

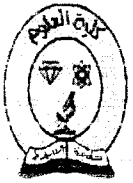
س ٣: أكتب المصطلح العلمي الدال على كل عبارة مما يأتي: (١٥ درجة):-

- 1- An organic compound secreted by some algae and fungi which gives a musty odor to water.
- 2- One of the limiting factors of corals responsible for the absence of reefs in the estuaries.
- 3- A substance secreted by corals which prevent dehydration.
- 4- Vertebrate animals very sensitive for acid rains.
- 5- An organic substance which may be leached from soil as a result of acid rains.
- 6- An area of the lake rich in nutrients.
- 7- A distinct physical structure in streams occurs in flatter portions of the water course.
- 8- A factor which affects the structure of the estuary.
- 9- A type of lakes that has chemical classification depending on microbial processes.
- 10- A group of organisms that live in symbiosis with corals.

س ٤: (١٥ درجة):- علل لما يأتي معطيا سببا واحدا لكل حالة:

- 1- There is rarely any stable vertical stratification of chemicals in the littoral zone of aquatic ecosystems.
- 2- Snails are severely affected by acid rains.
- 3- Human impact increases acid rains.
- 4- In some lakes eutrophication does not occur in spite of increasing nutrients.
- 5- Lakes having granite basin are not suitable for fish culture.
- 6- Rivers situated in arid regions have excess phosphate.
- 7- Death of a lot of animals as a result of eutrophication.
- 8- Some lakes are not heavily affected by acid rains.
- 9- Increasing of biodiversity in estuaries.
- 10- Increasing of biodiversity in streams.

With best wishes



Assiut University
 Faculty of Science
 Zoology Department

Third year Exam (Zoology)

Course name: Vertebrate 2

Course code: (330-Z)

Time: two hours



Answer the Five following questions

Question 1: (10 pt)

- **List only, no commentary needed**

1. Importance of studying vertebrates due to.....

2. Amniota includes.....
3. The embryonic membranes develop from,while the egg shell develops from.....
4. The anapsid skull is characteristic of.....
5. The two characters that define a mammal.....

Question 2: (10 pt)

- **Choose the single response that is the correct answer of the following.**

1. **The stem of reptiles**
 - a) Archosauria
 - b) Archaeopteryx
 - c) Cotylosauria
 - d) Salposuchus
2. **The amniotic kidney is**
 - a) Pronephros
 - b) Mesonephros
 - c) Metanephros

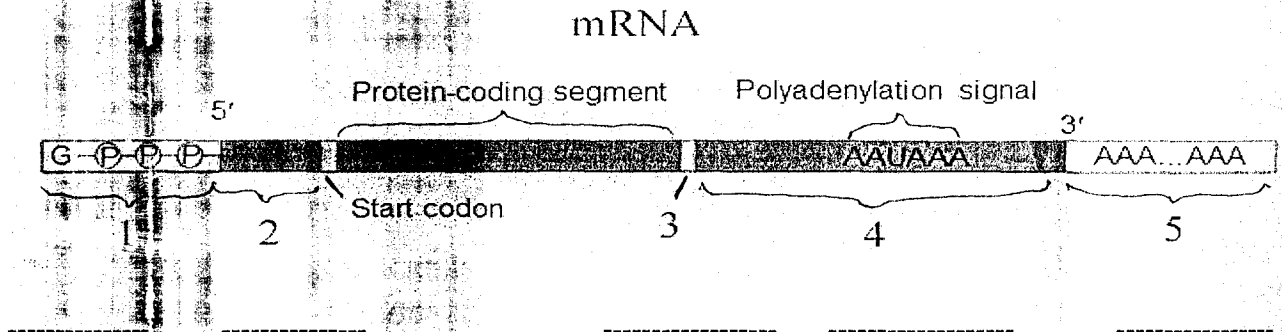
III- Write the scientific term(s) that summarize the following sentences, (10 marks, one mark for each)

- 1- The cellular structure where splicing takes place. (.....)
- 2- 50 to 250 adenine nucleotides is added to the 3' end of mRNA. (.....)
- 3- A special group of enzymes pairs up the proper tRNA molecules with their corresponding amino acids. (.....)
- 4- 20-25 special sequence at mRNA in the 5 end is found in mRNA that will be translated upon RER. (.....)
- 5- Formation of a protein molecule as complex of more than one polypeptide chain. (.....)
- 6- Coding for more than one polypeptide chain in prokaryotes by the newly synthesized mRNA
- 7- A short circular DNA found in bacteria. (.....)
- 8- A DNA polymerase that can withstand the temperature cycle of PCR. (.....)
- 9- Enzymes that cut DNA at a special sequence. (.....)
- 10- A plasmid vector which is specialized for expression of the transgene in the target cell. (.....)

IV- Complete the following sentences with the best word(s). (5 marks, one mark for each)

- 1- Degradation of proteins marked with ubiquitin occurs at a special cellular structure known as.....
- 2- forms a peptide bond between the amino acid in the P site, and the newly arrived aminoacyltRNA in the A site in the Ribosome.
- 3- In DNA, a consists of a nitrogen base linked to deoxyribose sugar
- 4- is a secondary structure of the nucleic acids and also known as hair pin.
- 5- Prokaryotic mRNA contains a special sequence known as..... to show the ribosomes where to start translating.

V- Complete the missing labels of the following diagram. (5 marks, one mark for each)



Assiut University
Faculty of science
Zoology Department



Final exam.(Summer term)
Course number 324 Z
(Protozoa & Parasitology)
Time: 2 hours

June 2017

Answer the following question (Write the answer only in your paper)

A- Fill in the blanks: (10 Marks)

- 1- *Paramecium* sp. Lives in and feeds mainly on it reproduce asexually by..... and sexually by.....
- 2- The intermediate host of *Schistosoma haematobium* is whereas in *S. mansoni* is
- 3- *Trichomonas tenax* lives inbut *Trichomonas vaginalis* lives in.....
- 2- The final host of *Toxoplasma gondii* isbut the intermediate host is

B- Choose the one correct answer: (5 marks)

- 1- *Lymnaea truncatula* is intermediate host of (*Schistosoma haematobium*, *S. mansoni*- *Fasciola gigantica*- *Heterophyes heterophyes* –none of them)
- 2- *Taenia saginata*, to complete its life cycle requires (one host- two hosts- three hosts, - None of them)
- 3- The insect vector of *Trypanosoma gambiense* is (mosquito- house fly – sand fly- none of them)
- 4- Man acts as a final host in (*Taenia saginata* – *Echinococcus granulosus* – Cysticercosis - none of them)
- 5- Auto-infection, could be propagated by (*Ascaris* sp. – *Encylostoma* sp.- *Enterobius vermicularis* - none of them)

c- Put a suitable(√) or (X) adjacent to the following: (15 marks)

- 1- Redia stage is absent in *Schistosoma* sp ()
- 2- Metacercariae are encysted cercariae without tails ()
- 3- Definitive host, is the host harbouring sexual forms of Protozoa ()
- 4- Infective stage of *Trichomonas hominis* is trophozoite ()
- 5- Some cercariae may have both penetration & cystogenous glands ()

5-Identify the followings :- Choose (2)

(2-Marks)

1- Eosinophilic.

2-Basophilic

3- Masson Trichrome

6-Match the correct answers :- Choose (10)

(10 Marks)

1-Vital stain

A - in vitro

2- Tissue culture

B- inside the body.

3- Supravital stain.

C- Stain for macrophages..

4- Indian ink

D- Specific substrate.

5- Enzymes react with

E- Phase contrast microscope.

6- Feulgen reaction.

F- Deoxyribose sugar.

7- Hydrolysis with HCL

G- Carbohydrates.

8- Periodic acid oxidizes

H- DNA.

9- Neutral stain

I- Contains acid and basic dyes

10- Aldehyde fuchsin.

J- Physical factors.

11- Sulphated polysaccharides

K- Metachromatic.

12- Size of the dyes particles

L - Elastic fibers.

Good luck

Dr Hanem S Abdel-Tawab



I- Choose the best answer. (10 marks, one mark for each)

- 1- The link between adjacent nucleosomes are..... base pair
a- 166 b-48 c- 66 d- 148
- 2- The most common form of DNA in cells is....
a- B form b- A form c- z form d- bulge loop
- 3- In DNA replication the nucleotides required for building new DNA are found as.....
a-deoxyribonucleoside triphosphates b- deoxyribonucleosidediphosphates
c-deoxyribonucleoside monophosphates d- none of the mentioned
- 4- In prokaryotes the enzymes that removes Okazaki fragments is called....
a- Polymerase I b- Polymerase II c- Polymerase III d- primase
- 5- Telomeres form a T-loop with some proteins to protect itself fromactivity.
a- endonuclease b- exonuclease c- polymerase d- telomerase
- 6- Most human somatic cells lack telomerase activity, so they have.....
a- Telomere shortening b- Senescence c- end-to-end chromosome fusion d- all the mentioned
- 7- In transcription,..... unwinds a short stretch of double helical DNA
a- Helicase b- DNA polymerase c- RNA polymerase d- Topoisomerase
- 8- RNA..... in Eukaryotes makes tRNAs
a- polymerase I b- polymerase II c- polymerase III d- polymerase IV
- 9- During transcription, preinitiation complex is formed of.....
a- RNA polymerase b- transcription factors c- promoters d- a and b
- 10- Getting more than one protein product out of the same gene is known as....
a- Translation b- splicing c- alternative splicing d- post-transcriptional modification

II- Put (✓) beside the right sentences and (x) beside the wrong sentences. (10 marks, one mark for each)

- 1- RNA is more resistant to be damaged by Ultra violet compared with DNA ()
- 2- B form of DNA is left handed helix ()
- 3- Histone is not present in prokaryotes ()
- 4- During DNA replication, primers is made by DNA primase ()
- 5- Okazaki fragments in Eukaryotes are longer than that in prokaryotes ()
- 6- The newly synthesized DNA strand always extended in 5'-to-3' direction ()
- 7- The noncoding DNA sequence is called exons ()
- 8- Eukaryotic Promoter GGCCAATCT lies upstream of the gene ()
- 9- Transcription factors are proteins that bind to DNA near the start of transcription ()
- 10- The hnRNAs contain only exonic sequences ()

VI- Write short notes about. (10 marks, 5 marks for each)

a- Methods of gene delivery

b- Types of point mutations

Best wishes

Course coordinator and Examiner

Prof. Abo bakr Eltayeb

d) Non of the above

3. The diapsid skull is diverged from

- a) Anapsidian skull
- b) Synapsidian
- c) Parapsidian skull
- d) All of the above

4. Head movement of reptiles is allowed by

- a) The cervical vertebrae
- b) The neck region
- c) The trunk region
- d) The 2nd cervical vertebra

5. reptilian head carried off the ground by

- a) The trunk region
- b) The neck
- c) bones
- d) muscles

6. name one of the following has common features with birds

- a) Snakes
- b) Gecko
- c) Crocodile
- d) Armadillo

7. reptiles jaw bears teeth which are

- a) Epidermal
- b) True
- c) Thecodont
- d) Dermal

8. Which of the following is not true in bird skin

- a) Is dry
- b) Has feather



Answer the following questions:

Total marks: 50

Q1: State whether the underlined words make the following statements true or false and then, correct the false ones: (10 marks)

- 1) The difficulty of comparing between two very close large quantities is due to numerical distance effect.
- 2) Although cats normally use their mouth to open doors, when a cat watched a child opening a door with his hand, it started to open the door using its foreleg; this behavior represents a case of rational imitation.
- 3) Parrots have a good vocal system and they can understand human spoken language.
- 4) If you want to teach your dog to do something, the best technique could be trial and error learning.
- 5) The ability of an animal to be aware of itself is examined using the mirror test.
- 6) Among the factors suggesting the existence of human pheromones is the menstrual synchrony in women.
- 7) Habituation and insight learning are both found in vertebrate species.
- 8) Vomeronasal organ is believed to receive pheromone signals in birds.
- 9) The Clever-Hans effect is delaying maturation in female rats due to pheromone exposure.
- 10) A high fluctuating asymmetry is an indicator of good genotype.

Q2. Answer four only of the following:

(22 marks)

- a) Innate behaviors are not intelligent and cannot be improved by experience – why are they important?
- b) Mention the main types of learning in animals and write an account on one only of them.
- c) When a female goose spots two different-sized eggs outside the nest, she will retrieve the larger egg first. Do you think this behavior is adaptive? Explain why?
- d) Mention five of the animal species that are capable of self-awareness. What is the difference between awareness of self and awareness of others?
- e) "Ethological principles can improve the experiments of operant conditioning". Explain this statement.

Q3. Write a brief account on four only of the following:

(18 marks)

- a) Evidence supporting the existence of human pheromones
- b) Examples of animals' ability to perform deliberate deception
- c) Signaler pheromones
- d) Allelochemicals
- e) Theory of mind

End of questions

Good luck



1 - Compare between the followings:

(20 Marks)

(A) Light and electron microscope.

(B) Paraffin techniques advantage and disadvantage characters.

2- Answers the followings: choose only 2 :-

(10marks)

A) Character of good fixative.

B) Factors affecting fixation.

C) Glutaraldehyde

3-Choose the correct answers from the followings:-

(3 Marks)

1-Preservation of the shape, structure, relationship and chemical constituents of the cells and tissues after death.(fixative –fixation – aim of fixation).

2- Substance which will preserve after death the shape, structure, relationship and chemical constituents of the tissues and cells.(fixative –fixation – aim of fixation).

3- Prevention of autolysis and bacterial decay means (aim of fixation- fixative –fixation)

4-impregnation in ard wax at (50----60-----54).

4-Put true (T)or False(F) for the followings choose 10 :-

(5 Marks)

1-Chemical union between dye and stained substance through salt linkages, hydrogen bonds, or others. Which involved in most staining reactions.T

2- Color will vary not only with specific stains used, but also with the conditions that exist during preparation of the slide.

3- Litmus Saffron represents natural dyes.

4- Coal tar dyes such as haematoxylin.

5- Cationic stain usually positively charged.

6- Haemtoxylin is negatively charged.

7-EM slides are glass.

8-Anionic stain negatively charged.

9- Smear technique is carrying on section.

10-Whole mount can be used in EM.

11- Cell fractionation used in PCR techniques

c) Has oily gland

d) Has claws

9. Urodaeum performs

a) Excretion

b) Reproduction

c) Osmoregulation

d) Maintenance of the body temperature

10. Accessory cranial nerves in amniotes are

e) Optic and olfactory

f) Trigeminal and auditory

a) Spinal accessory and hypoglossal

Question 3: (10 pt.)

- Compare between the Reptilian and Avian arterial system.

Question 4: (10 pt.)

- Describe two items only from the following

a) Air sacs

b) Human heart

c) Reptilian lower jaw

Question 5: (10 pt.)

- Mention the following;

A. Characters of flightless birds

B. Characters of egg laying mammals

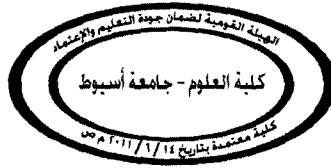
(الله ولي التوفيق)

س ٢: ضع الرقم المناسب من فقرات العمود (A) أمام ما يناسبه من فقرات العمود (B) (١٥ درجة):-

A	B
1- Attenuate floods	+ are provided in lakes by bacterial and fungal decomposition ()
2-Marine ecosystem	+ Are common nutrients needed in large quantities for cell development ().
3-Euryhaline organisms	+ Is the place where the river meets the sea ().
4- Light	+ Have fast unidirectional water flow ().
5-Ponds and Lakes	+ Are stronger swimming organisms ().
6- Biological activity	+ Is the end product of eutrophication ().
7-The intertidal zone	+ Gives a good indication of eutrophication ().
8- Humic acid	+Has an average salinity of 35‰ ().
9-BOD	+ Is one of the functions of aquatic ecosystem ().
10- Detritus	+ are salt tolerant ().
11- Nekton	+ Considered as abiotic characteristic of aquatic ecosystem ().
12-Streams and Rivers	- Considered as lentic waters ().
13- The Estuary	+ Is considered as a factor that determines any aquatic structure ().
14-SiO ₂ -SO ₄ -Fe	+ Is the area between high and low tide ().
15- Acetate and glycolate	+ considered as a refractory compound in natural waters ().



Assiut University
Faculty of Science
Zoology Department



First Semester Final Exam for Parasitoid Course
05/01/2017



Time: 2 hour
Level: Third
Course Code: 351Z

Answer the following questions (50 marks)

Q1: Write briefly on:- (20 marks)

- A- Ankyrin repeat containing genes in polydnavirus and their application in pest management (give an example).
- B- Origin, characteristics and roles in host immunosuppression of teratocytes.
- C- Two differences between bracovirus and ichnovirus (with drawings).
- D- Protein tyrosine phosphatases of polydnavirus.
- E- Polydnavirus noncoding RNAs.

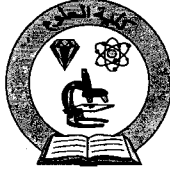
Q2: (I) Complete the following sentences (5 marks)

- A- Polydnavirus genome is made up of and they can be transmitted by
- B- Proteins produced by the larvae of *Chelonus inanitus* parasitoid larvae can be considered as in host regulation.
- C-, and are two strategies to use products from parasitoid origin in pest management.
- D- Chitinase from *Toxoneuron nigriceps* teratocytes functions in
- E- The size range of venom proteins in parasitoids is

(II) Choose the best correct answer:- (5 marks)

1.involves releasing large numbers of natural enemies for immediate reduction of a damaging pest population.
a) Inoculative BC b) Inundative BC c) Conservation d) Importation
2. Modification of the environment or existing practices to protect and enhance a specific natural enemy is known as.....
a) Inoculative BC b) Inundative BC c) Conservation d) Importation
3. When the adult parasitoid attacks the host egg, and the parasitoid progeny emerge from the pupa, the parasitoid is called.....
a) Egg parasitoid b) Pupal parasitoid c) Both a and b d) Egg-pupal parasitoid

Please see the next page



جامعة أسيوط - كلية العلوم

قسم علم الحيوان

اختبار مادة البيئة المائية ٢٠١٦-٢٠١٧

الزمن: ساعتان.

أجب عن الأسئلة الآتية:

س ١: اختر الإجابة الصحيحة من بين الأقواس: (5 درجات):

- 1- The chemical factors in the aquatic ecosystem include (nutrients- chemosynthetic bacteria – waves –heat - all).
- 2-(Euryhaline – Stenohaline – both) are salt intolerant species.
- 3- The marine ecosystem covers about (71% - 97% - 79%) of the earth`s surface.
- 4-The freshwater ecosystem generates about (3% - 41%- 14%) of the net primary production.
- 5- (Streams – rivers - all) are classified under lotic waters.
- 6- (The limnetic zone – the littoral zone – the intertidal zone- all) is the open water of the lake.
- 7- (The epilimnion – the metalimnion – the hypolimnion) is the deepest portion of the lake.
- 8- In lakes; there is rarely any stable vertical stratification of chemical constituents in the (pelagic zone – intertidal zone – littoral zone).
- 9-(Zooplankton – phytoplankton -all) are the weakly swimming organisms.
- 10-Rivers in semiarid climates tend to have excess (nitrates – phosphates –all).

- 6 - Infection of *Taenia solium* occurs through ingestion of larval forms in undercooked beef. ()
- 7 - Infective stage of *Giardia lamblia* is trophozoite ()
- 8 - Infective stage of *Ascaris* sp is cysticercoid larvae ()
- 9 - The insect vectors of *Plasmodium* sp is male anopheles ()
- 10- *Amoeba proteus* lives in human intestine ()
- 11- Chagas disease is caused by *Trypanosoma rhodesiense* ()
- 12- Oocyst is the zygote after the formation of the cyst wall ()
- 13- Infective stage of *Fasciola hepatica* is cercariae ()
- 14- Infective stage of *Entamoeba coli* is quadrinucleated cysts ()
- 15- Zoonoses, are the diseases transmissible between man and other animals ()

Write briefly on five only of the following: (20 marks)
 (illustrating your answer with labeled drawings whenever possible)

- 1- Encystment in *Amoeba* sp.,
- 2- Nutrition and reproduction in Protozoa
- 3-Commensalism and Parasitism
- 4- *Entamoeba histolytica* trophozoites
- 5-Infective stage, mode of infection and habitat of the parasites.
Enterobius vermicularis – *Fasciola gigantica* – *Balantidium coli*
- 6-Sexual cycle of *Plasmodium* sp. in stomach of mosquito

.....
 Good luck
 Prof. dr., Gamal H Abed