

Histology Evaluation Exam

First Year Medical Students – 14 April 2015

جميع الأجوبة في ورقة الإجابة

Time allowed: 2 hours

Section A: (15 Marks)

Choose The Most Correct Answer:

1) Phase-contrast microscopy:

- a) Is used to demonstrate cell organelles.
- b) Reveals transparent objects.
- c) Produces colored images.
- d) Utilizes ultraviolet rays.
- e) Its resolution is higher than other types of LM.

2) Trypan blue is used to demonstrate:

- a) Phagocytic cells.
- b) Mast cells.
- c) Plasma cells.
- d) Collagen fibers.
- e) Eosinophils.

3) The approximate thickness of the plasmalemma is:

- a) 2 nanometers.
- b) 8 nanometers.
- c) 20 nanometers.
- d) 40 nanometers.
- e) 60 nanometers.

4) The following is true about ribosomes EXCEPT:

- a) They are non-membranous cell organelles.
- b) Their dimensions are about 12 x 25 nanometers.
- c) They are composed of two equal subunits.
- d) They are manufactured in the nucleolus.
- e) They are basophilic in staining.

5) The vital product of mitochondria is:

- a) ATP
- b) ADP
- c) DNA
- d) RNA
- e) Glucose

6) The nucleus contains the following EXCEPT:

- a) Heterochromatin.
- b) Endosomes.
- c) Lamins.
- d) Histones.
- e) Nucleoplasm.

7) Chromosomes are less visible during:

- a) Prophase.
- b) Metaphase.
- c) Anaphase.
- d) Telophase.
- e) Interphase.

8) Apoptosis is associated with:

- a) DNA fragmentation.
- b) Cell membrane damage.
- c) Mitochondrial swelling.
- d) Cytoplasmic swelling.
- e) Inflammation.

9) The following are connective tissue cells EXCEPT:

- a) Lymphocytes.
- b) Adipose cells.
- c) Kupffer cells.
- d) Plasma cells.
- e) Myofibroblasts.

10) The following is true about Klinefelter syndrome EXCEPT:

- a) Have two X chromosomes.
- b) Have one Y chromosome.
- c) Patients are considered as males.
- d) Occurs due to chromosomal translocation.
- e) Their pattern is (47, XXY).

11) Epithelium is characterized by the following EXCEPT:

- a) Cells tend to form junctions.
- b) It is mitotically active.
- c) Little intercellular material.
- d) Does not contain blood vessels.
- e) Absence of cell polarity.

12) Which one of the following is TRUE about paracrine glands:

- a) Classified as endocrine glands.
- b) Classified as exocrine glands.
- c) Secretions reach the bloodstream.
- d) Secretions reach the target cells by diffusion.
- e) They are holocrine glands.

13) Pseudostratified columnar epithelium is characterized by:

- a) Absence of microvilli or cilia.
- b) May contain goblet cells.
- c) Has no basement membrane.
- d) Contains 4-5 cell layers.
- e) All its cells are similar in shape.

14) Osteoblasts are present in:

- a) Bone marrow.
- b) Loose connective tissue.
- c) Interstitial concentric lamellae.
- d) The endosteum.
- e) Articular surfaces.

15) The following are classified as hyaline cartilage EXCEPT:

- a) Thyroid cartilage.
- b) Tracheal cartilage.
- c) Costal cartilage.
- d) Articular cartilage.
- e) Cartilage of the ear pinna.

16) Types of glycosaminoglycans (GAGs) include the following EXCEPT:

- a) Dermatan sulfates.
- b) Chondroitin sulfates.
- c) Keratan sulfates.
- d) Immunoglobulins.
- e) Heparan sulfates.

17) The largest connective tissue cells are:

- a) Fibroblasts.
- b) Fat cells.
- c) Plasma cells.
- d) Eosinophils.
- e) Macrophages.

18) Spinal ganglia are characterized by the following EXCEPT:

- a) Myelinated nerve fibers.
- b) Neurons are arranged in cell groups.
- c) Neurons are large in size.
- d) Presence of multipolar neurons.
- e) Frequent satellite cells.

19) The normal range of the erythrocyte diameter is:

- a) 8-9 μm
- b) 6-8 μm
- c) 7-8 μm
- d) 7-10 μm
- e) 9-10 μm

20) The fastest type of synapse is:

- a) Chemical synapse.
- b) Symmetrical synapse.
- c) Electrical synapse.
- d) Asymmetrical synapse.
- e) Axodendritic synapse.

21) Schwann cells are characterized by the following EXCEPT:

- a) They are similar to astrocytes.
- b) They form the segmented myelin sheath.
- c) They are present in the peripheral nerves.
- d) They are interrupted by nodes of Ranvier.
- e) They play a role in regeneration of neurons.

22) Cells forming the blood-brain barrier are:

- a) Microglia.
- b) Oligodendrocytes.
- c) Schwann cells.
- d) Ependymal cells.
- e) None of them.

23) Diads are usually seen in:

- a) Cardiac muscles by EM.
- b) Cardiac muscles by LM.
- c) Skeletal muscles by EM.
- d) Skeletal muscles by LM.
- e) Smooth muscles by EM.

24) Internal elastic lamina is most clearly seen in:

- a) Aorta.
- b) Arterioles.
- c) Medium sized veins.
- d) Muscular arteries.
- e) Inferior vena cava.

25) The normal total leukocytic count is:

- a) 1000-50000 /mm³
- b) 2000-70000 /mm³
- c) 7000-11000 /mm³
- d) 5000-12000 /mm³
- e) 4000-10000 /mm³

26) The following is true about blood platelets EXCEPT:

- a) Their number is about 90000/ml.
- b) Their lifespan is about 10 days.
- c) Contain actin & myosin.
- d) Derived from megakaryocytes.
- e) Contain hyalomeres.

27) Calcium ions enter the muscle fibers through:

- a) rER.
- b) Microtubules.
- c) T-tubules.
- d) Gap junctions.
- e) Nuclear membrane.

28) Purkinje fibers are characterized by the following EXCEPT:

- a) Contain glycogen.
- b) Present in the moderator band.
- c) Contain few myofibrils.
- d) Conduct electrical signals.
- e) Smaller than cardiac myocytes.

29) Hassall's corpuscles are found in:

- a) Cortex of the thymus gland.
- b) Medulla of the thymus gland.
- c) Cortex of lymph node.
- d) Medulla of lymph node.
- e) Red pulp of the spleen.

30) In lymph nodes; T-lymphocytes are mainly found in:

- a) Superficial cortex.
- b) Medulla.
- c) Deeper cortex.
- d) Hilum.
- e) Subcapsular sinuses.

- **Section B: (10 Marks)**

Give Reason For The Following Facts:

- 1) Crossing-over of chromosomes occurs in meiosis but not in mitosis.
 - 2) Presence of fibrocartilage in the intervertebral discs.
 - 3) Regeneration of neurons is possible in the peripheral nervous system, and impossible in the CNS.
 - 4) Skeletal red muscle fibers can contract longer than white fibers.
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- **Section C: (15 Marks)**

Write short notes about the following, demonstrating with diagrams when possible:

- 1) Structure and function of rough endoplasmic reticulum. (4 marks)
- 2) Types of connective tissue cells. (4 marks)
- 3) Enumerate blood cells & their normal count. (4 marks)
- 4) Section in a lymph node. (3 marks)

Good Luck
MCQ Answer Sheet

1	a	b	c	d	e	16	a	b	c	d	e
2	a	b	c	d	e	17	a	b	c	d	e
3	a	b	c	d	e	18	a	b	c	d	e
4	a	b	c	d	e	19	a	b	c	d	e
5	a	b	c	d	e	20	a	b	c	d	e
6	a	b	c	d	e	21	a	b	c	d	e
7	a	b	c	d	e	22	a	b	c	d	e
8	a	b	c	d	e	23	a	b	c	d	e
9	a	b	c	d	e	24	a	b	c	d	e
10	a	b	c	d	e	25	a	b	c	d	e
11	a	b	c	d	e	26	a	b	c	d	e
12	a	b	c	d	e	27	a	b	c	d	e
13	a	b	c	d	e	28	a	b	c	d	e
14	a	b	c	d	e	29	a	b	c	d	e
15	a	b	c	d	e	30	a	b	c	d	e

Good Luck
Dr. Mohammad Kasem