasps consists of Segments
a) One b) two c) three d) four
- The largest cockroaches are belonging to
a) Polyphagidae b) Blaberidae c) Blattidae d) Blattellidae
- The body of is spindle-shaped, tapering and pointed.
a) Sphingidae b) Papilionidae c) Pieridae d) Bombycidae
- Order contains the longest insects which may reach a length of 300mm
a) Orthoptera b) Embiidina c) Diptera d) Phasmatodea
- are easily recognized by their shield-like shaped.
a) stink bug b) bed bug c) seed bug d) assassin bug
-are slow moving and are able to regenerate the lost legs.
a) may flies b) stone flies c) walking leaves d) walking sticks

10. Members of Family: Tettigonidae have ovipositor
a) needle like b) blade like c) sickle like d) saw like
11. Naiads of provided with gills on the thorax and base of the legs
a) Zygoptera b) Anisoptera c) Plecoptera d) Ephemeroptera
12. The life cycle of the periodical cicadas lasts years
a) 11-17 b) 12-17 c) 13-17 d) 14-17
13. have extremely long legs which are easily broken off.
a) Tipulidae b) Simuliidae c) Syrphidae d) Psycodidae
14. contain both genal and pronotal combs.
a) *Ctenocephalus felis* b) *Ctenocephalus canis* c) both a&b d) neither a&b.
15. The larvae have two pairs of prolegs at the posterior end of the body and none in the middle in
a) Noctuidae b) Geometridae c) Tineidae d) Gelechiidae
16. The elytra are soft and flexible in
a) blister beetles b) click beetles c) ground beetles d) fire flies
17. Tail like prolongation on the hind wings characterize
a) Sphingidae b) Papilionidae c) Pieridae d) Bombycidae
18. Is a dipteran which has a very long proboscis
a) Tephritidae b) Tachinidae c) Oestridae d) Bombyliidae
19. The beetles that have very long antennae are belonging to
a) Buprestidae b) Cerambycidae c) Scarabaeidae d) Lampyridae
20. In tribe Gymnocerata the antennae are
a) long b) short c) medium d) absent
21. The members of tribe Sternorrhyncha are
a) active b) inactive c) quite sedentary d) both b & c
22. In Tettigonidae the number of tarsal segments are
a) one b) two c) three d) four
23. In order: Anoplura the tarsi
a) one b) two c) three d) four
24. Leafhopper insects produce
a) Strong sound b) weak sound c) Click sound d) No sound
25. reproduce both sexually and parthenogenitically
a) Aphididae b) Aleyrodidae c) Psyllidae d) Coccidae

26.have a great many cross veins and extra branches of the longitudinal veins
 a) Orthoptera b) Coleoptera c) Neuroptera d) Lepidoptera
27.able to click and jump, with flexible union of the prothorax and mesothorax
 a) Buprestidae b) Cerambycidae c) Scarabaeidae d) Elateridae
28. Thoracic segments with dorsal spiracles in.....
 a) Mallophaga b) Hemiptera c) Zoraptera d) Anoplura
29. Eyes are contiguous in males and separated in females of
 a) black fly b) house fly c) blow fly d) horse fly
30. Male genitalia are bulbous, recurved and look like the sting of scorpion in.....
 a) Mecoptera b) Zoraptera c) Homoptera d) Plecoptera
31. The front wings of male are reduced to rod-like structure in
 a) Diptera b) Thysanoptera c) Strepsiptera d) Phthiraptera
32. Jewel beetles are belonging to family
 a) Buprestidae b) Cerambycidae c) Scarabaeidae d) Elateridae
33.are beautiful green in color with golden eyes and oviposit eggs on stalks.
 a) Myrmeleontidae b) Coccidae c) Cicadidae d) Chrysopidae
34.are moderate to large in size with metallic blue or green body.
 a) Sarcophagidae b) Tabanidae c) Calliphoridae d) Muscidae
35. The mouthparts of the adult are vestigial in
 a) Web spinners b) Mole crickets c) Aphids d) may fly
36. Mosquitoes, black flies, and sand flies are belonging to suborder.....
 a) Brachycera b) Cyclorrhapha c) Nematocera d) Adephaga
37.are Lepidoptera in that they have well developed large and functional mandibles
 a) Pyralidae b) Tineidae c) Geometridae d) Micropterygidae
38. Larvae of family Lampyridae are known as
 a) Glow worms b) Wire worms c) black worms d) water tiger
39. The body is broadly oval and the claws of the middle and hind legs are very large in
 a) *Pediculus humanus* b) *Haematopinus tuberculatus* c) *Pthirus pubis* d) *Columbicola columbae*
40. body flattened laterally, and is provided with many backward projecting spines in
 a) Lepidoptera b) Siphonaptera c) Diptera d) Neuroptera

3-Indicate whether the following statements are true (T) or false (F) and correct the false (Total 10 Marks, 2 marks each):


- a. There are two longitudinal strips on the pronotum of *Blattella germanica* (2 Marks)
- b. Cerci are absent in all members of order Coleoptera (2 Marks)
- c. The female of the *Tunga penetrans* after mating burrows into the skin of man (2 Marks)
- d. Fertilized eggs develop into males, and unfertilized eggs usually develop into females in Hymenoptera. (2 Marks)
- e. The second tarsal segment is wide in Labiduridae (2 Marks)

3. Fill in the blanks with the appropriate words (Total 10 Marks, 2 marks each)

- a. Order Orthoptera is divided into two suborders....., and..... (2 Marks)
- b. Giant water bugs are belonging to family (2 Marks)
- c. Types of antennae of Elateridae are.....and (2 Marks)
- d. The suborder Frenatae divided into two divisions: and (2 Marks)
- e. Order Odonata is divided into two suborders and (2 Marks)

Good Luck

EXAMINERS	PROF. DR. AMAL SEIF	PROF. Dr. MOHAMED SOLIMAN	DR. MOHAMMED HASSAN
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	Tanta University- Faculty Of Science Department of Zoology			
	Examination Paper for sophomores (Second Level) students of Special Zoology			
	Course Title:	Invertebrate Biology بيولوجيا لافقاريات		Course Code: ZO 2204
Date:	June, 2015	Term: Second	Marks: 150	Time Allowed: 2 Hours

First Question (35 Marks)

A- Multiple choices (MCQ) : Choose the correct answer. (6 Marks, 2 marks for each one).

1- Medical leech *Hirudo medicinalis* lives in _____ habitats.

() (A) freshwater (B) marine (C) fields & gardens (D) moist soil

2- Blood system is described as closed circulatory system in:

() (A) earthworm *Allolobophora* (B) sandworm *Nereis*

(C) medical leech *Hirudo medicinalis* (D) Both A & B

3- Reproductive system of the earthworm *Allolobophora* is:

() (A) monoecious (B) dioecious (C) epitoky (D) none of previous

B-True or False: Which of the following statement is True or False? Correct False answers. (6 marks, 2 marks for each one).

() 1 -. Earthworm *Allolobophora* has 6 pairs of transverse contractile blood vessels called spermathecae.

() 2- Development of the sandworm *Nereis* is direct without trocophore larva. thus, belong to group Ecdysozoa.

() 3-. Coelom of medical leech *Hirudo medicinalis* is enterocoele and develops through a process called enterocoely.

C- Fill in the blank: (6 marks, 2 marks for each one).

1- Clitellum of adult earthworm *Allolobophora* secretes _____ for _____.

2- There are three types of locomotion of the sandworm *Nereis* namely:

_____.

3- Nervous system of the medical leech *Hirudo medicinalis* consists of

_____.

D- 1- In a form of table shows the differences between Nereis and Heteronereis forms.

2- Make a fully labeled drawing of structure of chaeta (seta) projecting from body wall of earthworm *Allolobophora* . **(9 marks).**

E- Mention main functions of:

1- nephridia - segmental papillae - botryoidal tissue – jaws - of the medical leech *Hirudo medicinalis*

2- calciferous glands – crop - gizzard- typhlosome - of earthworm *Allolobophora*.

(8marks).

أنظر بقية الأسئلة بالخلف

Second question (40 marks)

1- Put true or false and correct the false one: (7.5 marks)

- 1- Ehippia of *Daphnia* sp are produced during favourable conditions.
- 2- In Arthropoda muscles arranged as antagonistic groups of flexors and extensors and share in the formation of body wall.
- 3- Arthrobranchiae in prawn when a gill is attached to the lateral walls of the thoracic segments.
- 4- Arthropods with cilia and intersegmental septa.
- 5- The millipede has no venomous legs.

2- Choose the correct answer: (7.5 Marks)

A- Which of the following mysis Zoea larvae are characterized

- a - Carapace covering completely the thorax (thoracic terga completely covered). Antennal exopod unsegmented or segmental at tip only.
- b- Without well-development pleopods. Swimming by maxilliped exopods.
- c- With at least one pair of well - developed pleopods. Swimming by swimming legs
- d. Shrimp-like shape. Pereipods with well developed exopods.

B- In diplopod animals:

- a- Males have gonopods on the third abdominal segment.
- b- No gonopods.
- c- Males have gonopods on the last abdominal segment.
- d- Males have gonopods on the first abdominal segment.

C- In *Ixodes* sp:

- a- Spiracles lie behind the first pair of walking legs
- b- Spiracles lie behind the third pair of walking legs
- c- Spiracles lie behind the fourth pair of walking legs
- d- Spiracles lie behind the second pair of walking legs

D- Complete metamorphosis means:

- a- Eggs hatch to larvae, nymph then young animal.
- b- Eggs hatch to different types of larvae then metamorphosed to young animals.
- c- Eggs hatch to nymph, larvae then young animal.
- d- Eggs hatch direct to young animal.

E- Carapace present in the following except:

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E- Carapace present in the following except:

- 4) Genital bursae which found inhave two functions,.....
and
- 5) The skeleton of sea cucumber is in origin and consists of
.....embedded in the
- 6) Sea cucumber are dried in the sun and sold as for
use in
- C) Mention three points only to show the adaptation of sea-star to its habitat.
.....(6 marks).
- D) Show by only full labeled drawings:(6 marks).
- The structure of water-vascular system of sea-star.

Best Wishes & Good Luck

Examiners	1- Prof. Dr. Fayez Shoukr	2- Prof. Dr. Fadia Heba
	3-Prof.Dr. El-Sayed T.Rizk	4- Prof. Dr. Samia Eesa



Tanta University
Faculty of Science
Department of Zoology



**EXAMINATION FOR JUNIORS (2nd LEVEL) STUDENTS,
SPECIAL ZOOLOGY**

Course title: <i>Medically important animals and human health</i>	Student No.: 47	Course code: Z02216
Date: 25, May, 2015	Total assessment marks: 100	Time allowed: 2 HOURS
Examiners: Prof. Mohamed Basiony and Dr. Soha Gomaa		

Question 1 (40 marks)

- Mention the main famous families of venomous snakes, what is the nature of their toxin to affect the victim and how they deliver it. Write what do you know about dosing and precautions of snake venoms?
- What are the main characters of scorpion toxicity and venomous fish?
- What is the genotoxicity, give the difference between genotoxicity and mutagenicity with reference to the most common mutation occurs due to toxicity?
- Give account on the sting of ants, wasps and bees explaining their effect on human being?

Question 2 (40 marks)

A- Fill in the blank with appropriate word(s)?

- Contortrostatin (CN) is.....rather than.....
-is an absorbed or ingested toxin, while.....is an injected toxin
- Rattlesnake produces toxins in.....then injects toxins through hollow.....
- The main types of venom are 1-.....2-..... 3- 4-.....
- Myotoxic venom contains peptides that destroy the protein in the muscle fibers resulting in
- ACTX-6 protein is a venom cytotoxin that can induce.....in cancer cells.
-is made by injecting the venom from a variety of different snake species into an animal to develop the anti-venom, while.....is made by injecting the venom of a specific species of snake into an animal to develop the anti-venom
- The main biological functions of the animal venoms are 1-.....2-.....3.....4-.....
- Animal venoms, such that of snakes are complex mixtures of bioactive agents which may beor.....
- Neurotoxins components of venom can be categorized physiologically intoor.....
- Haemotoxins components of venom can be categorized physiologically into.....or.....
-interrupt the ability of ACh to trigger muscle cell activation.
-is a neurotoxins that directly target sites on the nerve cell.
-neurotoxins that target AChR to prevent its binding to ACh.
-presynaptic neurotoxins which has toxic effect on the nerve cell
-is a postsynaptic neurotoxins which has toxic effect on the nerve cell
- Venom haemotoxins interfere with some of the specific biochemical reactions within coagulation pathways result in the production of both.....and.....
- Venom procoagulants, such as.....converts prothrombin to thrombin leading to a depletion of available fibrinogen.
- Venom anticoagulants, such as....., bind to Factor IX and Factor X to produce anticoagulation effect without concurrent fibrinolysis.
- Venom myotoxins induce.....involving disruption of the plasma membrane and disorganization of the myofibrils, can result in.....
- Snake venom contains two cytolytic proteins called.....and.....which have the property of destroying the cancer cells selectively.
- The venom discharge of cnidarian animals lead to Type I hypersensitivity reaction, including.....
-is the maintaining of oral tissues and structures in healthy state.

B- Choose the correct answer? (10 marks)

1.is an absorbed or an ingested toxin
a- Poison b- Venom
2.is an injected toxin.
a- Poison b- Venom
3. Sonoran Desert Toad is a.....animal species
a- Venomous b- poisonous c- harmless
4.causes veins compression very tightly up against the skin, resulting in loss of blood circulation
a- Cytotoxic venom b- Haemotoxic venom c- Myotoxic venom c- Neurotoxic venom
5.degrades Glycosaminoglycans (GAGS) and causes other enzymes in the venom to be absorbed more rapidly into human tissues
a- Cholinesterase b- L-amino acid oxidase c- Hyaluronidase d- Phosphodiesterase
6. Taipoxin is a.....
a- Postsynaptic neurotoxic venom component b- Presynaptic neurotoxic venom component
7. Taipan toxin1 is a.....
a- Postsynaptic neurotoxic venom component b- Presynaptic neurotoxic venom component
8. Oscutarin is a venomous component that has.....feature.
a- Anticoagulants b- D-Platelet toxins c- Procoagulants d- Plasminogen inhibitor
9. Phospholipases A2 (PLA2) is a venomous component that has.....feature.
a- Anticoagulants b- Procoagulants c- Plasminogen inhibitor
10. Contortrostatin (CN), a novel protein isolated from the animal venom, is a.....
a- Cytostatic b- Cytotoxic

C-Discuss the following in details? (10 marks)

1. In the form of table, discuss the medically important venomous cnidarians: biology, prevention, first aid, and clinical management.
2. Anti-cancer properties of venom.

Best wishes from

The Examiners