



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

Examination Paper for juniors (Third Level) students of Special Zoology

COURSE
TITLE:

Invertebrates of Egypt

COURSE CODE: ZO3103

DATE:

3 /1/2021

TERM: FIRST

TOTAL ASSESSMENT
MARKS:150

TIME ALLOWED: TWO
HOURS

First Question (35 Marks)

- A) Explain how the life cycle of squid animal can be considered as a good presenter for the different zones in marine environment. (6 marks).
- B) Mention the diagnostic characters of class: Demospongia.(4 marks).
- C) By only full-labeled drawings show the following:..... (10 degrees).
- 1- Leucon type of water-canals of sponge.
 - 2- Types of larvae of sponges.
- D) Complete the empty spaces by suitable answer:(15 marks).

- 1- The domain Eukaryota includes three multicellular kingdoms called , and while the fourth kingdom which includes and is called
- 2- The first two zones of benthic region are called and and extend up tom.depth while the abysso-benthic zone extends up to.....m.depth.
- 3- The term Porifera means
- 4- is the coastal or shallow water and extends tom.depth.
- 5- Ecdysozoa means the animals which and include phylum

Second Question (40 Marks)

- A) MCQ (Multiple Choice): Choose only one best correct answer. (5 marks, 1 mark for each one).

1. In Red Sea of Egypt, branching fire coral *Millepora dichotoma* belongs to: ()
(A) Soft corals (B) Horny corals
(C) Hydrocorals (D) Black corals
2. Number of tentacles in Anthozoan Octocorals polyps is: ()
(A) 6 (B) 8 (C) 6 & its multiples (D) 8 & its multiples
3. A single central mouth opening and four (4) long oral arms characterize true jellyfish of: () (A) Semaostomeae (B) Rhizostomeae (C) Stauromedusae (D) Coronatae
4. Skeleton has red color, which results from iron salts mixed with calcium carbonate characterizes :() (A) Fire corals (B) Soft corals (C) Horny corals (D) Organ-pipe corals
5. Asexual reproduction by transverse segmentation of sessile polyps in true jellyfish is termed: () A. Polystomatous B. Strobilation C. Medusozoa D. Metagenesis

?

B) Complete. (10 marks).

1. Branching fire corals *Millepora dichotoma* show three types of Zooids namely:
_____.
2. Cnidarians show diversity of larval forms that comprise:
_____.
3. Medusa of Semaestomeae has marginal sense-organs arising from clefts between lappets called _____.
4. Skeleton of Alcyonacea (soft corals) is formed of _____.
5. Idea of mechanism of inhibiting stings in Nidaria Technology Company depends on: _____.

C) In a form of table show differences between Anthoathecatae & Leptothecatae with representative types from Egyptian fauna. (10 marks).

D) By only fully labeled drawing show life cycle of snake-locks anemone *Anemonia sulcata* in Egyptian fauna. (5 marks).

E) Mention taxonomic characters of Rhizostomeae with representative types from Egyptian fauna. (10 marks).

Third Question (35 Marks)

1- Choose the correct answer: (10 marks).

- 1- A Zooid of Bryozoa Known as:

a- A complete individual.	b- A group of asexually produced individual.
c- A reproductive structure.	d- A feeding structure.
- 2- Nemertean Knows:

A- Round-worms.	B- Proboscis-worms.
B- Segmented – worms.	d- Ornamented – worms.
- 3-The term of polychaeta refers to:

a- Numerous Setae.	B- Numerous palps.
C- Numerous tentacles.	D- Numerous cirri.
- 4- Rotifera means:

a- Com-bears.	b- Pectin- bears.
c- Wheel worms	d- Redge-bears.
- 5-The rotifers is:

A- Pseudo coelomates	b- Acoelomates.
B- Coelomates	d- all the above.

2- Answer the following: (20 Marks)

- a) Bryozoan zooids.
- b) The operculum of Polychaeta.
- c) Differentiate between Errata and Sedentary.
- D) Tabulate similarities and differences between Rotifer and Nematoda.

3- Complete the following: (5 marks):

- 1- Chaetognatha are worms.
- 3- The proboscis of syllidea provided with.....only.
- 4- Bryozoans classification into two classes 1.....,2.....
- 5-Errantia inhabit in

Fourth Question (40 Marks)

I- Complete the following: (10 Marks)

- 1- Mandibles of Pericardia with an between the..... andteeth in the adults and their development is
- 2- Rhizocephalia lack and have network of threads called
- 3- In Sphaeromatidae pleon composed of.....Segments while in Cirolanidae pleon composed of segments.
- 4- Uropods in Valvifera isinflexed ventrally and arching over the pleopods.
- 5- In Euphausiacea carapace doesn't cover the gills and thoracic appegages form maxillpeds.

II- In the form of table differentiate between the following: (15 Marks)

- i- Mysidacea and Tanidacea
- ii- Phyllocarida and Hoplocarida
- iii- Xiphosurida and Pycnogonida

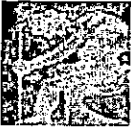

III- Explain in details the taxonomic characters and classification of Order Amphipoda. (10 Marks)

IV- Put true Or false and correct the false one: (5 Marks)

- a. Anomura with small abdomen shorter than the cephalothorax and beneath it.
- b. In Valvifera antenna 1 always shorter than antenna 2.
- c. In Flabellifera uropods which forms together with the last pleon segments a caudal fin.
- d. Eucarida with an oostigites.
- e. In *Sphaeroma walkeri* the upper surface of telson usually provided with 6_8 rows of longitudinal tubercles.

Good Luck

Examiners	Prof.Dr. Fayez Shoukr	Prof. Dr. Fadia Heiba
	Prof. Dr. El-Sayed Rizk	Prof. Dr. Samia Essa

	Tanta University Faculty of Science Department of Zoology		
	EXAMINATION FOR JUNIORS (3rd YEAR) STUDENTS OF SPECIAL ZOOLOGY		
Course title: ANIMAL TECHNIQUES		Student No.: 44	Course code: ZO3107
Date: 5 TH JANUARY, 2021	FIRST TERM	Total assessment marks: 150	Time allowed: 2 HOURS
<i>Examiners: Prof. Ghada Tabl, Prof. Hewaydah Abou-Shafeey, -Assoc.Prof. Soha Gomaa and Dr. Mona Etwan</i>			

Question 1 (30 marks)

الإمتحان فى ثلاث صفحات

A- Complete the missing parts. (5 marks).

1. The carrier in Agglutination reactions can be either artificial such as —, or biological such as —.
2. The agglutination process involving red blood cells is termed —.

B- Compare between the followings: (5 marks)

- 1- Passive and reverse passive agglutination.
- 2- Agglutination and precipitation reaction.

C- Answer the followings: (5 marks)

- 1- Why latex agglutination test is used?
- 2- Mention causes of agglutination in viral hemagglutination.

D- Write short notes on the followings: (15 marks)

1. Haemagglutination assay
2. Uses of direct agglutination test
3. Positive and negative reactions in haemagglutination assay
- 4- Types of agglutination reactions
- 5- Antibody titer

Question 2 (45 marks)**A- Complete the missing parts with appropriate word(s)? (25 marks)**

- 1) ELISA technique is used for a,— b,— c,— d,—.
- 2) SDS is an anionic detergent which — and — thus overwhelming positive charges in the protein.
- 3) There are two types of blotting apparatus used to transfer proteins to solid supports a,— and b,—.
- 4) There are three different supports commonly in use for western blotting a,— b,— and c.
- 5) Prerequisites for Flow Cytometry are a,— b,— and c.
- 6) The parameters analyzed by flow cytometry include — and —.
- 7) Flow cytometer analyses light signals to determine — and —.
- 8) SDS-PAGE allows us to a,— b,— and c.
- 9) The gel used for SDS-PAGE is made out of — and typically composed of — and — gels.
- 10) Visualization of proteins separated by SDS-PAGE is achieved by staining gels with —, — and —.
- 11) Detection methods of western blotting include —, — and —.
- 12) The relative mobility of individual molecules in gel electrophoresis depends on —, — and —.
- 13) Electrophoresis apparatus is composed of —, —, — and —.
- 14) The immunizing agents include a,— b,— and c.
- 15) Routes of vaccine administration include a,— b,— and c.
- 16) ELISA assay yields three types of data output include a,— b,— and c.
- 17) In flow cytometer, — tends to be more sensitive to the size and surface properties however, — tends to be more sensitive to inclusions within cells.
- 18) In agarose gel electrophoresis, — is commonly used to sort — and — molecules based on size.
- 19) The vast applications of electrophoresis a,— b,— c,— and d,—.
- 20) Data analysis plot types of flow cytometry include a,— b,— and c.

B- Decide whether the following statements are true or false and correct the wrong?(10 marks)

1. Passive immunization-individual acquires immunity through the transfer of antibodies formed by another host.
2. In sandwich ELISA, wells are coated with antigen, while they are coated with antibody in direct ELISA.
3. Cell viability is laser based technology employed in cell counting, cell sorting biomarker detection.
4. Vaccination is changing microorganisms to make them less able to grow and diseases in their natural host.
5. Stacking gel is the gel in which proteins are resolved on the basis of their molecular weights
6. ELISA is a set of DNA fragments of known size that can be used to estimate size of unknown fragments.
7. When DNA stained with ethidium bromide, the gel is viewed with X-ray.
8. In gel electrophoresis, the current pulls the DNA through the gel towards the negative charge separating the fragments according to size.
9. Electrofocusing electrophoresis separates proteins on the basis of charge only.
10. In competitive ELISA, the higher the sample antigen concentration, the weaker the eventual signal.

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C- Choose the correct word (s)? (10 marks)

- Detection proteins (0.1-1.0 ng) separated by SDS-PAGE is achieved by —.
a) Silver stain b) Coomassie brilliant blue stain c) Metal ions
- is the most complex step of ELISA as multiple layers of antibodies can be used to amplify the signal.
a) Coating b) Washing c) Detection d) Blocking
- In gel electrophoresis, the largest DNA fragment will appear —.
a) closest to the starting wells c) three quarters away from the starting wells
b) farthest from the starting wells d) it depends on how many fragments there are
- Which part of the cytometer brings the cells to the interrogation point where the cells meet the laser?
a) Fluidics b) Optics c) Electronics
- What does light emitted as forward scatter (FSC) measure?
a) Cell size b) Cell granularity / complexity c) Cell surface marker fluorescence
- In —, proteins remain folded in the native conformation and run on gels to separate them
a) SDS-PAGE b) Native protein electrophoresis c) Electro-focusing electrophoresis
- The Southern blot is used for transferring of —, however transferring of protein is performed by —.
a) DNA, SDS-PAGE b) DNA, western blotting c) RNA, western blotting d) RNA, SDS-PAGE
- By using appropriate antibody panels, flow cytometry can reveal —.
a) Cell type b) Cell lineage c) Cell maturation stage d) All of them
- is the transfer of proteins from the SDS-PAGE gel to a solid supporting membrane.
a) Southern blot b) Western blotting c) ELISA d) Flowcytometry
- Buffers in gel electrophoresis are used to —.
a) Provide ions that carry a current b) Maintain the pH at a relatively constant value c) A and b

Question 3 (37.5 marks)

A - Decide whether the following statements are true or false and correct the wrong(20 marks)

- Parasites should be collected alive and fixed directly from the living condition. ()
- The tough and impermeable cuticle of nematodes does not allow the penetration of stains easily. ()
- An extended proboscis is essential for acanthocephalan identification and a good mount. ()
- In tropical countries the glycerin-jelly is used for mounting of very thin nematodes. ()
- 70% ethanol used for long term storage of cestodes.()
- Dehydration of helminthes is to remove water prior to clearing in a series of graduated ethanol.()
- Staining time of worms depending only upon the size of specimen and concentration of the stain. ()
- Nematode specimens should be placed directly into steaming 70% ethanol for staining.()
- For fixation of digenes; they must first be relaxed in 1:4000 formalin. ()
- Semichon's acetocarmine is a well dehydration medium. ()

B - Choose the correct answer (10 marks)

- If you hurry through helminthes staining the specimen
a- appears faded details. b- poorly differentiated. c- both a and b.
- Tissue impression smears stain in.
a- Giemsa stain. b- Wright's stain. c- both a and b.
- Relaxation of helminthes may be required fixation.
a- prior to. b- after. c- both a and b.
- The slide label should be placed on of the slide.
a- right. b- left. c- middle.
- Nematodes are often suitable for whole mounting.
a- less than 12 cm long. b - large than 2 cm long. c - less than 2 cm long.
- Lacto-phenol is used as.
a- a clearing agent. b- a staining agent. c- a mounting agent.
- Canada balsam is used as.
a- a clearing agent. b- a staining agent. c- a mounting agent.

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- 8- Trematode specimen should be sandwiched between a slide and cover slip.
 - a- to protect it from dust.
 - b- to be able investigate under the microscope.
 - c- to give minimizing contraction and bending of the specimen.
- 9- For Digenea of birds; place specimens directly into room temperature tap water for
 - a- specimens will be stained well.
 - b- eggs will be expelled from their uterus.
 - c- specimens flattened well.
- 10- Any grease on the slide will cause the dried blood to.
 - a- flake off during staining.
 - b- flattening off during staining.
 - c- black off during staining.

C - Complete the missing parts with appropriate word (s) (7.5 marks)


- 1- The previous step to mounting specimens for light microscope investigation is
- 2- Helminthes can be artificially kept in their natural appearance in a process called
- 3- If the hematocrit is increased, the angle of the spreader slide should be
- 4- Difference between semi-permanent & permanent mount of nematodes is
- 5- Aim of blood films (smears) is.....
- 6- What is the difference between the two types of blood films for malaria?.....
- 7- What are the common causes of a poor blood smear?.....

Question 4 (37.5 marks)

Answer the followings questions:

- 1. Define each of the following: fixation, Embedding, Impregnation, clearing and staining
- 2. Explain in details the staining process? Mention different types of stains?
- 3. One of the fixation effects is to hardening the tissue. What are the advantages and disadvantages of this effect?
- 4. What the importance of serial section?
- 5. Write on Frozen section and mention its advantages and disadvantages?
- 6. What is the result of using Bouin's as a fixative?
- 7. What are the cause & the remedy when you obtain?
 - a) Presence of air bubbles in the block of wax
 - b) Horizontal and vertical lines across the section
 - c) Ribbon curves to one side

Best wishes from The Examiners

	Tanta University Faculty of Science Zoology Department		
	Term exam for sophomores (level 3) students of Special Zoology		
	Course Title:	Aquaculture	Course Code: ZO 3113
Date:	25/3/ 2021	Term: First	Marks:100
			Time Allowed: 2 Hours

Part one (65 marks)

الاسئلة في صفحتين

1) - Complete with appropriate word(s)

(10 Marks)

- A) - Teaseed cake is added to pond to.....
- B) - Seafood is a healthy choice because 1)2)3)
- C) - Aquaponics refers to any system that merges with
- D) - Hardness is the measure of that are dissolved in the water.
- E) - Example of organic fertilizers is.....while inorganic fertilizer is.....
- F) -is the term for the suspended dirt and other particles in water.

2)- Write short notes on the following:

(12 Marks)

- A) - The benefits of aquaculture (two benefits only)
- B) - The factors that make a species suitable for aquaculture (three factors only)
- C) - Differences between intensive and extensive system of aquaculture (two differences only)

3) - Fix the following problems in your pond and culture

(12Marks)

- A) - Water temperature increased to 30 °C
- B) - Acidity rose to pH 2
- C) -Oxygen concentration dropped to 1.5 mg/L

4)- From the drawing mention the

following: (6 Marks)

- A) -The type of bath sponge culture
- B) - The advantages of this method
- C) - Mention two factors affecting the growth of sponges



5) - What is the role of the following to your pond and culture

(6 Marks)

- A) - Secchi disc.
- B) -Drainage canal
- C) - Supplying gates

6) - Put √ or X and correct the wrong one(s)

(10 Marks)

- A) Fish and prawn eat the manure ()
- B) Pond compartments are usually triangular in shape ()

(انظر خلف الصفحة)



COURSE TITLE:	FUNCTIONAL HISTOLOGY		COURSE CODE: ZO310
DATE:	21 - 3 - 2021	TERM:FIRST	TOTAL ASSESSMENT MARKS: 150
			TIME ALLOWED: 2 HRS

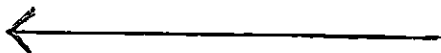
I. Answer the following: (112 Marks)

A) Choose the correct answer(s): (60 Marks)

- Where is antidiuretic hormone (ADH) secreted from?
 - Pars intermedia
 - Infundibulum
 - Hypothalamus
 - Neurohypophysis
- Alveolar type II cells are:
 - ciliated columnar cells that move mucous
 - squamous cells involved in gas exchange
 - cuboidal cells that secrete surfactant.
 - columnar cells that secrete mucous.
- Which of the following is **NOT** part of the adenohypophysis?
 - Pars tuberalis
 - Pars nervosa
 - Pars distalis
 - none of the above
- What cell of the parathyroid gland is also called a "chief cell"?
 - Oxyphil cell
 - Principal cell
 - Parafollicular cell
 - Follicular cell
- Which part the adrenal gland secretes sex steroids?
 - Chromaffin cells
 - Zona reticularis
 - Zona glomerulosa
 - Zona fasciculate
- Which hormone is **NOT** secreted by the anterior pituitary gland?
 - ADH
 - ACTH
 - GH
 - TSH
- Where are podocytes seen?
 - Visceral layer of Bowman's capsule
 - Parietal layer of Bowman's capsule
 - Pedicels
 - JG cells
- What gland secretes aldosterone?
 - Adrenal cortex
 - Thyroid
 - Adrenal medulla
 - Pituitary gland
- What connects the pituitary to the hypothalamus?
 - Pars intermedia
 - Pars tuberalis
 - Infundibulum
 - Neurohypophysis
- Too much urine indicates too:
 - little ADH
 - much ADH
 - little ACTH
 - much ACTH
- The cells forming the proximal tubule of the nephron are of which type:
 - Simple cuboidal
 - Simple squamous
 - Stratified squamous
 - Transitional
- Renin is produced by the:
 - Juxtaglomerular cells
 - Macula densa
 - DCT Cells
 - Mesangial cells
- What cell type secretes prolactin?
 - Lactotropic cells
 - Thyrotropic cells
 - Somatotropic cells
 - Corticotropic cells
- The adrenal gland produces the following hormones **EXCEPT**
 - aldosterone.
 - androgens.
 - renin.
 - cortisone
- Which cells type is also called C cells?
 - Principal cell
 - Oxyphil cell
 - Parafollicular cells
 - Follicular cells
- Bronchus is devoid the hyaline cartilage. True or False
- Parathyroid hormone (PTH) is secreted from parafollicular cells. True or False
- The thyroid gland secretes cortisol. True or False
- Oxytocin is secreted from the hypothalamus. True or False
- The adrenal medulla secretes epinephrine. True or False

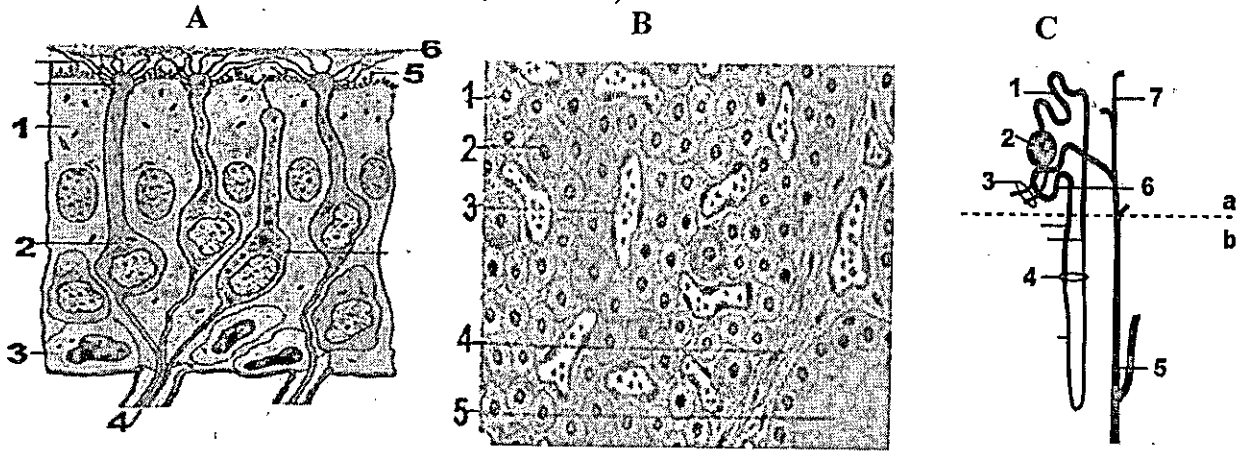
B) Complete: (25 Marks)

- The kidney collecting tubules are affected byhormone.
- Adrenal hormone that helps to control the balance of minerals and water in the blood is.....
- Surfactant causes alveolar surface tension to.....
- Juxtaglomerular cells secreteand combine withcells to form JGA



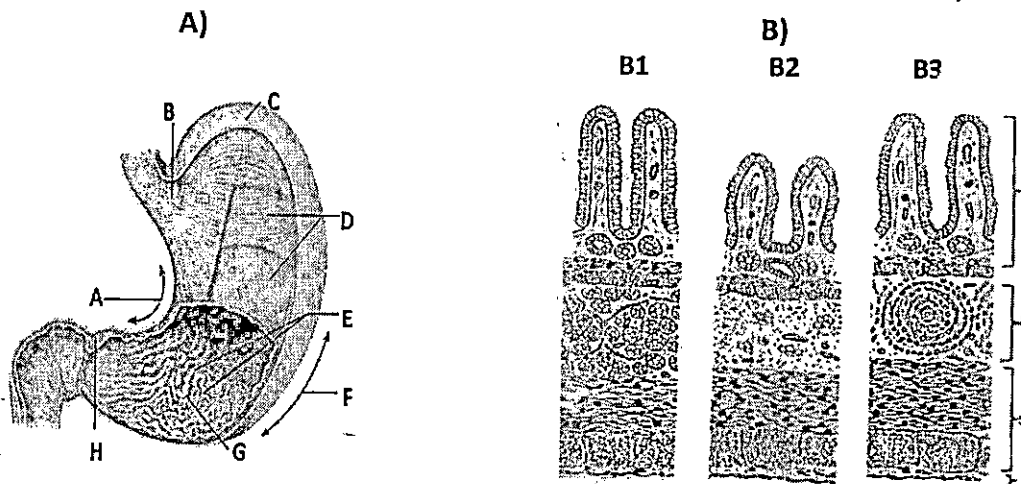
5. T3 & T4 are secreted from.....under the influence ofthat secreted from.....

C) Identify with full labels: (27 Marks)



II. Answer the following: (38 Marks)

A) Identify A& B with full labels then compare between B1, 2& 3: (20 Marks)



B) Choose the correct answer(s): (18 Marks)

- 1- Which cells of the epidermis produce fibrous protein keratin?
A- Melanocytes B- Merkel's cells C- Langerhan's cells D- Nothing is true
- 2- The papillary layer of the dermis consists of areolar connective tissue with collagen and elastic fibers. True or False
- 3- Which of the following strata is not visible as a distinct layer in the hairy skin?
A- Stratum basale B - Stratum lucidum C- Stratum spinosum D- Stratum granulosum
- 4-is a visible pigment through dermal collagen fibers.
A- Carotene. B- Hemoglobin C- Melanin D- Keratin
- 5- One of temporary graft options is making artificial skin from
A- Silicon B- Xenograft C- Allograft D- All are correct
- 6- Which of the following cells secretes gastric acid in the stomach?
a) Parietal cells b) Chief cells c) Peptic cells
- 7- Which of the following parts of the digestive system contains Brunner's glands?
a) Duodenum b) Ileum c) Oesophagus
- 8- The process of diffusion of digested food through the wall of the small intestine into blood is called
a) Absorption b) Refraction c) Swallowing
- 9- The protein that helps protect the skin and underlying tissue is
a) Keratin b) melatonin c) melanin

EXAMINERS: Prof. Nabila I. El- Desouki Dr. Osama Sweef	Prof. Ahmed Massoud
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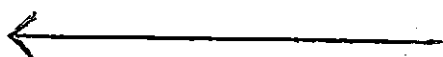
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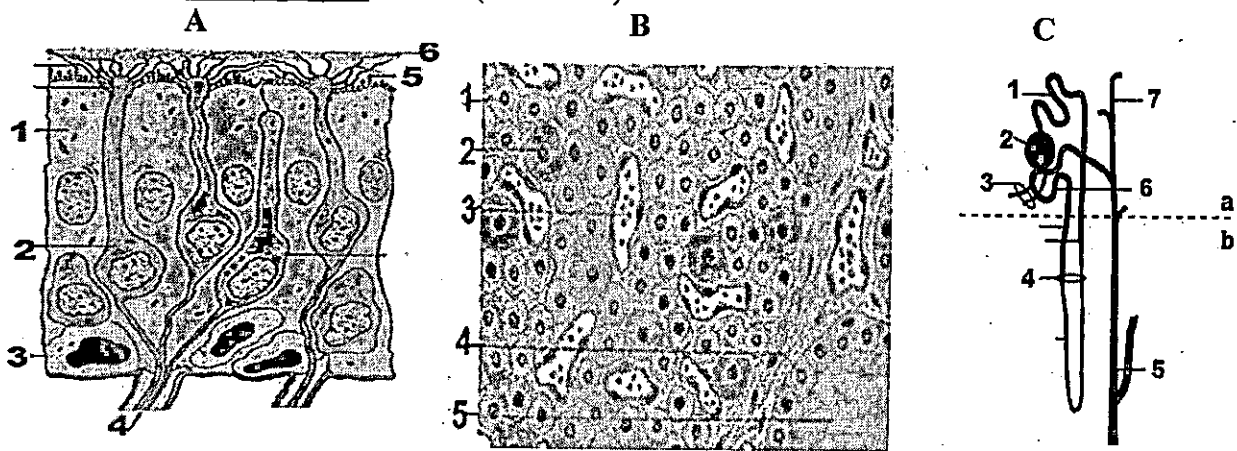
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C) Identify with full labels:

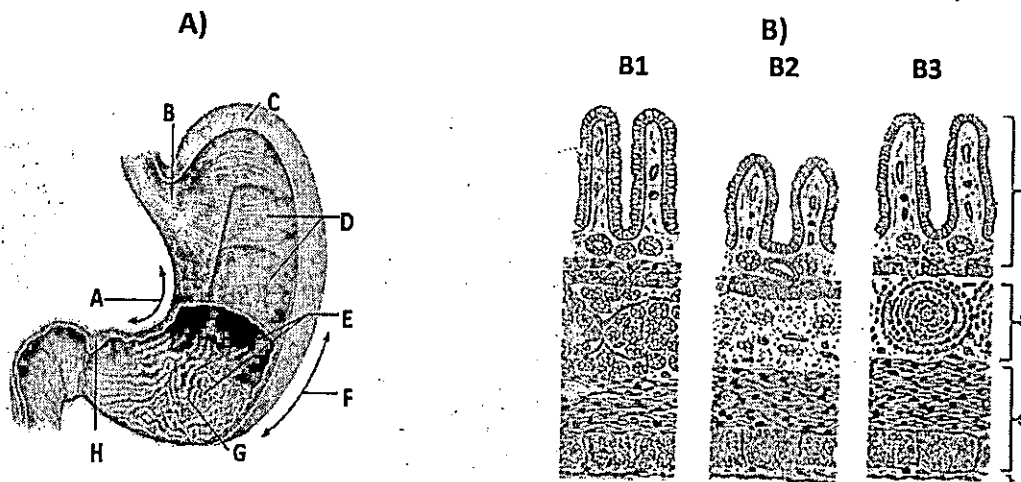
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**EXAMINERS: Prof. Nabila I. El- Desouki
Dr. Osama Sweef**

Prof. Ahmed Massoud

	TANTA UNIVERSITY - FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	FINAL EXAM FOR 3RD LEVEL, JUNIOR'S STUDENTS, OF ZOOLOGY		
1969	COURSE TITLE:	FIELD TRIPS	COURSE CODE: ZO 3111
DATE: 16, MARCH, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions:

Q1. A. Write down in the form of diagram the types and the components of ecosystems. [10 marks]

Q1. B. Write short notes on the following: [25 marks]

1. Water budget
2. Ecological pyramids.
3. Marine dangerous animals
3. Resource Reserves protectorates.
4. National parks protectorates

Q2. A. With full labelled diagram explain different zones of Intertidal Habitats [10 marks]

Q2.B. There are many general Biological, physical and environmental hazards that exist in nearly every location worldwide. Explain briefly how you can avoid the following hazards [20 marks]

1. Sea sickness.
2. Impure water.
3. Hypothermia.
4. Mosquito
5. Sharks

Q3. Write short notes on the following: [15 marks]

1. The four scales of measurement.
2. Advantages and disadvantages of systemic sampling.
3. Quantitative numerical data.

Q4. A. Complete the following sentences [10 marks]


1. Importance Value Index (IVI) = + +
2. Data in which the beginning and end of the sequence is the same.
3. Data in which the observations can be measured on a continuum or scale.
4. Many critical issues to consider during sampling design, Explain the benefits of each of the following issues: - Randomization - Replication.....
5. Relative density=

Q4. B. Put [T] for true statements and [F] for false statements. Correct the false one. [10 marks]

1. Accuracy refers to how close measurements are to the "true" value. []
2. Systematic sampling is the least biased of all sampling techniques. []
3. The values for evenness range from -1 to 1. []
4. Dependent variable the variable(s) being manipulated or changed by the experimenter. []
5. Randomization in sampling design aims to obtaining an unbiased sample. []

🦋 End of Exam 🦋 Best Wishes 🦋 Please Smile 😊

Examiners	Dr. Ahmed M. El-Bossery	Dr. Mohamed F. Ageba
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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	EXAMINATION FOR THIRD LEVEL STUDENTS OF CHEMISTRY / ZOOLOGY		
	COURSE TITLE:	EMBRYOLOGY & EXPERIMENTAL EMBRYOLOGY	COURSE CODE: ZO3141
DATE:14/3/2021	JANUARY, 2021	TOTAL ASSESSMENT MARKS:150	TIME ALLOWED: 2 HOURS

Answer the following Questions (Use the coloured drawings):


- 1) Mention the different embryonic membranes in chick embryo, then write briefly on the function of allantois. 40 Marks

- 2) With perfect colour diagrams ONLY show the passage of the chick fertilized ovum through the oviduct towards the cloaca; then show the structure of the hen's egg. 40 Marks

- 3) With perfect colour diagrams ONLY show the relation between yolk sac and the gut in the chick embryo. 30 Marks

- 4) With perfect diagrams ONLY show the formation of the heart in 24-33 hours chick embryo. 40 Marks

EXAMINERS	PROF. FOUAD AFIFI ABOU-ZAID
	PROF. NABIL KMAL EL-FEKY

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	EXAMINATION FOR THIRD YEAR STUDENTS OF SPECIAL ZOOLOGY		
COURSE TITLE:	FISH BIOLOGY		COURSE CODE: ZO3109
DATE:	7 MARS, 2021	TOTAL ASSEMENT MARKS: 100	TIME ALLOWED: 2 HOURS


Answer the following:

- 1) Osmoregulation is the active regulation of the osmotic pressure of an organism's body fluids, detected by osmoreceptors, to maintain the homeostasis of the organism's water content, **discuss the sentence.** (25 points)
- 2) complete the following: (25 points)
 - a) The mode of nitrogen excretion for most species of fish is ammoniotelic, i.e.....
 - b)is the principal corticosteroid in teleost fishes and its concentrations in blood rise dramatically during stress.
 - c) temperature coefficient Arrhenius plot (Q10) is defined as
 - d) total ammonia nitrogen (TAN) refers to:.....
 - e) the main stress response due to high stocking density is the activation ofand pituitary internal axis leading to a swift discharge of..... Andin blood
- 3) Mention the types of response that fishes take during hypoxia? (25 points)
- 4) Discuss the effect of water temperature on biological activities of fishes. (25 points)

Best wishes ☺

Examiners:

Prof. Dr. Ibrahim Al Shorbagy	. Prof. Dr. Mona Hegazi
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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR JUNIORS (THIRD YEAR) STUDENTS OF BIOTECHNOLOGY			
	COURSE TITLE:	PARASITOLOGY		COURSE CODE: ZO 329
DATE:	4/3/ 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 60	TIME ALLOWED: 2 HOURS

NOTE: The Exam in Two Pages
ANSWER THE FOLLOWING QUESTIONS

First Question..... (10 Marks,1 Each)

Choose the correct answer and rewrite it in your answer sheet.....

1) Nonspecific responses

- Depends upon specific recognition of the nonself foreign molecule.
- The host is able to differentiate nonself from self, but the responses do not depend on the specific recognition of the nonself molecules.
- The host is not able to differentiate nonself from self-molecules.

2) Habitat is.....

- The space in the biotic environment in which life is possible.
- The environmental component of the niche.
- Combination of environmental factors capable to support life.

3) Antigenic variation is.....

- The parasite changes the composition of their surface to escape the immune response of the host.
- Parasites coat themselves with host-produced molecules so that it appears as self to the host.
- Encapsulates to shield itself from the host reaction.

4) Prepatent period

- The time between the initiation of infection and the appearance of disease clinical signs.
- The time between infection and infectiousness.
- The time between infection with a parasite and when the parasite can be detected in the host via a diagnostic method.

5) Promastigote form of heamoflagelate is characterized by:

- Flagellum arises posterior to nucleus
- Presence of undulating membrane.
- Flagellum arises anterior to the nucleus and body

6) *Plasmodium malariae*.....

- Producing benign quatrain malaria and often fatal.
- Producing benign tertian malaria, which is not fatal.
- Producing malignant tertian malaria, often fatal and dangerous.

7) Stercorarian *Trypanosoma*.....

- Develops in the anterior gut of insect and leaves the insect with the saliva.
- Develops in the hindgut of insect and leaves insects with the feces.
- Develops in the haemocoel of the insect and leaves the insect when ingested by host.

8) Trophozoite of *Giardia sp.*.....

- Bears 4 pairs of flagella directed backwards and sucking disc.
- Bears 3-5 anterior flagella and axostyle.
- Bears one flagellum and undulating membrane.

9) Starting with the egg and ending with the adult, what is the correct order of development in the Schistosome life-cycle?

- egg → miracidium → cercaria → sporocyst → adult
- egg → miracidium → sporocyst → cercaria → adult
- egg → miracidium → sporocyst → redia → cercaria → adult

10) Which parasite from the list below can people acquire by eating uncooked meat containing infective stage?

- Fasciola hepatica*
- Schistosoma haematobium*
- Taenia saginata*

Second Question..... (10 Marks,2 Each)

In tables, compare between the followings.....

- Diagnostic stages of *Plasmodium malariae* and *Plasmodium falciparum*.
- Cutaneous and visceral leishmaniasis.
- Choanomastigote and opithomastigote forms of haemoflagellates.
- Amoebic dysentery Chronic intestinal ameobiasis.
- Facultative and incidental parasites.

Third Question..... (10 Marks,2 Each blank)

Fill in the blanks.....

- infective stage of *Plasmodium* spp.
-intermediate host of *Trypanosoma brucei*.
-mode of infection with *Giardia* sp.
-diagnostic stage of *Plasmodium vivax*.
-ability of organisms to produce severe pathological effects in the host.

Fourth Question..... (10 Marks,2 Each)

For each of the following terms, give a one sentence definition.....


- Opportunistic parasite
- Reservoir host
- Incubation period
- Prevalence of infection
- Endemic infection

Fifth Question..... (20 Marks)

- Only with labeled drawings illustrate the life cycle of *Toxocara canis*..... (6 Marks)
- Concerning *Ancylostoma duodenale*, discuss: (9 Marks, 3 Marks Each)
 - Pathogenesis
 - Diagnosis
 - The factors that determine its transmission
- Fill in the blanks with the appropriate term (5 Marks, 1 Mark Each Blank)
 - Adult females of *Entrobilus vermicularis* have a pair of on its anterior end
 - Juveniles of *Toxocara* spp. undergo migration through various tissues causing syndrome of humans.
 - The pathogenicity of *Entrobilus vermicularis* results from
 - Symptoms produced by *Ascaris lumbricoides* migrating larvae are and

Best Wishes

EXAMINERS	PROF. IBRAHIM M. BAKR	PROF. NAHLA A. RADWAN
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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	WRITTEN EXAMINATION FOR THIRD LEVEL STUDENTS OF MICROBIOLOGY PROGRAM			
	COURSE TITLE: PARASITOLOGY		COURSE CODE ZO3151	
	DATE: MARCH 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

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I- First Question: Choose the correct answer and show it in the provided sheet (30 marks)

<p>1) Niches is</p> <p>a. The space in the biotic environment in which life is possible.</p> <p>b. The environmental component of the habitat</p> <p>c. Combination of environmental factors capable to support life.</p>	<p>2) Antigenic variation is</p> <p>a. Parasite changes the composition of their surface to escape the immune response of the host.</p> <p>b. Parasites coat themselves with host-produced molecules so that it appears as self to the host</p> <p>c. Encapsulates to shield itself from the host reaction.</p>
<p>3) Diagnosis of Lishmaniasis occurs by:</p> <p>a. Culturing of parasites from tissue samples</p> <p>b. Examination of formed or semiformed feces for cyst stage.</p> <p>c. Blood smear (thin and thick)</p>	<p>4) Trophozoite of <i>Giardia</i> sp.</p> <p>a. Bears 4 pairs of flagella directed backwards and sucking disc.</p> <p>b. Bears 3-5 anterior flagella and axostyle.</p> <p>c. Bears one flagellum and undulating membrane.</p>
<p>5) Cutaneous Leishmaniasis</p> <p>a. Typically caused by <i>L. donovani</i></p> <p>b. Typically caused by <i>L. tropica</i> or <i>L. mexicana</i>.</p> <p>c. Typically caused by <i>L. braziliensis</i></p>	<p>6) Extraintestinal amoebiasis is diagnosed by :</p> <p>a. Scanning procedures of liver and other organs</p> <p>b. Wet preparations of vaginal secretions</p> <p>c. Detection the cyst in the stool sample</p>
<p>7) Cyst of <i>Endolemax nana</i> is characterized by :</p> <p>a. Sharp Chromatoid bodies and thick shell</p> <p>b. Large glycogen vacuole</p> <p>c. No chromatoid bodies</p>	<p>8) Amoebic dysentery occur when:</p> <p>a. Trophozoites reaching vital organs like liver</p> <p>b. First time infection</p> <p>c. Infection occur in person with high resistance</p>
<p>9) Promastigote form of heamoflagelate is characterized by:</p> <p>a. Flagellum arises posterior to nucleus</p> <p>b. Presence of undulating membrane.</p> <p>c. Flagellum arises anterior to the nucleus and body</p>	<p>10) Temporary parasites</p> <p>a. Is ingested and passed unchanged in stools</p> <p>b. Visit the host only for feeding.</p> <p>c. Lives in unusual places in their normal host.</p>
<p>11) Parentenic hosts</p> <p>a. In which asexual reproduction occurs.</p> <p>b. Act as definitive host and a long-term source of infection.</p> <p>c. Transport the parasite up or down the food chain</p>	<p>12) Epidemic is:</p> <p>a. Parasitic infection is at a steady rate all year</p> <p>b. Sharp increase in the rate of a given disease</p> <p>c. Diseases which are imported into a country</p>
<p>13) Patent period of Schistosomiasis</p> <p>a. Period of egg laying and presence of eggs in extra</p> <p>b. Period of the invasion of the skin by the cercariae</p> <p>c. Period of formation of connective tissue in the infected organs and loose their main function.</p>	<p>14) Intermedaite host of <i>Taenia saginata</i> is</p> <p>a. Man</p> <p>b. Pig</p> <p>c. Cattle</p>
<p>15) Precystic stage (minuta form) of <i>Entamoeba histolytica</i></p> <p>a. Is the infective stage and passes out with feces</p> <p>b. Its endoplasm contains food vacuoles contain blood</p> <p>c. Its endoplasm is free of blood cells</p>	

II-Second question: In the form of table, write the name of infective stage, intermediate host, diagnostic stage and main methods of control of the following parasites (15 marks) :

Entameoba histolytica, *Leishmania denovani*, *Trichomonas vaginalis*, *Plasmodium vivax*

III- Third Question Compare in table between five from the followings: (20 Marks)

- 1- Endemic and epidemic diseases.
- 2- Infection and infestation.
- 3- Vector and reservoir hosts.
- 4- Spurious and accidental parasites.
- 5- Amoebic dysentery Chronic intestinal ameobiasis.
- 6- Facultative and incidental parasites.
- 7- Allergic and necrosis damage caused by parasites.

IV-Fourth Question (10 Marks)

Compare between cyclophyllidian and pseudophyllidian worm

V- Fivrth Question Fill in the blanks (12 Marks)

- 1) _____ is the second intermediate host of *Diphyllobothrium latum* .
- 2) _____ is a proglottid releases from strobila or disintegrates to release eggs.
- 3) _____ is the posterior margin of "segment" overlaps with anterior of following one.
- 4) _____ is the infection of human with the plerocercoid.
- 5) _____ is an Order which characterized by being polyzoic with oncosphere larva
- 6) _____ is the excretory unite of Nematodes

VI- Sixth question Choose the correct answer and rewrite it in your answer sheet. (10 Marks)

- 1) pseudophyllidean tapeworm eggs are characterized morphologically by presence of:
a. Miracidium. b. Cercaria. c. Coracidium.
- 2) The Pathogenicity of *Dipylidium caninum* in children is higher than adults because:
a. Children eating row fishes. b. Children let dogs lick their faces.
c. Children doesn't like dogs.
- 3) The only treatment for infection by **hydatid cysts** is:
a. Sewage disposal. b. Personal cleanliness. c, Surgery.
- 4) Which parasite from the list below utilizes **Copepod as 1st intermediate host?**
a. *Dipylidium caninum*. b. *Diphyllobothrium latum*. c. *Dicrocoelium dendriticum*.
- 5) The **final host** of *Echinococcus granulosus* is:
a. Dogs. b. Sheep. c. Man.

VII . For each of the following, give a one sentence definition and mention a parasite species for which the term applies. (3 Marks, 1Mark each)

- 7) Neodermata.
- 8) Renette.
- 9) Direct life cycle.

Best wishes

Examiners : Prof. Nahla A. Radwan

Dr. Lamia I. Bakr



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

EXAMINATION FOR LEVEL FOUR STUDENTS OF SPECIAL ZOOLOGY

COURSE TITLE:

Physiology 1

COURSE CODE: 3204

DATE:30/12

TOTAL ASSESSMENT MARKS:60
POINTS

TIME ALLOWED: 2HOURS

Part I(30 points)

1-Give an account on:

- a.Action of phosphorusfructokinase.
- b.Biological oxidation.

2-Define:

_Gluconeogenesis. _Glycogenesis. _Glycogenolysis

3- What is the fate of hexose sugar after absorption.


Part II(30 points)

1-Write short notes on:

- a. Difference between selective and non-selective pinocytosis.
- b. Feeding method in hydra and amphioxus.
- c. Digestive system in insects.s

Good Luck ©!

EXAMINERS	PROF.DR. ZEINAB ATTIA	PROF.DR. HALA ABDEL-AZEEM

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR SENIORS (THIRD YEAR) STUDENTS OF CHEMISTRY AND ZOOLOGY			
	COURSE TITLE:	Functional Histology		COURSE CODE: ZO 3145
DATE:	21 /2/ 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions (with draw if possible). (40 Marks)

- A- Discuss the main histological difference among salivary glands?
 B- Mention the main functional units of liver?
 C- The blood enters the kidneys to be filtered describe the renal blood fellow?

D- Choose the correct answer (write the correct answer in a table) (20 Marks)

- 1- The excretion is performed by excretory organ and the following organs have excretory function except
- A- Trachea B- kidney C- Skin D- Liver
- 2- Based on the excretory mode, the excretory product of uricotelism excretion type in animals is
- A- Ammonia B- urea C- Uric acid D- Amino acids
- 3- In human kidney disease that where the cortices function is lost because of formation of large cysts fluid filled, this failure arise from epithelial tissue of the nephrons, this disease is
- A- polycystic kidney disease B- Sickle cell nephropathy
 C- renal cell carcinoma. D- All are correct
- 4- The histological structure ofis simples squamous epithelium involved in passive mode of transport of water and ions
- A-. Collecting tubule. B- Distal convoluted tubule.
 C- Proximal convoluted tubule D- Ascending limb of henle.
- 5- The histological composition of the ureter and urinary bladder are similar, but the bladder is characterized by a type of unique tissue not exist in the ureter, this tissue is.....
- A- Circular muscle fiber. B- Longitudinal muscle fiber.
 C- Oblique muscle fiber D- Transitional epithelium.
- 6- In human male the urethra is composed of three part,is lined by transitional epithelium.
- A- Prostatic urethra B- Membranous urethra C- Spongy urethra D- Urethra of female
- 7- The histological structure of glomeruli indicates the presence of cells that have an impact in urine ultrafiltration, provide physical support to capillaries and controlling capillary diameter
- A- Podocytes B- Endothelium C- Mesangial cells D- Renal cell
- 8- During urine formation process, in ultrafiltration step, the following component can pass form glomerulus except.
- A- Plasma protein B -Water C- Creatine D- Glucose

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- 9- All of the following statements are True related to the urethra of a male except:
- A- It serves both the urinary and reproductive systems.
 - B- It contains a single urethral sphincter near the neck of the urinary bladder.
 - C- It receives secretions from the bulbourethral glands.
 - D- It consists of three regions, approximately 20 cm long in an adult.
- 10-Which of the following is the proper sequence of structures in the nephron?
- A- Glomerulus, proximal convoluted tubule, distal convoluted tubule, nephron loop.
 - B- Glomerulus, nephron loop, proximal convoluted tubule, distal convoluted tubule.
 - C- Glomerulus, proximal convoluted tubule, nephron loop, distal convoluted tubule.
 - D- Proximal convoluted tubule, glomerulus, nephron loop, distal convoluted tubule

Answer the following questions: (40 marks)

A- Draw with labels the following structures: (20 Marks)

- 1- Secretory unit of both apocrine and merocrine sweat gland
- 2- Epidermis layers of the thick skin
- 3- Section of the respiratory mucosa

B- Complete the following: (10 Marks)

- 1- The apocrine sweat glands are characterized by
- 2- The skin epidermis consists of the following cells
Which exhibit the following functionsrespectively
- 3- Surfactant causes alveolar surface tension to
- 4- The thick skin differs from the thin skin in the absence of
- 5- The conducting portion of the respiratory system consists of While the respiratory portion consists of

C- Choose the correct answer (s) and write them in the answer sheet: (10 Marks)

- 1- Which of the following are functions of skin keratinocytes:
 - a- Produce keratin
 - b- produce interleukin
 - c- Produce immunogenic molecules
 - d- produce interferons and tumor necrosis factors
- 2- Which of the following are functions of sebaceous glands
 - b- Help to keep the skin and hair soft
 - b- help to protect epidermis from water penetration
 - c- They secrete the antibacterial substances
 - d- they form keratin filaments
- 3- Cells of the basal stratum of epidermis include:
 - a- Melanocytes
 - b- Highly divided columnar cells
 - b- Merkel's cells
 - d- Langerhan's cells
- 4- Alveolar type I cells are :
 - a- Cuboidal cells that secrete surfactant
 - b- squamous cells involved in gas exchange
 - c- Ciliated cells that move mucous
 - d- columnar cells that secrete mucous
- 5- The merocrine sweat glands are characterized by:
 - a- Secreting a watery product containing solutes
 - b- containing clear and dark cells
 - c- having no myoepithelial cells
 - d- being simple coiled tubular merocrine gland

Good luck

EXAMINERS	PROF. DR. AHMED MASOUD	DR. OSAMA SWEEF
	DR. MONA ELWAN	