
	Assiut University- Faculty of Science Frist Semester- Final Exam 2025-2026 Zoology and Entomology Department	Program: Zoology Level : (1) Date: 23/1/2026 Time: 2h	
Course Title: General Zoology		Code: 100Z	
Instructors: Drs. Safaa Megally, Hanan Salah Waly, and Alshaimaa Ahmed Alghriany			
No. of pages 4	No. Of questions 50	Total Mark:50 degree	

(Q1): Choose the best single correct answer (50 marks, One mark for each)

1	What is the main component of the cell coat or glycocalyx? Δ
	A) Proteins B) Lipids C) Carbohydrates D) Nucleic acids
2	Which organelle is responsible for lipid synthesis and detoxification? \blacksquare
	A) Rough endoplasmic reticulum B) Smooth endoplasmic reticulum C) Golgi apparatus D) Lysosome
3	What is the function of the nuclear pores? \bullet
	A) To regulate cell growth B) To synthesize proteins C) To control RNA transport D) To maintain nuclear structure
4	Which type of protein is embedded within the cell membrane? \diamond
	A) Peripheral protein B) Integral protein C) Transmembrane protein D) Both B and C
5	What is the primary function of lysosomes? *
	A) To synthesize proteins B) To store genetic information C) To digest cellular waste D) To regulate cell growth
6	Which type of cell is characterized by the absence of a definite nucleus? \blacksquare
	A) Eukaryotic cell B) Prokaryotic cell C) Plant cell D) Animal cell
7	What is the function of the nucleolus? \bullet
	A) To synthesize proteins B) To regulate cell growth C) To synthesize ribosomes D) To control cell division
8	Which organelle is responsible for generating energy for the cell? \diamond
	A) Mitochondria B) Endoplasmic reticulum C) Golgi apparatus D) Lysosome
9	What is the process by which molecules move from high to low concentration through a protein? *
	A) Active transport B) Passive transport C) Facilitated diffusion D) Osmosis
10	What is the role of centrioles in cell division? \bullet
	A) To synthesize proteins B) To regulate cell growth C) To form spindle fibers D) To maintain nuclear structure

Δ Remember \blacksquare Understand \bullet Apply \diamond Analysis *Evaluate \circ Create

11	What is the structure of ribosomes? Δ A) One subunit B) Two subunits of equal size C) Two subunits, one twice the size of the other D) Three subunits
12	What is the nature of cytoplasmic inclusions? ○ A) Permanent components of cytoplasm B) Temporary components of the cytoplasm C) Living components of the cytoplasm D) Structural components of the cytoplasm
13	What is the term for a group of cells that are similar in structure and perform common or related functions? Δ A) Organ B) Tissue C) System D) Organism
14	How do the superficial cells of transitional epithelium change in response to stretching? ◇ A) They become taller and more columnar B) They become shorter and more squamous C) They remain unchanged D) They become more cuboidal
15	What is the term for glands that release their secretions through the breakdown of the entire cell? * A) Merocrine glands B) Apocrine glands C) Holocrine glands D) Endocrine glands
16	What is the main function of myoepithelial cells in glands? Δ A) To synthesize proteins B) To regulate cell growth C) To contract and expel secretions D) To maintain cellular homeostasis
17	What is the main component of connective tissue? Δ A) Cells B) Fibers C) Matrix D) All of the above
18	Which cell type is responsible for producing antibodies? ■ A) Plasma cells B) Mast cells C) Macrophages D) Lymphocytes
19	What is the function of elastic fibers in connective tissue? ● A) To provide strength B) To provide flexibility C) To provide structure D) To facilitate cell signaling
20	Which type of connective tissue is characterized by a large lipid droplet? ◇ A) White adipose tissue B) Brown adipose tissue C) Areolar connective tissue D) Dense regular connective tissue
21	Which type of connective tissue is rich in blood supply and has a solid matrix? ■ A) Cartilage B) Bone C) Adipose tissue D) Areolar connective tissue
22	What is the term for the cell membrane of muscle fibers? Δ A) Sarcoplasm B) Sarcolemma C) Myofibril D) Cytoplasm

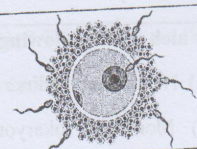
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23	What is the characteristic of cardiac muscle contraction? ◊	A) It is voluntary	B) It is involuntary and spontaneous
		C) It is regulated by the nervous system	D) It is dependent on skeletal muscle contraction
24	What is the function of neuroglia in the central nervous system? *	A) To transmit nerve impulses	B) To synthesize neurotransmitters
		C) To form the connecting tissue between neurons	D) To regulate blood flow
25	Which cells are responsible for forming the myelin sheath around peripheral nerve axons? •	A) Ependymal cells	B) Satellite cells
		C) Schwann cells	D) Spongioblast cells
26	Which of the following combinations is incorrect? ■	A) Nematoda - Cylindrical body - Pseudocoelomate	B) Spong - Multicellular - body with pores
		C) Monera - Prokaryotes - Bacteria	D) Mollusca - Coelomate - Deuterostomes
27	An order is a group of related ◊	A) Species	B) Classes
		C) Families	D) Genera
28	<i>Wuchereria bancrofti</i> belongs to phylum Δ	A) Mollusca	B) Arthropoda
		C) Annelida	D) Nematoda
29	A stinging organ of Hydra Δ	A) Paraodia	B) Nematocytes
		C) Medusa	D) Haemocoel
30	Give an example of Acoelomate animal ◊	A) <i>Ascaris</i>	B) Earthworm
		C) <i>Fasciola</i>	D) Spider
31	In phylum porifera the outer layer of flattened contractile cells is called..... Δ	A) Pinacocytes	B) Archaeocytes
		C) Sclerocyte	D) Choanocytes
32	Which one of the following has a closed circulatory system? ■	A) Arthropoda	B) Cephalopoda
		C) Leeches	D) Insects
33	Nephridia is the structural unite of the excretory system of phylum Δ	A) Annelida	B) Platyhelminthes
		C) Porifera	D) Cnidaria
34	In chordates the direction of blood flow in the dorsal blood vessels is ■	A) Forward	B) Backward
		C) From tail to head	D) Lateral
35	The first pair of wings in insects is ■	A) Prothoracic	B) Mesothoracic
		C) Metathoracic	D) Median
36	In vertebrates' embryonic development becomes gradually replaced by the vertebral column Δ	A) The spinal cord	B) The notochord
		C) The nerve cord	D) The gill-slits

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37	In Phylum Arthropoda the nerve cord is Δ	A) Dorsal	B) Ventral	C) Nerve net	D) Ladder form
38	Isolecithal eggs have little yolk distributed uniformly through the cytoplasm as eggs of Δ	A) Birds	B) Arthropods	C) Mammals	D) Insects
39	The technical name of twins which have separate placentas and umbilical cords called \blacksquare	A) Monochorionic	B) Dichorionic	C) Monoamniotic	D) Dinoamniotic
40	A repeated mitotic division to form large numbers of small cells Known as..... Δ	A) Cleavage	B) Organogenesis	C) Blastula formation	D) Gastrulation
41	The opposite figure refers to the process of \diamond	A) Gametogenesis	B) Fertilization	C) Oogenesis	D) Spermatogenesis
42	..... is the first stage in spermatogenesis. \blacksquare	A) Maturation phase	B) Growth phase	C) Spermiogenesis	D) Multiplication phase
43	..... is a three-layered embryo. Δ	A) Cleavage	B) Blastula	C) Gastrula	D) Morula
44	The deficiency of iodine in food or water causes a disease related to country known as..... \blacksquare	A) Tetany	B) Endemic goiter	C) Exophthalmic goiter	D) Mixdema
45	Which of the following Estrogen is CORRECT? \bullet	A) Decreases uterine contraction during pregnancy	B) Has protein anabolic action	C) Increases red blood cells	D) development of female secondary characteristics
46	From abnormalities of growth hormone (GH) secretion is CORRECT? \diamond	A) Hypo-secretion of GH before puberty causes acromegaly.	B) Hyper-secretion of GH after puberty causes gigantism.	C) Hyper-secretion of GH before puberty causes acromegaly.	D) Hyper-secretion of GH after puberty causes acromegaly.
47	Pituitary dwarfism disorder includes all the following EXCEPT? \diamond	A) Decrease bone growth.	B) Insufficient amounts of growth hormone	C) Mentally retardation.	D) Normal sexual life.
48	..... is specialized cells present in Islets of Langerhans and responsible for secreting insulin. Δ	A) Alpha cells	B) Beta cells	C) Delta cells	d) F cells
49	One only of the following hormones has anti-aging properties. \blacksquare	A) TSH	B) LH	C) Melatonin	D) Thyroxine
50	Oxytocin secreted from..... causing uterine contraction during childbirth. \blacksquare	A) Anterior pituitary	B) Posterior pituitary	C) Mammary gland	D) Ovary



End of Exam Best Wishes Drs. Safaa Megally Ali, Hanan Salah Waly, and Alshaimaa Ahmed Alghriany

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	Assiut University- Faculty of Science Frist Semester- Final Exam 2025-2026 Zoology and Entomology Department	Program: Zoology Level : (2) Date: 11/1/2026 Time: 2 h	
Course Title: Cytology		Code: 210 Z	
Instructors: Prof. Dr. Gamal El-Sokkary			
Important:	No. of pages 4	No. Of questions 4	Total Mark:50 degree

I- Choose the correct answer and cite it in the answer table: ■ (20 marks)

- 1- The play a role in moving and shifting cytoplasmic components (cytoplasmic streaming).
 - A. microvilli
 - B. phospholipid layer
 - C. glycolipid layer
 - D. microfilaments
- 2- The nuclear envelope is a parallel membrane units separated by a narrow space called:
 - A. perinuclear cristae
 - B. internuclear cristae
 - C. perinuclear cisterna
 - D. outer nuclear cristae
- 3- Endogenous pigments include:
 - A. carotene
 - B. minerals
 - C. melanin
 - D. Dust pigment
- 4- SER involved in the breakdown of glycogen due to the presence of certain enzyme. Which one of the following?
 - A. alkaline phosphatase
 - B. glucose-6-phosphatase
 - C. acid phosphatase
 - D. all of them
- 5- The phase of Golgi apparatus which receives the transfer vesicles from the RER is
 - A. vesicular phase
 - B. mature phase
 - C. granular phase
 - D. immature phase
- 6- In the phagocytic cells There is a lot of
 - A. lysosomes
 - B. peroxysome
 - C. ribosome
 - D. kidney cells
- 7- Ribosomes are composed of almost 80 different proteins and.....
 - A. 8 types of ribosomal RNA
 - B. 4 types of ribosomal RNA
 - C. 20 types of ribosomal RNA
 - D. 12 types of ribosomal RNA
- 8- In skeletal muscle, the..... appear as a paracrystalline array integrated with thick myosin filaments.
 - A. microvilli
 - B. microtubules
 - C. microfilaments
 - D. keratin
- 9- Euchromatin is:
 - A. visible by the LM
 - B. represents the metabolically inactive DNA
 - C. not visible by the LM
 - D. granulated
- 10- Meiosis I known as:
 - A. splitting
 - B. duplication
 - C. division
 - D. reduction
- 11- In the amphipathic molecules of phospholipids, the head linked to tail by:
 - A. phosphate group
 - B. sulphate group
 - C. carbonate group
 - D. hydroxyl group

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- 12- In the metaphase, the chromosomes migrate to:
- A. the two sides of the cell B. the equator of the spindle
C. one side of the cell. D. the nucleus
- 13- Genetic abnormalities of spectrin structure lead to:
- A. cell division B. membrane fluidity
C. membrane transport D. anemia
- 14- The centromeres still intact in:
- A. anaphase II B. anaphase I
C. metaphase I D. metaphase II
- 15- Each single strand of DNA is a chain of
- A. nucleotides B. pentose sugar
C. nitrogen bases D. phosphor
- 16- Mutation to the gene encoding subunit 4 of the NADH-C0Q reductase causes:
- A. Kaerns-Sayre syndrome B. ragged muscle fibers
C. Leber's syndrome. D. all of them
- 17- Which one of the following statements concerning cilia is FALSE?
- A. they are nearly identical to basal bodies B. they contain dynein arms
C. they contain 9 pairs of microtubules D. they are multiple structures on the organism
- 18- The type of RNA that formed inside the nucleus from a special type of DNA molecule known as:
- A. mRNA B. rRNA
C. tRNA D. all of them
- 19- Sarcoplasmic reticulum is a specialized form present in:
- A. nerve cells B. muscle cells
C. liver cells D. epithelial cells
- 20- Lyzosomal enzymes are packaged as lysosomes in
- A. RER B. SER
C. mitochondria D. Golgi body

The answer table

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

II-Fill in the space: Δ

(16 marks)

- 1- Pars fibrosa in the nucleolus consisting of
- 2- The temporary components of the cytoplasm are
- 3- In a cell, DNA replication begins at specific locations in the genome called
- 4- The open phase nucleus contain large amount of

- 5- The primer that used to initiate DNA synthesis at known sequences in a template molecule known as:
- 6- In the mitochondria, the intermembrane space is surrounded by
- 7- The linear molecule similar to DNA except that it is single stranded and contain ribose known as
- 8- The pyruvate enters mitochondria and is converted into
- 9- Secondary lysosomes are known aswhen their contents are of extracellular origin.
- 10- The monocyclic nitrogenous bases that found in DNA are called
- 11- The division of cytoplasm is known as
- 12- Recognition of nerve cells for other nerve cells during synaptic formation is called:
- 13- The type of RNA that formed in the nucleolus from a loop of DNA is called
- 14- The transport processes that not require energy is called
- 15- The enzyme that synthesizes the new DNA by adding nucleotides matched to the template strand is called:
- 16- The appearance or disappearance of cytoplasmic inclusions depending on

III- Write the following data: •

(7 marks)

A- The characteristics of the cytoplasm are:

1-

2-

3-

B- The membranous organelles are characterized by:

1-

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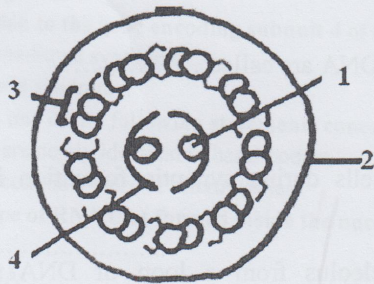
2-

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4-

IV- Write the label for the diagrams: ■

(7 marks)



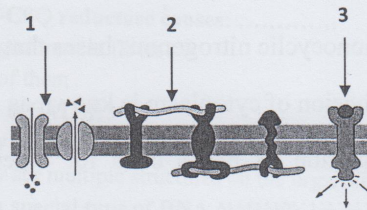
1-

2-

3-

4-

B



1-

2-

3-

End of Exam

Best Wishes Prof. Dr. Gamal El-Sokkary