

8- A person with type B blood group has B antigens on RBCs and.....

- a)- Anti-A Abs in the plasma
- b)- both types of Abs in the plasma
- c)- Anti-B Abs in the plasma
- d)- No Abs in the plasma

9- Pernicious anemia is caused by loss of:

- a)- iron
- b)- vitamin A
- c)- vitamin c
- d)- gastric parietal cells

10- Hodgkin disease is a malignancy of:

- a)- NK cells
- b)- B lymphocytes
- c)- dendritic cells
- d)- mast cells

Q7: Define the following: (10 marks)

- 1- Polycythemia
- 2- Hemostasis
- 3- Bleeding time
- 4- Fibrinolysis
- 5- Fanconi anemia

Q4: Write in details about organ transplantation, types and associated complications. (10 marks)

Q5: Write briefly in the following: (10 marks)

- 1- Benign WBCs disorders
- 2- Disorders and disease of blood coagulation
- 3- Cells of immune cells
- 4- Hemolytic anemia

GOOD LUCK

Dr. Leila Hassan
Lecturer of Immunology

20- Eagles laying the largest eggs of any living land animal.

21-Anteater lack nipples have external ears, and embryos develop in shelled eggs.

22-Moles and shrews are largest groups of reptiles because of similarities in tooth structure (pointy), belong to the order Chiropter.

23-Hagfishes exhibit the latent capacity to calcify their endoskeleton.

24-Penguins have lost use of their wings and depend entirely on running for locomotion.

25-The modern chondrichthyans consist of three groups, sharks, rays and the chimaeras.

11-Most taxonomists treat all living amphibians as members of the Lissamphibia which arose within the Lepospondyls radiation.

12- Placoderms possess true centra, neural and hemal arches were often fused to form the synsacrum.

13- The nutritional and respiratory support of the embryo is found to varying degrees in some reptiles, fishes, and even a few amphibians.

14- Lizards have a distinctive ear region wherein the eardrum is supported by the squamosal and retroarticular process.

15-In most rays, the pointed teeth are backed by rows of replacement teeth, each ready to rotate into position to take the place of a broken or lost functional tooth.

16-Bony fishes consist of two groups; actinopterygians and sarcopterygians.

17-Frog and toad have no "eardrum," or tympanum.

18-Lizards and crocodilians possess short the external auditory meatus with pinna.

19-a clade describe the closest relatives of an organism in phylogenetic tree.

c) Anomalous characteristic

Question II: Choose whether the statement is true or false and correct it:

- 1- Emus are birds with talons, specialized feet used to stun or grasp prey.
- 2- The lizards have movable eyelids and external auditory meatus while snakes lack both structures.
- 3- Palaeognathae contains extant branches of flightless birds
- 4- The weakness of theory the origin of chordates from arthropod is due to the embryonic differences.
- 5- The mammals include two groups with powered flight.
- 6- Phylogenetically basal of gnathostomes are the acanthodians.
- 7- Osteichthyans are only fishes to contain bone in their skeletons.
- 8- Absent true centra helps distinguish placoderms as a clade.
- 9- Monophyletic taxon is defined as one that includes the most recent common ancestor of a group of organisms.
- 10- The Perissodactyla includes horses, rhinoceroses, tapirs and pigs.

c) Shiny feathers

18- The only of animals that deployed only cilia to produce the food-bearing current that entered the pharynx.

- a) Hagfishes and lampreys b) Amphioxus c) Only Hagfish

19- Which of the following is not a characteristic of an organism belonging to the Hexanchiformes?

- a) Conical snout with saw-like teeth
b) Have six gill slits
c) The eyes have no nictitating membrane

20- Which of the following is a unique characteristic that distinguishes a psittaciformes from other birds?

- a) Sharp claws
b) Shiny feathers
c) Zygodactyl feet

21- Which of the following is a unique characteristic that distinguishes tuatara from other reptilian?

- a) Have primitive eosuchian skull lack temporal bars
b) Have primitive eosuchian skull with complete temporal bars
c) Smooth body and no trace of limbs or girdles

22-The group of species united by morphological or physiological traits is considered.....

- a) Grade b) clade c) sister group

23- Theory of the origin of Chordates from Echinodermata based on

- a) Homoplasy b) Homology c) Analogy

24- Organisms in the Kingdom Animalia are.....

- a) Multicellular and heterotrophic
b) Multicellular and autotrophic
c) Unicellular and heterotrophic

25- When two organisms have the same characteristic (morphological and embryological) because they are related, this is an example of a

- a) Homologous characteristic
b) Analogous characteristic

9- Which of the following is a definition of the tongue-less amphibian group?

- a) Apoda b) Proanura c) Anura

10- Which of the following features apply to birds?

- a) Lack temporal fenestrae and breathing by help air sacs
b) Endothermic and have pair temporal fenestrae
c) Endothermic, have developed sternum, and pair of ovary

11- Which level of classification could contain all eukaryotic organisms?

- a) Domain b) Kingdom c) Species

12- is aquatic placental marine mammals, with smooth - streamlined body and have plates of baleen.

- a) Bats b) Rodents c) Whales

13- The sarcopterygians were known once as.....

- a) Choanichthyes b) Chondrichthyans c) None of them

14- Which of the following group comprises the vast majority of bony fishes?

- a) Neopterygii b) Sarcopterygians c) Actinopterygii

15- Which one of the following is not a rule while writing the name of an organism, according to the principles of biological nomenclature?

- a) The name of the phylum should begin with a capital letter
b) The name of the class should be italicized.
c) The name of the species should begin with a small letter and italicized

16- Which of the following features apply to crocodiles?

- a) Lack temporal fenestrae and quadrate bone is immovable
b) Endothermic and have pair temporal fenestrae
c) ectothermic, have developed sternum, and immovable quadrate

17- Which of the following is a unique characteristic that distinguishes a Columbiformes from other predator's birds?

- a) The crop secretes a nutritional fluid called "milk"
b) Sharp claws



Question I: choose the correct answer

- 1- Which of the following groups would contain the largest number of organisms?
a) Class b) Species c) Kingdom
- 2- Fish that have saw-like teeth or rostrums are part of the group rays, these rays are an example of a
a) Rhinopristiformes b) Rajiformes c) Torpediniformes
- 3- The current classification system was devised by
a) Aristotle b) Linnaeus c) Darwin
- 4- The placoderms are considered..... group
a) monophyletic b) Paraphyletic c) Polyphyletic
- 5- Which of the following is NOT a Sirenian primate?
a) Elephant b) Manatee c) Dugong
- 6- Which pair of taxonomic terms or ranks are requirements for constructing a Linnaean name?
a) Class and phylum b) family and subfamily c) Genus and Species
- 7- What was the theory of chordates from Annelids and Arthropods based on?
a) Their phylogenetic relationships
b) Their similarities in gross brain regionalization
c) None of above
- 8- Which of the following statements about taxonomic levels is correct?
a) Cyclostomes are rank as clade
b) Marsupials are rank as clade
c) All of above

b) Data analysis and data analysis exploratory (8 marks)

The Second Question (35 marks)

1- Compare between: a) Inverse distance weighted (IDW) and Spline method (10 mark)

b) Descriptive Statistics and Inferential Statistics (5 marks)

Inverse Distance Weighted (IDW)	Spline Method

Descriptive Statistics	Inferential Statistics



Final Exam of
Statistical Methods in Geophysics
(G456)

Jan. 2025

Time: 2 Hours

" الاجابه في نفس الورقه "

Answer the following Question

The First Question

(15 mark)

Complete the missing answer

- 1- Typical questions of interest to a geostatistical are:
 - a)
 - b)
 - c)
 - d)
- 2- The minimum sample size is
- 3- Representative Sample define as
.....
.....
- 4- The simple random sample of objects should then possess the following qualities:
 - a).....
 - b).....
 - c).....
 - d).....
- 5- Discrete Variable is
.....
- 6- A population consists of
.....

.....
.....
4. Milky disease.
.....
.....

5. Paris green.
.....
.....

Fourth Question: give the reasons of five only of the following. (5marks)

- 1- The male sex pheromone is of lesser value than the female sex pheromone in insect pest control.
- 2- PTG are lost during the early part of adult and CA remain.
- 3- Tillage tends to reduce soil insects.
- 4- If the antifeedant is placed within the mouth, feeding is not prevented.
- 5- Chemical compounds acting as sex pheromones are very much fewer than the number of insect species, however, the reproductive isolation of species is found in nature.
- 6- Growing resistant plant varieties.

Fifth Question: Write short notes about five parts only of the following: (5 marks)

- 1- What causes pest outbreak?
- 2- The theory of positive anemotaxis.
- 3- Desirable traits in good repellent.
- 4- The pheromone dispensers.
- 5- Disadvantages of hormonal control.
- 6- The natural control.

Sixth Question: Write the mode of action for five only of the following. (5marks)

- 1- Nicotine.
- 2- Chitin synthesis inhibitor.
- 3- Carbamates.
- 4- Aggregation pheromone.
- 5- NPV
- 6- Aluminum phosphide

16. Aphrodisiacs are usually produced by female but could be produced by either sex. ()
17. The most common type of sensilla in Hymenoptera is placodea. ()
18. There is every possibility of one species getting sexually aroused by pheromone of another. ()
19. Insects would be able to develop resistance against synthetic hormonal insecticides. ()
20. Insects having gut pH lower than 9, the bacterial endospore fail to germinate. ()

Third Question: A: Write the suitable terminology of the following sentences. (5 Marks)

1. The control goes on without the intervention of man. (.....)
2. Pathogen infecting large populations of insects. (.....)
3. The swelling structure of the conidium germinate short tube. (.....)
4. The electrophysiological technique can be used to study the response elicited by a pheromone. (.....)
5. Are small paired bodies situated immediately behind the brain which store the hormone synthesized by NSC. (.....)
6. Farm practices that man has learnt by his long experience as a farmer in order to keep the pest populations down. (.....)
7. Adisease easily transferred from infected to non-infected individuals by direct contact. (.....)
8. Chemicals that prevent insect damage to plants or animals by rendering them unpalatable or offensive. (.....)
9. This is the condition when the pathogen multiplies in the blood and tissues throughout the body cavity. (.....)
10. Dissemination of toxins in blood. (.....)

B: Define the following terminology: (5 marks)

1. The diatomaceous earth.
.....
.....
2. DD-136.
.....
.....
3. Diplokaryon in protozoa.
.....

12. Male moths attracted to a trap baited with the female sex pheromone from distance as long as.....
- a) One mile or more b) Two miles or more
c) Three miles or more d) Four miles or more
13. Sugar solution + insecticides use as a poison baits for
- a) Biting insects b) Sucking insects c) Subterranean insects d) Cockroaches
14. In the absence of.....the pupa turned to adult, during development of insects
- a) BH b) MH c) JH d) AH
15. Chemicals that if released by one organism to induce response in an individual of another species is advantageous to the recipient.
- a) Allomones b) Kairomones c) Allomones-Kairomones d) Alarm pheromones

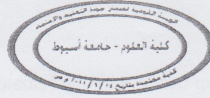
Second Question: Put (True) or (False) in front of the following substances:

(10 Marks)

1. Systemic poisons are most effective on piercing and sucking insects. ()
2. Insect growth regulators are very safe and fast acting. ()
3. Insecticidal soap cause strips cuticle and dehydrates insect. ()
4. Organophosphates are stable in light. ()
5. There is a link between the use of rotenone-paraquat complex and Parkinson's disease. ()
6. Aluminum- phosphide works by interfering with electron transport chain in mitochondria. ()
7. In the Cyclorrhaphous larvae of Diptera, the CC, CA, and PTG are all fused in a single structure called Weismann's ring. ()
8. α -ecdysone is the true MH. ()
9. Fungi need a high degree of atmospheric humidity to germinate. ()
10. The primer pheromones operate through olfactory sensilla. ()
11. Yellow color in particular is used to repel insects. ()
12. Natural food lures stimulate gustatory receptors. ()
13. The virulence of pathogen cannot be artificially enhanced. ()
14. Young bacteria (vegetative cell) can be used in controlling insect's larvae. ()
15. The protozoa bread only in vivo, this is the most disadvantages in using it in pest control. ()



Assiut University
Faculty of Science
Zoology & Entomology
Department



First semester Insect control Exam
(10 – 1 – 2025)



Time: 2 hours
Level: Four
Course Code: 442Z

Note: the questions on five pages and the answers in the same place

Answer the following questions (50 marks)

First Question: Choose the best correct answer: (15 marks)

1. Pyrethrin is a potent insecticide, and it is also function as.....at lower concentration.
a) Feeding deterrent b) Insect repellent c) Insect attractant d) None of them
2. Azadirachtin act asagainst number of insect pests.
a) Feeding deterrent b) Insect repellent c) Insect attractant d) All of them
3. Which hormones does neem affect?
a) Allatotrophic H. b) Juvenile H. c) Brain H. d) Ecdysone H.
4. What type of poison does boric acid work on?
a) Nervous b) Stomach c) Systemic d) Contact
5. Which of the following secrete juvenile hormone?
a) Neurosecretory cells b) Corpora cardiaca c) Corpora allata d) prothoracic gland
6. Chlorinated hydrocarbon contains at leastcovalently bonded atom of chlorine.
a) one b) Two c) Three d) Fours
7. Which type of insecticide, the malathion is belong to?
a) Organophosphates b) Chlorinated hydrocarbons
c) Carbamates d) Pyrethroids
8. *Bacillus thurigiensis* var.....kills caterpillar.
a) *Thurigiensis* b) *Kurstaki* c) *Israliensis* d) All of them.
9. Which is the most persistent insecticide class?
a) Organophosphates b) Chlorinated hydrocarbons.
c) Carbamates d) Pyrethroids
10. Which glands secrete the activation hormones?
a) NSC b) CC c) CA d) PTG.
11. Gyplure pheromone is produced by the female of.....
a) *Trichoplusia ni* b) *Bombyx mori*
c) *Pectinophora gossypiella* d) *Porthetria dispar*

2- Integrins:

.....
.....
.....
.....
.....
.....
.....
.....

3- Hemolin:

.....
.....
.....
.....
.....
.....
.....
.....

With my best wishes

Dr. Ahmed M. Korayem

2- Integrins:

.....
.....
.....
.....
.....
.....
.....

3- Hemolin:

.....
.....
.....
.....
.....
.....
.....

With my best wishes

Dr. Ahmed M. Korayem

IV- Correct the underlined part of the following sentences (if it needed): (10 marks)

1- Serine proteases that directly activate proPO have been purified only from hemolymph. ()

The correction:

2- The pattern recognition proteins (PRPs) exist only in the circulating hemolymph. ()

The correction:

3- Pathogen-associated molecular patterns (PAMPs) exist in hemolymph upon microbial challenge. ()

The correction:

4- True clot is composed of only hemocyte-derived components. ()

The correction:

5- In the absence of immune challenge, serine protease inhibitor prevents Toll pathway activation. ()

The correction:

6- Toll is a pattern recognition receptor since it binds directly to pathogens to get activated. ()

The correction:

7- Hemolin synthesis is induced when lepidopteran insect is challenged by bacterial infection. ()

The correction:

8- Gram (+) bacteria induces fat body cells to synthesize antimicrobial peptide named diphtericin. ()

The correction:

9- Encapsulation refers to multicellular hemocytic aggregates that entrap a large number of bacteria. ()

The correction:

10- In *Imd* pathway Gram (-) bacteria binds directly with PGRP-LC. ()

The correction:

V- Give short notes on each of the following: (6 marks)

1- Lectins:

.....
.....
.....
.....
.....
.....
.....
.....

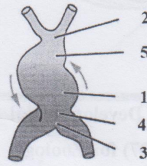


Figure 2

In Figure 2

- vi. Element number (1) in the embryonic heart above is:
 - a) primitive ventricle b) primitive auricle c) septum primum d) myocardium
 - vii. The fate of element number (5) is:
 - a) Left atrium b) sinus venosus c) left ventricle d) right ventricle
 - viii. The element that will not change in the adult heart is:
 - a) 1 b) 2 c) 4 d) none
 - ix. The cardiogenic area is specified by a chemical signal from
 - a) ectoderm b) mesoderm c) endoderm d) cardiogenic cords
 - x. Heart field is specified by the activity of the genes:
 - a) BMP & Chordin b) BMP & Noggin c) BMP & FGF8 d) BMP
- 2- Explain in details the process of fertilization with special reference to the role of cortical granules and the differences between mammals and sea urchin in fertilization. (ten marks)
 - 3- What is the significance of each of the following: induction- morphogenesis – pattern formation – differentiation? Explain using an example for each. (ten marks)
 - 4- Show with labeled drawings only the derivatives of fore gut and development of mammalian eye. Mention the embryonic origin of each part of the eye. (ten marks)
 - 5- Explain in details the process of Limb axis formation with special reference to the role of controlling genes and cell death in the formation of digits and joints. (ten marks)

End of questionsBest of Luck

Dr. Reda A. Ali
Prof. Experimental Embryology

11-The main two signaling cascades regulating expression antimicrobial peptide genes are:

- (a) The **Toll pathway** that is activated by and infections.
The pattern recognition proteins for this pathway are and
This pathway resulted in an activated nuclear transcriptional factor called
- (b) The (**Imd**) pathway responds against infections. The pattern recognition proteins for this pathway are and This pathway resulted in an activated nuclear transcriptional factor called

II- Choose the correct answer of the following: (3 marks)

- 1- In the **Imd** pathway, the Ring domain protein **DIAP2** (phosphorylate - activate - cleave) **dTAK1**/ its adaptor **dTAB2**.
- 2- The activated signaling complex **IKK** (β and γ) (phosphorylate - activate - cleave) **Relish/Ankyrin** complex.
- 3- The caspase **Dredd** (phosphorylate - activate - cleave) **Relish/Ankyrin** complex to release the transcription factor **Relish** to the nucleus

III- Choose the Odd answer of the following: (7 marks)

- 1- Upon microorganism challenge, insect innate immune system responds:
(a) Humoral then cellular. (b) Cellular then humoral. (c) In the same time.
- 2- Serpins' functions in insect innate immunity are:
(a) Regulate the active phenoloxidase. (b) Restrict phenoloxidase activity to the invasion site.
(c) Convert pro-phenoloxidase to active phenoloxidase.
- 3- In *drosophila*, the following hemocyte types are adhesive:
(a) Plasmatocytes. (b) Lamellocytes. (c) Crystal cells.
- 4- In insect immunity serine proteases participating in:
(a) Cactus degradation. (b) Activate melanization. (c) Coagulation of hemolymph.
- 5- In the Toll pathway pro-Spätzle is activated by:
(a) Serine proteinase cascades. (b) Gram (+) bacteria and fungi. (c) Persephone kinase.
- 6- In *Imd* pathway the induced pattern recognition proteins are:
(a) PGRP-SA. (b) PGRP-LE. (c) PGRP-LC.
- 7- In the Toll pathway the adaptor proteins are:
(a) Tube. (b) Myd88. (c) Pelle.



Answer the Following Questions (50 Marks)

I- Complete the following sentences: (24 Marks) each point= 0.5 mark

- 1- The two main responses of insect innate immune are and
- 2- Insect cellular responses against invading microorganisms include (a) for,
(b) for, (c), (d) at
wound sites, and (e) synthesis of
- 3- The following insect tissue cells secreting pattern recognition proteins:
(a) (b)
(c) (d)
- 4- Crystal cells of *Drosophila* larvae produce that is important in (a)
....., (b) and (c)
- 5- In Melanization the action of enzyme on phenolic compounds producing
..... that autopolymerize producing
- 6- The following are the most characterized pattern recognition proteins in insects:
(a) (b) (c)
(d) (e)
- 7- Identified pathogen-associated molecular patterns (PAMPs) include:
(a) (b)
(c)
- 8- In insects, antimicrobial peptides are synthesized mainly in the (a), and in less
extent in the (b), (c), and (d)
- 9- The antimicrobial peptides are classified into the following four groups:
(a) (b)
(c) (d)
- 10- In encapsulation process, the invader is killed within the capsule by:
(a) (b) (c)