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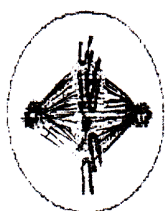
IV- Complete the following sentences with the best word(s). (5 marks, one mark for each)

- 1- Collectively microtubules consists of units of tubulin heterodimers arranged into a spiral.
- 2-is the protein which punches holes in the outer mitochondrial membrane during apoptosis.
- 3- is the intermediate filament found in mesenchymal cells as fibroblastes.
- 4- The folded wrapped DNA forming inactive genes is called.....
- 5-is a part of nucleolus which consists of maturing ribosomes.

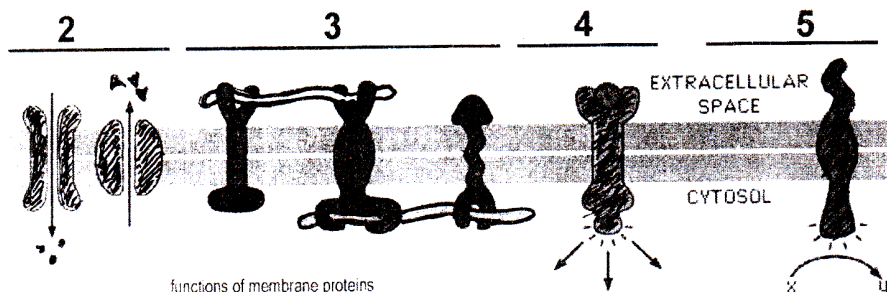
Draw this table in your answer sheet and make your answer therein

Question no.	1	2	3	4	5
Answer					

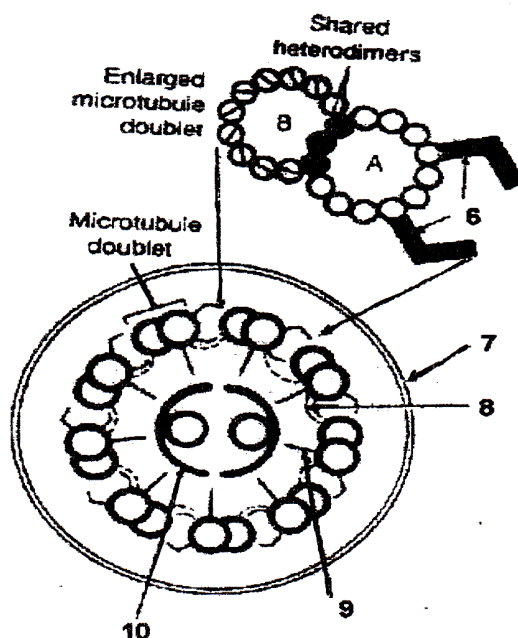
V- Complete the missing labels of the following diagrams. (10 marks, one mark for each)



1-.....



functions of membrane proteins



Draw this table in your answer sheet and make your answer therein

Label no.	1	2	3	4	5	6	7	8	9	10
Answer										

End of questions, Best wishes

Course coordinator and Examiner

Prof. Abobaker Eltayeb



Final Exam. of Cell Biology (312Z) for Zoology Students

June 2017

Time 2 hours

I- Choose the correct answer:

(15 Marks)

- 1- The generation time is the time required for the number of cells in the population to exactly:
a) half b) one third c) double
- 2- The phase of population growth cycle in which there is little or no increase in the number of population cells is called: a) exponential phase b) lag phase c) cycle phase
- 3- Changes in temperature cycle, light cycle and chemical concentrations in a batch culture known as: a) synchrony by induction b) synchrony by selection c) natural synchrony
- 4- The hallmark of AIDS is the decline in the number of patient's:
a) immune system b) T and B cells c) CD4⁺ T cells
- 5- Cell growth and protein production are stop at certain stage in the cell cycle. This stage is?
a) G₂ phase b) M phase c) G₁ phase
- 6- One of the human papilloma virus (HPV) products is a protein (E6) that binds and inactivates the apoptosis promoter → a) P53 b) P58 c) P63
- 7- Which one of the following statements regarding culture fractionation is FALSE?
a) selecting cells at the same age b) selecting cells at the same stage of growth division cycle
c) avoids the potential problems of synchronization techniques
- 8- The various phases of the growth and reproduction of cells constitute what is called:
a) cell growth b) cell cycle c) cell division
- 9- In the programmed cell death, Bcl-2 is bound to a molecule of protein which called:
a) caspase 9 b) Apaf-1 c) TNF-β
- 10- In death by suicide, the phagocytic cells secrete cytokines that:
a) activate cell death b) engulf the died cells c) inhibit inflammation
- 11- The replication of the nuclear DNA occurs in the portion of the cell cycle known as:
a) interphase b) metaphase c) anaphase
- 12- In the death by injury, the cells and their organelles undergo changes like:
a) swell b) shrink c) both of them
- 13- When the population density is high enough for the cells to physically come into contact with each other; this phenomenon is called:
a) continuous culture b) contact inhibition c) non- continuous culture
- 14- The anterior chamber of the eye is immunologically privileged site because their cells express high levels of: a) TNF-α b) Fas c) Fas L

15- The phase of population growth cycle in which the number of cells lost by death and degeneration is greater than produced by cell divisions is known as:

- a) decline phase b) lag phase c) exponential phase

II- Fill in the spaces

(10 Marks)

- 1- Melanoma cells avoid apoptosis by inhibiting the expression of the gene encoding
- 2- To get continuous culture of cell, one popular method involves the use of
- 3- Proliferative genes, such as *c-fos* and others of its kind, are countered by
- 4- The Enzymes that do the unwinding the double-helical structure that makes up DNA called.....
- 5- A free radical can be produced from almost any molecule when
- 6- Testosterone supplementation might trigger excessive red blood cell production in some men which can increase a man's risk of.....
- 7- In a process called, glucose molecules attach themselves to proteins that ends in the protein crosslinking.
- 8- Each time a cell divides, the telomeres get
- 9- The interleukin, rise with age, and it is speculated that interfere in some way with the immune response is called:
- 10- Growth factors include substances whichmany of the actions of hormones.

III- Write the following data:

(17 Marks)

A- In gape 1 (G1) phase, cells are characterized by:

1-

2-

3-

B - In hormonal replacement, supplements of hGH can promote many problems as:

1-

2-

3-

4-

C- Calorically restricted animals live far beyond their normal lifespans due to the following:

1-

2-

3-

4-

5-

6-

D- Programmed cell death is needed to destroy cells that represent a threat to the integrity of the organism, For example:

1-

2-

3-

4-

IV-Answer two only of the following:-

(8 Marks)

1- Apoptosis and AIDS..

2- Heat shock protein.

3- Proliferative genes.



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قسم علم الحيوان

Final Exam: Economic Entomology (342 E)
Credit Hour System 2016/2017

Time: Two Hours
Second Semester

Answer the following questions:

Question no 1 (10 points): Answer by V or X:

- 1- The total number of insect species is estimated at 1–2 million. ()
- 2- All insects are bad and all are in need of control. ()
- 3- Insects are the only winged invertebrates. ()
- 4- The galls are beneficial to the insect, but probably not to the plant. ()
- 5- Wasps stings are barbed & used once while, honey bee stings are smooth & used repeatedly. ()
- 6- Many red flowers are insect pollinated. ()
- 7- Economic value of insect pollination worldwide is estimated at U.S. \$217 billion. ()
- 8- Plants attract insects only by offering nectar meals. ()
- 9- The first step in the IPM decision-making process is a thorough insect pest monitoring. ()
- 10- Pollinators are usually multi-habitat insects. ()

Question no 2 (10 points): Define the following:

- a- Scavengers
- b- Gall formers
- c- Apitherapy
- d- Forensic Entomology
- e- Entomophagy

Question no 3 (10 points): Compare between the following:

- a- Leaf skeletonizers vs. leaf chewers.
- b- Primary damage by defoliators vs. secondary damage.
- c- Economic injury level (EIL) vs. economic threshold (ET).
- d- Predators vs. parasitoids
- e- Medicolegal (criminal) vs. Urban (criminal and civil).

Question no 4 (10 points):

- a- What is the cultural entomology? Give examples of cultural entomology (brief notes).
- b- Write short notes on the three key valuable honey properties.

Question no 5 (10 points):

- a- Write short account on bee venom (BV): Composition, Health and Medicine.
- b- Insects as human and animal feed (Discuss).

Good luck

Amer I. Tawfik



Zoology Department



قسم علم الحيوان

**Final Exam: General Zoology (316Z)
Credit Hour System 2016/2017**

**Time: Two Hours
Second Semester**

Answer the following questions:

1-Compare between the following:-

(10 Marks)

- 1-Direct and indirect immunocytochemistry by drawing with labeled.
- 2- Stripping and coating techniques in autoradiography.

2-Write the chemical formula of the followings :-

(4 Marks)

- 1-Dialdehyde.
- 2- Ribose sugar.
- 3- Glucuronic acid.
- 4 -Periodic acid.

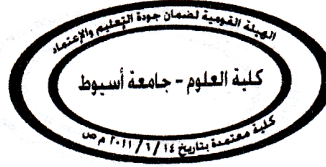
3-Put true or false for the followings

(15 Marks)

- 1-Sudan black are more soluble in fat solvent than fat.
- 2- N-HCL at 60C used for oxidation of DNA & liberated CHO groups.
- 3- Purine basis were removed and free aldehyde groups produced by Hot 1N HCL at 60C during detection of (RNA).
- 4-1% HIO₄ at high temperature used for oxidation of polysaccharides.
- 5- B rays oxidized silver halide into silver granules.
- 6- Photographic emulsion was diluted in dark room.
- 7-Polymeres of orthochromatic structures contain regular space between its units.
- 8-Metachromasia used to detected polymers with space more than 0.4 nm between its units..
- 9-Plasmalogen of the brain can detected with Schiff's reagent .
- 10-Saturated lipids were detected after treated with UV and Schiff's reagent .
- 11- Glycoproteins can be detected immunocytochemically.
- 12-Sulphated acid mucopolysaccharides give negative results with metachromatic stain.
- 13- Glycogen units are glucosamine.
- 14- Bromophenol blue stain polysaccharides.
- 15-Coloration of fat by Sudan black.
- 16- Hydrolysis of DNA by 1N HCL at 60C .
- 17 -Oxidation of polysaccharides by 1%NHIO₄ at RT.
- 18- Wire loope methods were used for light microscope.
- 19- HIO₄ used for detection of proteins.
- 20-In direct method the primary antibody is labeled.
- 21- Coloration of lipids is Chemical methods.



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- 22- Metachromasia, staining substances with same color of stain.
- 23- Schiff's reagent + X-ray + Sections can detect unsaturated lipids.
- 24- RNA can be demonstrated by Feulgen reaction.
- 25- Primary antibody is labeled in indirect immunocytochemistry.
- 26- Glycogen flight is shown in muscles.
- 27- Antibodies are visible.
- 28- Chitin is neutral mucopolysaccharides.
- 29- Ferritin is used for detection of antibody in electron microscope.
- 30- Mono and disaccharides can be detected in section.
- 31- Haematoxylin & eosin are general stains.

(15 Marks)

4-Discuss the followings Choose 3 only:-

- 1- Types of labeling of antibodies.
- 2- Aim of fixatives.
- 3- Control test in demonstration of carbohydrates.
- 4- Metachromasia.
- 5- Demonstration of lipids by physical methods.

(4 Marks)

5-How free aldehyde groups were liberated in the followings reactions:

- 1- Feulgen reaction.
- 2- Plasmalogens.
- 3- Unsaturated lipids
- 4- Demonstration of polysaccharides.

(2 Marks)

6-

(A) Define the fixative.

(B) Mention the name of techniques used to investigate the cell proliferation.

Good Luck

Dr.Hanem Saad Abdel-Tawab



Assiut University
Faculty of Science
Zoology Department



Genetic Engineering (May 2017)

Time: 3 hours
Level: 3rd
Course Code: Z314

Answer the following questions

(50 marks)

I: Choose the correct answer

(8 marks)

1- Neutral comet assay is specific for quantitative analysis of

- a) DNA DSBs b) DNA SSBs c) Base excision d) All are true

2-..... is considered to be Chaotropic agent during DNA extraction

- a) Urea b) Charcoal c) EDTA d) PCNA

3- After DSB induction, resection occurs at DNA broken ends to produce 3' overhang by

- a) Endonucleases b) Exonucleases c) both d) None

4. The site at which crossover may occur between non homologous chromosomes is called

- a) Centromere b) Telomere c) Chiasmata d) Spindle

5. HR repair is

- a) Fast and accurate b) Slaw and accurate c) Error prone and fast d) Error prone and slow

6. I have never heard about a study at which Human was used as an experimental model, irradiated or treated

- a) TRUE b) FASE c) I do not know

7. Formed of four subunits, two of them are smc1 and smc3

- a) SPB b) Centromere c) Sister Chromatids Cohesion d) All are true

8. Meiosis is a single round of chromosomes replication followed by two rounds of segregation

- a) True b) False

II: Define only EIGHT of the following terms

(16 marks)

1- Sister Chromatids Cohesion

2-Kinetochores

3- Telomeres

4- Genetic engineering

5- Meiosis

6- P53

7- Meiotic recombination

8- NHEJ

9- Conditional Knockout Mice

10- A hypomorph Engineered mouse

III: Please put TRUE or FALSE and correct the false.

(8 marks)

- 1- *The flow of genetic information from DNA to RNA to protein, via the processes of transcription and translation is known as the Central Dogma of molecular biology* ()
- 2- *A point mutation is a type of mutation that causes a single nucleotide base substitution, insertion, or deletion of the genetic material* ()
- 3- *A Southern blot is a method used in molecular biology for detection of a specific RNA sequence in RNA sample* ()
- 4- *There are two ways are being used to transfer DNA from gel to membrane: Vacuum transfer and electric transfer* ()
- 5- *To produce transgenic mice, the transformed ES cells are injected in inner cell mass of gastrula stage* ()
- 6- *Proteinase K is used during DNA extraction to precipitate Protein* ()
- 7- *Ethically, it is very wrong to proceed with genetic engineering and it is essential that modified food be labelled with what gene has been added* ()
- 8- *In live bacteria, restriction enzymes function is to defend the cell against invading viral bacteriophages* ()

IV: (B) List Only FIVE of the following

(10 marks)

- 1- Steps of meiotic recombination from the induction of DSBs till the resolution of Junctions.
- 2- The commonly used methods (three) in DNA extraction.
- 3- Types of DNA damage induced after exposure to endogenous or exogenous agents.
- 4- Types of chromosomes.
- 5- Steps of gene cloning.
- 6- Four types of mutations.

V: Mention the function of FOUR of the following

(8 marks)

- 1- Spo11
- 2- EcoR1
- 3- Tag- polymerase
- 4- gamma-H2AX
- 5- PCR

Good Luck, Dr Emad Abdelaziz Ahmed



Answer the Following Questions (50 Marks)

الإجابة في نفس ورقة الأسئلة عدا السؤال الأخير يُجاب عنه في كراسة الإجابة المُعطاة لك.

I- Complete the following sentences: (12.5 Marks)

- 1- The infective stage in flariasis is which exist in the of the insect vector.
- 2- *Anopheles* mosquito can transmit viral disease to human called
- 3- Pathogens multiply in different places inside insect vector; *Yersinia pestis* multiplies in the of a flea insect named , while *Rickettsia prowazekii* multiplication occurs of , in the case of *Borrelia recurrentis* their multiplication occurs in , however in *Trypanosoma brucei* they multiplies in of the insect vector called , however; in *plasmodium sp* multiplication of sporozoites occurs in of
- 4- Infection with tumbo fly (*Cordylobia anthropophaga*) can be prevented or minimized by:
(a)
(b)
- 5- Chronic sleeping sickness is caused by a pathogen named , while acute sleeping sickness is caused by
- 6- House flies can transmit different pathogens of different groups including:
(a) (b) (c) (d)
(e) (f) (g)
- 7- The best results in controlling screwworm cab be achieved by
- 8- The main types of plague are , , and

9- Give the proper term used to describe myiasis affecting the following parts of the body

- (a) When maggots burrow under the surface layers of the skin:
- (b) When wounds become infested with maggots:
- (c) When boil-like lesions are produced due to maggot's infestation:
- (d) When nose infested with maggots:

10- House flies can transmit a large number of pathogens to humans by the following routes:

- (a) By, and
- (b) By
- (c) By

11- In sylvatic cycle of African yellow fever, the reservoir host is

and the main vector is the, in rural cycle, yellow fever virus can be transmitted to human via the insect vector named

12- The following two parasites are transmitted by sand fly and responsible for cutaneous leishmaniasis:

- (a), and transmitted mainly by the insect vector
- (b), and transmitted by the insect vector

13- In West Nile virus; the insect mosquito vector of genus can feed on and transmit virus between both mammals and birds, thus mosquito in this case called

14- The infective stage of *Leishmania* parasite can be transmitted to host via

15- *Rickettsia typhi* can be transmitted to host through:

- (a)
- (b)
- (c)

16- The following are among methods used for personal protection against adult mosquitoes:

- (a)
- (b)
- (c)

II- Mark (✓) for the Correct sentences and (X) for the incorrect ones; correct the underlined part of the sentence when needed: (10 Marks)

- 1- Cysticercoids of *Dipylidium caninum* found in the adult stage of *Ctenocephalides canis*. ()
.....
.....
- 2- *Wohlfahrtia magnifica* may deposit their eggs in scratches, wounds, sores and ulcerations. ()
.....
.....
- 3- *Aedes aegypti* can transmit lymphatic filariasis to humans. ()
.....
.....
- 4- The triatomine bug itself can act as reservoir host of *Trypanosoma cruzi*. ()
.....
.....
- 5- In African yellow fever, uninfected females of different *Aedes species* never produce infected offspring. ()
.....
.....
- 6- Humans get louse-born epidemic typhus infection by louse bite. ()
.....
.....
- 7- The only mode of transmission of *Trypanosoma cruzi* to human is when the excreta of the insect vector is scratched either into skin abrasions or into the site of the bug's bite, or when it gets rubbed into the eyes or other mucous membranes. ()
.....
.....
- 8- Transferring of infectious agents from one adult insect vector to another is called transstadial transmission. ()
.....
.....

9- In the case of *Trypanosoma brucei rhodesiens* the infective stage exist in the salivary glands tsetse fly. ()

10- *Rickettsia prowazekii* can be transmitted from one generation of the vector to another. ()

III- Carefully read and mark the Odd answer: (5 Marks)

1- Phenomenon of transovarial transmission of pathogens is noticed in the following diseases:

- (a) Murine typhus. (b) Trench fever. (c) Sand fly fevers. (d) Dengue fever.

2- The following diseases are zoonotic and transmitted to human by different insect vectors.

- (a) Epidemic relapsing fever. (b) Plague. (c) Rhodesian sleeping sickness.

3- The following adults of both sexes and immature stages are insect vectors of pathogens:

- (a) Fleas. (b) Body louse. (c) Tritomine bugs.

4- Mosquitoes can transmit flaviviruses that are the causative agent of the following diseases:

- (a) West Nile fever. (b) Joint breaker. (c) Yellow fever.

5- Residual spraying is a good method to control the following insect vectors:

- (a) Tritomine bug. (b) Housefly. (c) *Anopheles sp.* (d) Tsetsefly.

IV- Give the scientific meaning of the following: (10 Marks)

1- Amplifying host:

2- Dead-end host:

3- Facultative myiasis:

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

4- Reservoir host:

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

5- Intrinsic incubation period:

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

6- The sporozoite rate:

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

7- Venereal transmission:

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

8- Transovarial transmission:

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

9- Biological transmission:

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

10- Co-feeding transmission:

.....

.....

.....

*** Answer the following question in the given separate answer sheet.**

V- Write short notes on the following: (12.5 Marks)

1- Environmental sanitation control of house flies. (2.5 marks)

2- Maggot therapy. (2 marks)

3- Genetic control of mosquitoes. (2.5 marks)

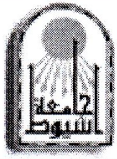
4- Control of body lice. (3 marks)

5- Control of cockroaches. (2.5 marks)

With my cordial wishes,

Dr. Ahmed M. Korayem

سؤال - ٢



Second Term for the Academic Year 2016/2017
Physiology (2) 310Z Final Exam
18/5/2017
Total Marks: 50



I: Choose the correct answer (9 marks)

1-The centers for the control of visceral activities such as heart rate, breathing, swallowing, and vomiting are located in the.....

- a) hypothalamus b) pons c) cerebrum d) medulla oblongata

2-After an action potential is propagated..... rapidly diffuses out of the cell.

- a) potassium b) calcium c) sodium d) chloride

3-Sympathetic and parasympathetic are subdivisions of the.....nervous system.

- a) autonomic b) central c) peripheral d) somatic

4- Cell bodies of the sensory neurons of the spinal nerves are located in.....

- a) the dorsal root ganglia of the spinal cord b) the thalamus c) the hypothalamus
d) the ventral root ganglia of the spinal cord

5-The effects of the sympathetic nervous system are essentially opposite to the....

- a) motor division b) parasympathetic nervous system c) sensory division
d) autonomic nervous system

6-Cerebrospinal fluid circulates through all of the following except.....

- a) corpus callosum b) lateral ventricles c) fourth ventricle d) subarachnoid space

7-Which of these cells are not a type of neuroglia found in the CNS.....

- a) Schwann cells b) oligodendrocytes c) ependymal cells d) astrocytes

8-Impulse conduction is fastest in neurons that are.....

- a) sensory b) unmyelinated c) motor d) myelinated

9-The cranial nerve which contains sensory fibers that are involved in hearing is....

- A) VIII b) IX c) III d) V

10-The neuron processes that normally receive incoming stimuli are called....

- a) presynaptic arborization b) dendrites c) satellite cells d) axons

11- The pituitary gland is most closely associated with the.....

- a) hypothalamus b) medulla oblongata c) pineal gland d) thalamus

12-Which region of the brain is responsible for balancing of the body?

- a) cerebellum b) pons c) medulla oblongata d) thalamus

13)gland release hormones in response to stress.

- a) Adrenal b) Pituitary c) Thyroid d) parathyroid

See Next Page

14)gland affects wake/sleep patterns and seasonal functions.

- a) Pineal b) Adrenal c) Thyroid d) Pituitary

15) Cushing syndrome is hypersecretion ofby the adrenal cortex.

- a) glucocorticoids b) mineralocorticoids c) ACTH d) adrenaline

16) The mechanical and non-gustatory papillae are.....

- a) Filiform b) Foliate c) Circumvallate d) fungiform

17) The sensory nerve fiber in the fingertips and lips are

- a) Meissner's corpuscle b) Merkel's discs c) Ruffini's end-organs d) pacinian corpuscles

18) The change in estrogen hormone secretion is.....

- a) acute b) chronic c) cyclic d) acute and chronic

II: Marks true or false for the following sentences (5 marks):

- 1-The functional layer of endometrium is not sloughed off at menstruation ().
- 2- The single cell can response to more than one hormone at the same time ().
- 3-Oligodendrocytes are the predominant type of neuroglia in white matter ().
- 4-Chemical synapses always transmit the signals in one direction ().
- 5-Catecholamine are catabolized by the actions of COMT & MAO ().
- 6-Emotions depend on a system of ganglia which form the limbic System ().
- 7- Vagus nerve is the only cranial nerve that extends beyond head and neck ().
- 8- Lateral horns are located ONLY in the sacral region ().
- 9- The entire period of spermatogenesis takes about 74 days ().
- 10-Endometrium proliferates under the influence of estrogen ().

III: With labeled diagram answer 4 only of the following (16 marks):

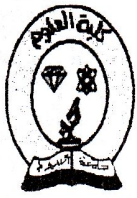
- a- Termination of neurotransmitter action.
- b- Differences between sympathetic and parasympathetic nervous system.
- c- Mechanism of ovulation.
- d- Mechanism of action of water soluble hormone glucagon.
- e- Structure of taste bud sensory cells and taste transduction.

IV- Write on 5 only of the following (20 marks)

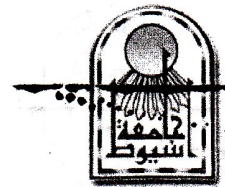
- 1-Neurotransmitter serotonin.
- 2-Name and description of the meninges.
- 3-Define ascending ^{tract} tract with example
- 4-Herring bodies in the neurohypophysis
- 5-Hormones control the female reproductive processes
- 6-Sense of balance

Good Luck!

Dr.Hossam El-Din M. Omar, Prof. of Physiology



Zoology Department



قسم علم الحيوان

Final Exam: Principles of Embryology (334Z)
May, 2017

Time: Two Hours
Second Semester

(1) Choose the correct answer:

(15 Marks)

1-The skeleton and muscles originate during the development from:

a-Yolk plug b- Ectoderm c-Endoderm d-Mesoderm

2-Stage of embryonic development in which differentiation of cells occur:

a-Blastula b- Morula c-Gastrula d- Neurula

3-Meroblastic cleavage occurs in:

a-Amphioxus b-frog c- Rabbit d-None of these

4- Polar bodies are formed during:

Spermatogenesis b-Oogenesis c-Oogenesis

5- Development of egg without fertilization is:

a-Metamorphosis b- Parthenogenesis c- Polyembryone

6-Primitive streak is not found in:

a-Fish b-Mammalia c Aves

7-Acrosome is the structure found with:

a-Mammalian embryo b-Sperm c-Fertilized egg d-Ovum

8-Blastocoel is a circular cavity lined with one layer of cells in

a-Chick b- Amphioxus c- Frog

9-Mammalian sperm penetrates the cumulus by:

a-Acrosin b-Hyaluronidase c-Corona penetrating enzyme

10-Eggs of amphibian are:

a- Microlecithal b-Macrolecithal c- Mesolecithal

11-Corona radiate is present in:

a-Amphibian egg b- Reptilian egg c-Avian egg d-Mammalian egg

12-Placenta is absent in:

a- Prototheria b-Eutheria c-Marsupials

13- Gastrulation of toad involves:

a- Epiboly b- Invagination c-Involution d-All

14- 4pairs of somites are formed after:

a- 12hours of incubation b- 18 hours of incubation
c-24 hours of incubation d- 15 hours of incubation

15-Archenteron is lined with:



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a-Ectoderm b- Endoderm c-Mesoderm d- Mesoderm and endoderm

(2) Draw labelled diagrams (No description) to show the development of rabbit up to gastrula formation. (5 Marks)

(3) Name terms for the following: (5 Marks)

- A-Multicellular embryonic stage with loosely arranged blastomeres.
- B-Transformation of spermatids into sperms without any division.
- C- Entry of more than one sperm into the egg.
- D- Fusion of male and female gametes.
- E-Region of area pellucida without mesoderm.

(4) Answer the following questions: (15 Marks)

- 1- Describe the formation of egg of a bird.
- 2- Classify chorio-allantoic placenta.
- 3- Describe the development of CNS in frog.

(5) Mention whether each of the following statements is true (T) or false (F): (10 Marks)

- 1- Unequal holoblastic cleavage occurs in amphioxus.
- 2- In the midpiece of the sperm the axoneme has triplet nine plus two central single tubular structure.
- 3- By the end of second day of incubation the primitive streak is reduced.
- 4- Vitelline membrane is secondary egg envelop.
- 5-Sperms are produced in the vas deferens.
- 6- The gray crescent is formed in the egg of amphibian after fertilization.
- 7- Yolk plug forms during morulation.
- 8- In the microlecithal eggs of Amphioxus, gastrulation is essentially inpocketing of blastula.
- 9-The egg is divided into two blastomeres by contractile ring of actin and myosin microfilaments.
- 10- A fully developed blastula of chick is coeloblastula.

Good Luck

Prof. Abdallah B. Mahmoud

June 2017

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

A- Fill in the blanks: (10 marks)

- 1- Infection with *Clonorchis sinensis* is due to but infection with *Fasciolopsis buski* is due to
- 2- *Giardia lamblia* lives init multiplies by.....
- 3- The intermediate host of *Fasciola gigantica* isand that of *Echinococcus granulosus* is
- 4- The infective stage of *Balantidium coli* is..... and that of *Trichomonas hominis* is.....
- 5- Infection with *Diphyllobothrium latum* is due to but infection with *Dipylidium caninum* is due to

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

- 1- Pigs acts as intermediate host of (*Taenia solium* – *Dipylidium caninum*- *Balntidium coli* –*Hymenolepis nana* - none of them)
- 2- The infective stage of *Entamoeba histolytica* (mature cyst- quadrinucleated cyst-eightnucleated cyst - none of them)
- 3- Lymnaea truncatula snail is intermediate host of (*Schistosoma Haematobium*-*Fasciola gigantica*-*Schistosoma mansoni*-none of them)
- 4- The second intermediate host of *Heterophyes heterophyes* is (cattle-frogs - pigs-Cyclops - snails - none of them)
- 5- Deer fly is insect vectors of (*Wuchereria bancrofti* - *Trypanosoma* spp. – *Leishmania* spp.- *Plasmodium* spp.- *Entamobea histolytica*- *E. coli* – none of them)

C- Put a suitable(✓) or (X) adjacent to the following: (10 marks)

- 1- Pseudophyllidean cestodes have no gravid segments ()
- 2- Intestinal nematodes do not require an intermediate host to complete their life cycles ()
- 3- Final host, is the host harbouring sexual forms of Protozoa ()

.....انظر خلفه.....

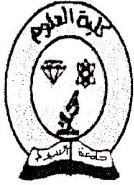
- 4- Egg of *Enterobius vermicularis* contains fully developed larva when deposited ()
- 5- Oncosphere is the egg-encased embryo of cyclophyllidean Tapeworms ()
- 6- Chagas disease is caused by *Trypanosoma rhodesiense* ()
- 7- Infective stage of *Fasciola hepatica* is cercariae ()
- 8 - Infective stage of *Ascaris* sp is cysticercoid larvae ()
- 9- *Trichomonas tenax* lives in human intestine ()
- 10-Infective stage of *Entamoeba coli* is quadrinucleated cysts ()

D- Write briefly on five only of the following: (25 marks)
 (illustrating your answer with labeled drawings whenever possible)

- 1- Economic importance of protozoa.
- 2-Effect of parasites on hosts.
- 3- Types of eggs in *Ascaris* sp.
- 4- Types of cercariae in different species of trematoda.
- 5- Miracidium and Coracidium.
- 6- Microfilaria of *Wuchereria bancrofti* and that of *Loa loa*

.....

Good luck
Prof. dr., Gamal H. Abed



Assiut University
Faculty of Science
Zoology Department
19/5/2017



Third year Exam (Zoology)
Course name: Vertebrate 2
Course code: (330-Z)
Time: 2 hours

Answer the four following questions

Question 1:

(15 marks)

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

1. Amniota includes

- a) Amphibia and Reptiles
- b) Birds and mammals only
- c) Reptiles and Birds only
- d) Non of the above is correct

2. The stem of reptiles

- a) Archosauria
- b) Saltoposuchus
- c) Archopteryx
- d) Cotylosauria

3. Living Anapsidian reptiles

- a) Snakes
- b) Lizards
- c) Turtles

d) Amphisbiana

4. Reptiles live in aquatic habitat

a) Crocodiles only

b) Varanus only

c) Crocodiles and sphenedon only

d) Crocodiles, sphenedon and Varanus

5. Head movement of amniotic vertebrates achieved by

a) The cervical vertebrae

b) The centrum of vertebrae

c) The modified second vertebra

6. Which of the following move on inverted surfaces

a) Skinks

b) Geckos

c) Chameleons

d) Snakes

7. Amniotic vertebrate classes possess sinus venous in its heart

a) Amphibia

b) Reptilia

c) Aves

d) Mammalia

8. Which of the following preserve a paired systemic arch

- a) Reptiles
- b) Birds
- c) Mammals
- d) Non of the above

9. The synapsid skull found in

- a) First reptiles
- b) Pterosaurs
- c) Mammalian ancestors
- d) Archosaurs

10. The amniotic kidneys are

- a) Pronephros
- b) Mesonephros
- c) Metanephros

11. Diaphragmaticus exist in

- a) All reptiles
- b) Crocodiles
- c) Birds
- d) All mammals and crocodiles

12. Aquatic reptiles excrete

- a) Ammonia
- b) Urea
- c) Uric acid
- d) Urine

13. Red blood cells of mammals are

- a) Multinucleated
- b) Nucleated
- c) Anucleated

14. Avian female has

- a) Single ovary b) Pair of ovaries

15. Accessory cranial nerves in amniotes are

- a) Optic and Ophthalmic
- b) Trigeminal and auditory
- c) Spinal accessory and Hypoglossal
- d) Oculomotor and vagus

.....

Question 2:

(10 marks)

- Complete the following sentences

1. Air born sounds transmit through theof
bird to the.....
2. The reptilian lower jaw composed of
.....
3. Give two avian characters achieve the lightness of their
body.....
.....
4. Egg shell is secreted by.....

5. Give three characters for the flightless birds.....

.....

.....

Question 3:

(10 marks)

- Illustrate the structure of the avian heart with full description of the blood vessels which enter or emerge from it.

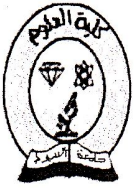
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Question 4:

(15 marks)

- **Describe three items of the following**

- A- The embryonic membranes
- B- The avian system
- C- The air sac system
- D- Lizard skull.



Assiut University
Faculty of Science
Zoology Department
19/5/2017



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Course code: (330-Z)
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امتحان الفصل الدراسي الثاني
للعام الجامعي 2017/2016



القسم الذي يقدم المقرر: المحاصيل الفرقة: المستوى الثالث (ساعات معتمدة) - كلية العلوم

اسم المادة وكودها: تصميم التجارب (316 ز)
لجنة الممتحنين: أ.د. عاطف أبو الوفا أحمد ، د. محمد بدري محمد علي
المراجع الداخلي: أ.د. عادل محمد محمود

الامتحان في صفتين

PART 1: TRUE/FALSE

[10 points]

Directions: Read each statement below carefully. Place a **T** on the line if the statement is **TRUE**. Place an **F** on the line if the statement is **FALSE**.

1. Arithmetic mean works well for data that are highly skewed.
2. The median is used to construct box and whisker plot.
3. The greater the SEM value, the less precise our data becomes.
4. A correlation coefficient of 1.0 means the correlation is positive and strong.
5. For any statistical test, if the $p\text{-value} > 0.05$, you fail to reject the null hypothesis.
6. If you failed to reject a false null hypothesis, then you committed type II error.
7. $[H_0: \rho = 0]$ is the null hypothesis for testing correlation coefficient.
8. Negative slopes suggest that as X increases, Y tends to decrease.
9. The null hypothesis of Hartley's test states that all means are the same.
10. A t statistic for a correlation coefficient has degrees of freedom = $(n - 1)$.

PART 2: ANSWERS THE FOLLOWING QUESTIONS

[10 points]

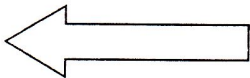
1. What are the three assumptions of the analysis of variance?
2. Define the hidden replication.
3. Lines are characterized by their slope and intercept.
 - a. What does the slope tell you about the line?
 - b. What does the intercept tell you?

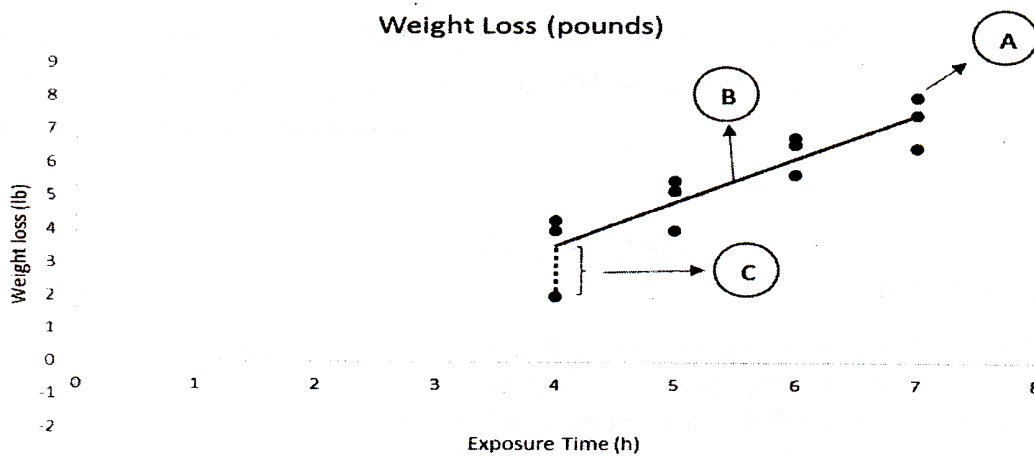
PART 3: MULTIPLE CHOICE

[10 points]

Directions: Read each question carefully, and then **CIRCLE THE ANSWER** that best fits the question.

The following figure shows the relationship between exposure time (hours) to air and the weight loss (pounds) of a particular compound.





- The letter A in the figure represents:
 - The predicted line
 - The observed value
 - The residual
- The letter B in the figure represents:
 - The predicted line
 - The observed value
 - The residual
- The letter C in the figure represents:
 - The predicted line
 - The observed value
 - The residual

PART 4: ANSWERS THE FOLLOWING QUESTIONS

[20 points]

A. Suppose that you have the following information:

[10 points]

$\bar{x}_1 = 42.13$, $\bar{x}_2 = 43.23$, $n = 10$, pooled standard deviation = 0.717, $t_{0.05/2} = 2.101$

- Is there significant difference between the two means?
- Calculate the confidence intervals at $\alpha = 0.05$

B. Using the following data:

[10 points]

		Factor A	
		Low	High
Factor B	High	30	52
	Low	20	42

- Calculate the main effects for factors A and B.
- Calculate the interaction effect between A and B.

----- [End of questions] -----

With my best wishes

Page 2 of 2

لجنة الممتحنين:

أ.د. عاطف أبو الوفا أحمد

د. محمد بدري محمد علي

المراجع الداخلي

أ.د. عادل محمد محمود

Answer the following questions:

(50 marks)

I- Write the scientific term of the following statements:

(10 marks)

1. Moving of members of a population out of a given area. (.....)
2. The study of changes in the size and composition of populations, and the factors influencing these changes. (.....)
3. Individuals of different species compete for the same resource. (.....)
4. The total number of organisms in the population. (.....)
5. The number of organisms of different ages. (.....)
6. Factors allow a population to increase under ideal conditions, potentially leading to exponential growth. (.....)
7. A group of spatially separated subpopulations connected by active exchanges of individuals among subpopulations. (.....)
8. The maximum number of individuals of a given population which can be sustained infinitely in a given area. (.....)
9. All environmental factors which limit the growth of populations. (.....)
10. A group of organisms born at the same time. (.....)

II- Choose the correct answer and also write its letter in the answers table below:

(20 marks)

1-.... is a form of competition in which individuals of different species compete for the same resources.

- | | |
|------------------------------|------------------------------|
| A) Intraspecific competition | B) Exploitative |
| C) Apparent | D) Interspecific competition |

2- Which distribution pattern does territoriality produce?

- A) Random
- B) Uniform
- C) Clumped
- D) None of the above

3-..... ecology deals with the array of ecosystems and their arrangement in a geographic region.

- A) Population
- B) Ecosystem
- C) Landscape
- D) Both A and B

4- is a release of chemical substances by plant species that inhibit the growth of another.

- A) Allelopathy
- B) Autotoxicity
- C) Antibiosis
- D) Both A and B

5- means a community plus the nonliving factors with which it interacts.

- A) Population
- B) Ecosystem
- C) Landscape
- D) Both A and B

6- Which one of the following is NOT a density-dependent factor.

- A) Competition
- B) Predation
- C) Parasitism
- D) None of the above

7- The growth rate of a population slows as intraspecific competition becomes more

- A) intense
- B) poor
- C) weak
- D) None of the above

8- is a relationship between two organisms where one is destroyed while the other is unaffected.

- A) Commensalism
- B) Mutualism
- C) Amensalism
- D) Parasitism

9- All of the following can improve the abilities of predators except

- A) poison
- B) webs
- C) camouflage
- D) weight

10- What type of survivorship curve do humans have?

- A) Type I
- B) Type II
- C) Type III
- D) Type IV

11- The statistical study of populations is called

- A) density
- B) dispersion
- C) demography
- D) fecundity

12- The age distribution of a population reflects its

- A) history of survival
- B) reproduction
- C) potential for future growth
- D) all of the above

13-is an antagonistic association between an organism and the metabolic substances produced by another.

- A) Antibiosis
- B) Mutualism
- C) Commensalism
- D) None of the above

14- Which of the following factors will affect population growth rates?

- A) net emigration
- B) net immigration
- C) birth rate
- D) all of the above

15- One of the following is Not related to the others

- A) Predators
- B) Prey
- C) Pathogens
- D) Parasites

16- What type of population associated with age pyramid which has an extremely broad base?

- A) a rapidly expanding population
- B) a stable population
- C) a population where the birth rate = the death rate
- D) a population with more males than females

17-is a form of competition where there is a winner and a loser.

- A) scramble
- B) Exploitative
- C) contest
- D) interspecific competition

18- One of the following is Not a result of intraspecific competition.

- A) Territoriality
- B) Dispersal
- C) Constant loss
- D) Social interactions

19- All factors which limit the growth of populations

- A) environmental resistance
- B) Biotic Potential
- C) population growth
- D) Both A and B

20- The number of individuals per unit area determines the population's

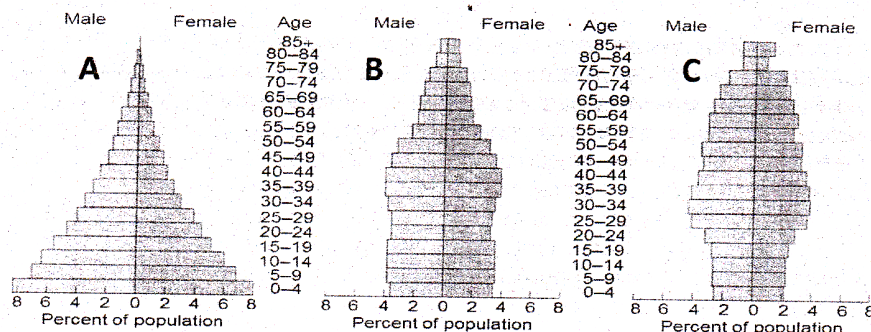
- A) survivorship
- B) density
- C) mortality
- D) age distribution

Answers table

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Answer																				

III- Answer ONLY FIVE questions of the following: (20 marks)

1. The following graphs show Age Structure in different Human populations. Complete the following sentences.



- a) Population is a slow growth e.g.
- b) Population is a rapid growth e.g.
- c) Population is a decrease e.g.
- d) Generally, in aging populations the ratio of young to adult is approximately
-
2. In a mark – recapture study of snowshoe hares population, 50 snowshoe hares are captured in box traps, marked with ear tags and released. Two weeks later, 100 hares are captured and checked for ear tags. If 10 hares in the second catch are already marked (10%). What approximately, is the estimated population size of hares?
-
-
-
-
-
3. "There are many sampling methods to estimate population size and density". Mention the main sampling techniques of animal populations.
-
-
-
-

4. Illustrate the important aspects of life histories

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5- Mention how to estimate patterns of survival within a population.

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6- The following table illustrates the fifteen largest countries and their annual population increases (comment).

Rank	Country	2001 Population (millions)	Rate of Increase (%)
1	China	1,273	0.9
2	India	1,033	1.7
3	United States	285	0.6
4	Indonesia	206	1.7
5	Brazil	172	1.5
6	Pakistan	145	2.8
7	Russia	144	-0.7
8	Bangladesh	134	2.0
9	Japan	127	0.2
10	Nigeria	127	2.8
11	Mexico	100	1.9
12	Germany	82	-0.1
13	Vietnam	79	1.4
14	Philippines	77	2.2
15	Egypt	70	2.1

انتهت الأسئلة مع خالص التمنيات بالتوفيق
أ.د. خالد فؤاد عبد الوكيل
H. F. Wakeel