EPITHELIUM

1-All are sites of cubical epithelium ,Except:

a- lining of kidney tubules. b- ducts of many glands
c- lining of thyroid follicles d- Osophegus
e- All of the above.

2- What type of tissue lines the urinary bladder?

a. Simple squamous epithelium b. Simple cuboidal epithelium
c. Simple columnar epithelium d. Transitional epithelium
e. Stratified squamous epithelium

3-What do you call the simple squamous epithelium that lines the blood vessels?

a. Epithelioid tissue b. Mesothelium c. Endothelium
d. Transitional e. Pseudostratified

4-What type of epithelium has domelike cells on the surface layer?

a. stratified squamous b. Transitional c. Endothelium
d. glandular e. Pseudostratified

5-Which of the following is not a characteristic of the epithelial tissues:

a- Posses high power of regeneration.
b- Covers and lines surfaces.
c- Form glands.
d- Highly vascular.
e- Has little intercellular substance

6- Each of the following statements about epithelial cells is correct except:

a) rest on basal lamina & lamina prporia
b) have variable shapes
c) are derived from ectoderm, endoderm and mesoderm
d) their surface that are opposed to neighbor cells called apical pole
e) has high power of regeneration.

7-What type of epithelium is associated with goblet cells?

a. Simple cubical epithelium
b. Pseudostratified columnar epithelium.
c. Simple squamous epithelium
d. stratified columnar epithelium
e.Stratifed squamous epithelium.

8- What cell type makes up the lining of the trachea?

a.Simple columnar epithelium
b.Stratified squamous epithelium
c. Simple squamous epithelium
d. Simple cuboidal epithelium
e.Pseudo-stratified columnar epithelium.

9-What type of epithelium forms the epidermis of the skin?

a.Simple squamous epithelium
b.Simple cuboidal epithelium
c.Simple columnar epithelium
d. Keratinized Stratified squamous epithelium
e.Pseudostratified columnar epithelium.

10-The finguer like projections on the apical surface of epithelial cells are called:

a. Microfilaments
b. Microvilli
c. Microtubules
d. Cilia
e. Centrioles.

Matching:

A	B
11-Conjunctiva	**a. Endothelium**
12-Epidermis of skin	**b. mesothelium**
13-Thyroid follicle	**c. keratinized stratified squamous epithelium**
14-epithelial lining of abdominal cavity	**d. Pseudo-stratified columnar ciliated epithelium with goblet cells**
15-Stomach	**e. Simple cuboidal epithelium**
	f. Simple columnar epithelium
	g. Stratified columnar

Key anwer:

1	*d*	*6*	*d*	*11*	*g*
2	*d*	*7*	*b*	*12*	*c*
3	*c*	*8*	*e*	*13*	*e*
4	*b*	*9*	*d*	*14*	*b*
5	*d*	*10*	*b*	*15*	*f*

CYTOLOGY

1- Auto lysosomes are
a.primary lysosomes fused with phagosome
b.primary lysosomes fused with pinocytic vesicle
c.primary lysosomes fused with an old organelle
d.primary lysosomes fused with indigestible compounds.
e.primary lysosomes fused with microbodies

2. All the following regarding mitochondria are true Except:
a. Possess matrix granule
b. divide to produce new mitochondria
c. outer membrane folded to form cristae
d. contain respiratory enzymes
e. are of maternal origin.

3. Which of the following stain blue with H&E stain?
a. Fat b. Collagen fibers
c. Nucleus d. Elastic fibers
e. Decalcified bone matrix.

4- What is the term for the processby which substance enter the cell?
a. Endocytosis c. Exocytosis
b. Phagocytosis d. Active transport e. Pinocytosis

5- The cilium:
a. has a core of microfilaments
b. appears as basophilic striations by LM.
c. its basal body has the same structure as that of centriole
d. has similar structure to that of sterocilia.
e. are immotile hair like projections.

6- The following stain can be used to stain the centriole
a.Iron hematoxylin d. Indian ink
b.Trichrome stains e. Brilliant cresyl blue
c. Orcein stain

7- The myofibrils of skeletal muscle is formed of

a.vimentin b.actin
c.tubulin
d.chromatin e.Cytokeratin

8-All of the following are considered as a part of the nucleus EXCEPT:

a. Nuclear membrane
b. chromatin materials
c.lipofuscin granules.
d. chromatin material
e.Nuclear sap.

9-Concerning glycocalyx, all are true EXCEPT:

a. present on both surfaces of cell membrane
b. contains special receptors
c. formed of glycoproyeins & glycolopids
d. plays a role in cell adhesion
e. plays a role in immunity.

10- All the followings share in cell division EXCEPT:

a. actin filaments d.centrioles
b. microtubules e. glial filaments
c. chromatin.

Key anwer:

1	*c*	*6*	*a*
2	*c*	*7*	*b*
3	*c*	*8*	*c*
4	*a*	*9*	*a*
5	*c*	*10*	*e*

Connective Tissue

1- **Which of the following cells stain metachromatically with basic staines :**

a. Macrophage.
b. Fat cell.
c. pericyte.
d. Plasma cell.
e. Mast cell.

2- Concerning collagen fibers all of the following are true EXCEPT:

a. Wavy branching bundles of branching fibers.
b. Formed by fibrobasts.
c. Destroyed by acids and alkalies.
d. Resist stretch.
e. Stain red with Van Gieson stain.

3-All of the following CT cells have a role in defense & immunity Except:

a. Basophils
b. Macrophages
c. Plasma cells
d. Fibroblasts
e.Lymphocytes.

4 -Concerning reticular fibers one of the following is true :

a. Have low carbohydrate level.
b. Can be stained with H & E.
c. Stain black by PAS.
d. Can be synthesized by smooth muscle cells.
e. Give elasticity to tissues.

5- **Concerning unilocular fat cell one of the following is true :**

a. It s nucleus shows signet ring appearance.
b. Presents in brown adipose tissue.
c. Functions as heat regeneration.
d. rich in mitochondria
e. It is higly vascular.

6- All of the following concerning extracellular matrix of C.T. are true EXCEPT:

a. Colourless ,transparent, gel like material
b. Acts as a medium for transfer of substances.
c. Its tissue fluid is exactly the same as blood plasma.
d. Acts as barrier for the spread of microorganism.
e. Secreted mainly by fibroblasts.

7- Concerning fibroblasts all of the following are true EXCEPT

a. Branched cell with many processes.
b. Nucleus has fine chromatin.
c. Responsible for heat generation.
d. Is the most common type of C.T. cells.
e. Shows the EM picture of cells active in protein synthesis.

8- One of the characteristics of pericyte is:

a. Rounded cells
b. Their contraction leads to vasoconstriction
c. They are differentiated cells
d. Darkly stained nuclei
e. Most common cells of CT.

9- All of the following are true about plasma cells EXCEPT:

a. Cytoplasm have negative Golgi image.
b. Arise from monocytes.
c. Their nuclei have a cart-wheel or clock face appearance.
d. Form and secrete antibodies.
e. Abundant in lymphoid tissue

10-Reticular cells can be stained by:

a. Silver. b. Toluidine blue
c. Sudan III. d.Best s carmine
e. None of the above.

Matching

A	B
11.plasma cell	a. Granules stain metachromatically with Toluidine blue stain

12.Mast cell	b. Clock face nucleus
13. fat cells	c. Structural support
14. UMCs	d. stain with Sudan III
15. Fibroblasts	e. Demonstrated by vital stain
	f. Embryonic source of all CT. cells.

Key anwer:

1	*e*	*6*	*c*	*11*	*b*
2	*e*	*7*	*c*	*12*	*a*
3	*d*	*8*	*b*	*13*	*d*
4	*d*	*9*	*b*	*14*	*f*
5	*a*	*10*	*a*	*15*	*c*

Cytogenetics

1- Number of autosomes in human somatic cells is:

a. 22 chromosomes.
b. 46 chromosomes.
c. 22 pairs of homologus chromosomes.
d. 23 pairs of homologus chromosomes.

2. A male child at puberty is diagnosed to have Klinefelter syndrome. The parents asked for an explanation of what happened. Identify the item that should be discussed with the parents:

a. trisomy of chromosome 21
b. loss of an autosome during mitosis
c. loss of the Y chromosome during meiosis
d. non disjunction of the X chromosome
e. loss of the X chromosome

3-Primary non-disjunction which occurs at the 1st meiotic cell division results in:

a. Four normal daughter cells.
b. Two normal and two abnormal daughter cells.
c. Three normal and one abnormal daughter cells.
d. Four abnormal daughter cells.

4- The centrioles is duplicated during

a- synthesis (S) stage of interphase
b- Gap two (G2) stage of interphase
c- Gap one (G1) stage of interphase
d- meiosis
e- leptotene stage

5-All the following are characteristics of Down syndrome except one:

a. The child is showing mongol features.
b. The number of chromosomes is 47.
c. Trisomy is present in chromosome 18.

d. The extra chromosome is present in chromosome 21.

6- Mitosis may be arrested at metaphase by

a- phytohemagglutinin
b- colchicine
c- antibiotics
d- any toxic drug
e- none of the above

7- In acrocentric chromosomes the centromere is

a- absent
b- terminal
c- median
d- submedian
e- subterminal

8.**Numerical aberration include the following except**

a. Down syndrome
b. aneuploidy
c. deletion
d. polyploidy
e. Turner's syndrome

9.**Monosomy of sex chromosome is :**

a. Wolf syndrome
b. Turner's syndrome
c. Klienfilter syndrome
d. Multiple X syndrome
e. Mongolism

10. **Klienfilter syndrome has the following <u>except</u>:**

a. Additional x chromosome
b. Mentally retarded
c. Short child
d. Small testis

e. Large breast

I. Match column B with A	
A	B
11-Klinefelters syndrome	A. Deletion in short arm of chromosome4
12-Turner,s syndrome	B. Translocation and fusion of long arms ofchromosomes21and 14
13-Wolf syndrome	C. 47XXXY mentally retarded tall male
14-Cri du chat syndrome	D. 45 XOmentally retarded short female
15- Robertsonian Down,s syndrome	E. Deletion in short arm of chromosome 5
	F. Translocation between chromosomes 22and9
	G. 47 XXX female with auditory disorders

Key anwer:

1	*c*	*6*	*b*	*11*	*c*
2	*d*	*7*	*e*	*12*	*d*
3	*d*	*8*	*c*	*13*	*a*
4	*a*	*9*	*b*	*14*	*e*
5	*c*	*10*	*c*	*15*	*b*

MUSCLE

1. **What is the cell membrane of a muscle cell called?**
   a. Endomysium
   b. Sarcolemma
   c. Sarcoplasm
   d. Perimysium
   e. Epimysium

2. **All of the following statements are true of mature skeletal muscle except:**
   a. the cells are multinucleated .
   b. the nuclei are centrally located.
   c. a sarcomere is the distance between two successive Z lines.
   d. myofibrils show striations.
   e. Can regenerate.

3. **Which fiber type is larger in diameter?**
   a. Red fibers
   b. White fibers
   c. Intermediate fibers
   d. All of the above
   e. None of the above

4. **What is line that bisects the dark band in muscle?**
   a. A band
   b. I band
   c. Z line
   d. H band
   e. M line

5- **One of the following is true about skeletal muscle.**

a. Involuntary in action.
b. Fusiform in shape.
c. Attached to the skeleton.
d. Contain intercalated discs (ID)

6- One of the following is false about skeletal muscle.

a. Nuclei are centrally located.
b. Myofibrils show dark and light bands.
c. Cytoplasm shows transverse striations.
d. Voluntary in action.

7- Only one of the following is false about the triad of the skeletal muscle.

a. T tubules are longitudinal invaginations from sarcoplasm.
b. T tubules are collar around the myofibrils.
c. Sarcoplasmic reticulum forms 2 cisternae at both sides of T tubules.
d. Plays an important rule in muscle contraction.

True or false:

8.Cardiac muscle has triad system ( )

9. smooth muscle contains intercalated discs ( )

10. Cardiac muscle can not regenerate ( )

Key anwer:

1	*b*	*6*	*a*
2	*b*	*7*	*a*
3	*b*	*8*	*F*
4	*e*	*9*	*F*
5	*c*	*10*	*T*

NERVOUS TISSUE

1. **Spinal ganglia are characterized by:**
   a. Covered by thin connective tissue capsule.
   b. Contains many blood vessels.
   c. Cells are variable in size.
   d. Cells are smalls in size.
   e. Cells are multipolar.

2. **Concerning Nissl granules, all are true *except:***
   a. Present in the axons and dendrites.
   b. Concerned with synthesis of neurotransmitters.
   c. Formed of rough endoplasmic reticulum and polyribosomes.
   d. They appear as basophilic granular areas in the cytoplasm.
   e. Their number varies according to the neuronal type and functional state.

3. **Myelin-producing cells in a central nerve are called:**
   a. Astrocytes
   b. Microglia
   c. Oligodendroglia
   d. Satellite cells
   e. Schwann cells

4.Concerning sympathetic ganglia:
   a. Nerve cells are surrounded by many satellite cells.
   b. The cells are arranged in rows or groups.
   c. Cells are separated by unmyelinated nerve fibers.
   d. Cells are bipolar.
   e. No synapse between cells.

5- Only one is true about the site of pseudo-unipolar neurons.

   a. Spinal cord.
   b. Spinal ganglia.
   c. Sympathetic ganglia.
   d. Cerebellum.

6- Only one is true about bipolar neurons.

a. Triangular in shape.
b. Present in the retina of the eye.
c. Has axon and multiple dendrites.
d. Present in sympathetic ganglia.

7- Only one of the following is true about multipolar neurons.

a. Pyramidal in shape.
b. Pyriform in shape.
c. Stellate in shape.
d. All of the above.

8- One of the following is false regarding Perikaryon

a. Rich in Nissl's granules.
b. Contains centroiles.
c. Golgi apparatus surrounds the nucleus.
d. Neurofibrils run in different directions.

9- One of the following is false regarding the axon

a. Has a regular contour.
b. Single and long.
c. Contains Nissl's bodies.
d. Receives impulse from nerve cells.

10- One of the following is false about the dendrites.

a. Multiple and short.
b. Contains Nissl's granules.
c. Carry the nerve impulses to the nerve cell.
d. Have regular contour.

Key anwer:

1	*c*	*6*	*b*

2	*a*	*7*	*d*
3	*c*	*8*	*b*
4	*c*	*9*	*c*
5	*b*	*10*	*d*