

***Questions Exercises in
Histology
For medical Students
Second year***

***Histology Department
Beni-Suef University***

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1-CNS

I-Multiple Choice Questions

1-The fibres of cuneate tract end in:

- a. Cuneate nuclei in the medulla
- b. Substantia gelatinosa
- c. Clark s nucleus
- d. Nucleus proprius
- e. Commissural nucleus.

2- The first order neurone in auditory pathway

- a. Axons of bipolar nerve cells in spiral ganglia
- b. Inferior colliculus
- c. Superior olivary nucleus
- d. Trapezoid body
- e. Medial geniculate body

3- Which of the following tracts is concerned with coordination of the eye & head movements toward the source of stimulation?

- a. Spino-olivary
- b. Spinoreticular
- c. Spinotectal
- d. Spinovestibular
- e. Cuneo-cerebellar

4- All of the following sensations are carried by the Trigeminal lemniscus except:

- a. Pain
- b. proprioception
- c. Temperature
- d. Hearing
- e. simple touch

5-The fibres of corticospinal tract arise from axons of neurons in:

- a. anterior 2/3 of posterior limb of internal capsule.
- b. motor area 8 of the cerebral cortex
- c. motor area 4 of the cerebral cortex.
- d. intermediate part of basis pedunculi
- e. basis pontis

6- Which of the following tracts is concerned with fine, isolated specific movements?

- a. Spino-olivary
- b. Spinoreticular
- c. Spinotectal
- d. Corticospinal.
- e. Cuneo-cerebellar

7-The 2nd order neuron in the pathway of crude touch is:

- a. Gracile nucleus
- b. Cuneate nucleus
- c. Substantia nigra of Rolandi
- d. Clarke cell
- e. Main sensory nucleus

8- As regard external arcuate fibers all of the following are true except:

- a. They are some fibers from gracile & cuneate tracts which do not relay in gracile & cuneate nuclei.
- b. anterior external arcuate fibers relay in the arcuate nucleus then to cerebellum.
- c. They form the medial lemniscus
- d. It is a connection between deep sensation & cerebellum.
- e. posterior arcuate fibers enter the inferior cerebellar peduncle directly

9- All of the following tracts are extrapyramidal except:

- a. Lateral vestibulo-spinal tract
- b. Rubrospinal tract
- c. ventral reticulospinal

- d. Sulco-marginal tract
- e. lateral corticobulbar.

10-The following are tracts that carry sensations that reach subcortical level except:

- a. Dorsal spinocerebellar tract.
- b. Ventral I spinocerebellar tract.
- c. Spinoolivary tract.
- d. Spinotectal tract.
- e. Cuneate tract.

11-The first order neuron in proprioception from the upper half of the body is in:

- a. Gracile nucleus.
- b. Cuneate nucleus.
- c. Spinal ganglia.
- d. Main sensory nucleus.
- e. Substantia gelatinosa of Rolandi.

12. Which of the following is involved in the blood brain barrier?

- a. Astrocytes.
- b. Ependymal cells.
- c. Oligodendrocytes.
- d. Schwann cells
- e. Macrophages.

13-The first order neurons in proprioception pathway from face and head are in:

- a. Trigeminal ganglion.
- b. Dorsal root ganglion.
- c. Spinal nucleus of trigeminal nerve.
- d. Mesencephalic nucleus of trigeminal nerve.
- e. Nucleus proprius.

14-Final neurons in auditory pathway are:

- a. Cells of Medial geniculate body.
- b. Cells of Lateral geniculate body.

- c. Cells in Inferior colliculus.
- d. Cells in superior colliculus.
- e. Cells of lateral lemniscus nucleus.

15-The densest & thickest layer of the meninges is called:

- a. pia matter.
- b. dura matter.
- c. arachnoid matter.
- d. epineurium.
- e. leptomeninges.

II-Match:

A	B
1- Granular cells of cerebellum.	a) Arises from Clark's nucleus.
2-Corticospinal tract.	b) Arises from motor area 8.
3-Dorsal spinocerebellar tract.	c) Form parallel fibres.
4-Medial corticobulbar tract.	d) Continuation of medial longitudinal bundle.
5. Internal arcuate fibres.	e) Form medial lemniscus.
	f) Middle part of basis pedunculi in mid brain.
	g) Cells of Medial geniculate body.

1	2	3	4	5

2-The Organs of Special Senses (Eye and Ear)

I-Multiple Choice Questions

1-As regard cristae ampullares :

- a- It has thin glycoprotein layer
- b- It has a conical shape cupula
- c-It is covered with otoliths.
- d- Exactly similar to maculae
- e- It is the neuroreceptor for hearing

2-Concerning the inner hair cells of the organ of Corti:

- a-Forms three to five rows of cells
- b-They rest on top of inner phalangeal cells.
- c-They have kinocilium
- d-They rest on basilar membrane
- e-They maintain balance and equilibrium

3- Where is the blind spot?

- a. Ciliary body
- b. Optic disc
- c. Fovea centralis
- d. Yellow spot
- e. Sclera

4-The refractive media of the eye are formed of all except:

- a-Lens
- b-Retina
- c-Aqueous humor
- d-Vitrous body
- e-Cornea

5-Where does aqueous humor from anterior chamber collect into?

- a. Canaliculi
- b. Canal of Hering

- c. Canal of Muller
- d. Canal of Descemet
- e. Canal of Schlemm

6-What type of glands are the glands of Moll?

- a. Endocrine gland
- b. Apocrine sweat gland
- c. Oil gland
- d. Sebaceous glands
- e. Eccrine sweat gland

7- The receptors of the cochlear nerve are found in:

- a. Macula of the utricle
- b. Macula of the saccule
- c. Crista ampularis
- d. Hair cells of organ of corti
- e. Inferior colliculus.

8. One of the following is true concerning the sclera:

- a. Has no blood vessels.
- b. Collagen fibers are regulary parallel to each other.
- c. The matrix has low water content.
- d. It contains collagen and elastic fibers.
- e. It is transparent.

9. One of the following is false about the pigmented epithelium of the retina:

- a. It is a layer of cubical cells.
- b. Resting on bowman's membrane.
- c. Cells are connected by tight junctions.
- d. Has apical microvilli
- e. The inner part of the cells is rich in melanin pigments

10. Regarding the fovea centralis:

- a. It is highly vascular
- b. Contains only rods.
- c. Poor visual acuity.
- d. The number of layers of the retina is less.
- e. It is opaque.

11. Regarding the eye lids, all the followings are true except:

- a. They are covered by thin skin rich in fat.
- b. The orbicularis oculi is formed of skeletal muscle fibers.
- c. They contain the tarsal plate.
- d. They contain sebaceous gland called Zeis glands.
- e. They contain sweat gland called Moll' s glands.

12-The outer surface of the tympanic membrane is lined with:

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

13- Phagocytosis of shed rod outer segments is carried out by:

- a. Amacrine cells.
- b- Horizontal cells.
- c- Pigmented cells of retina.
- d- Microglia.
- e- Macrophages.

14- All are transparent media except:

- a-Lens
- b-Retina
- c-Aqueous humor
- d-Vitrous body
- e-Cornea

15-Which contains perilymph?

- a. Scala vestibule
- b. Scala tympani
- c. Cochlear duct
- d. Both a and b
- e. All a, b, and c

II-Match:

A	B
1- The nerve fiber layer	a- They have processes that spread horizontally in the plexiform layers to integrate signals from photoreceptors over a wide area of the retina.
2- The outer limiting membrane	b- They have long processes that extend from the inner to the outer limiting layers.
3- The bipolar nerve cells	c- Contains nuclei & cell bodies of the rod & cone cells
4- Müller cells	d- Contains axons of rod & cone cells with dendrites of bipolar cells & horizontal cells.
5- Horizontal and amacrine cells	e- This layer contains the unmyelinated axons of the ganglion cells which form the optic nerve.
	f- They make synapse with either the rod or cone cells.
	g- Formed of adherent junctions between processes of Müller cells & the photoreceptors.

1	2	3	4	5

3-Digestive System

I-Multiple Choice Questions

1- The absorptive surface of the small intestine is increased by the presence of all the following except:

- a. Rugae
- b. Microvilli
- c. Plica circularis
- d. Villi
- e. Intestinal length

2-Von Kupffer cells are characterized by the following EXCEPT:

- A-derived from monocytes.
- B-Lined the walls of blood sinusoids.
- C-cytoplasm is rich in smooth & rough ER
- D-they can be stained with vital stains.
- E-destruction of senile R.B.CS

3-Concerning the organelles in hepatocytes, all the following are false EXCEPT:

- A-peroxisomes are concerned with secretion of plasma proteins.
- B-rER is concerned with detoxification of drugs.
- C-lysosomes are concerned with turnover of intracellular organelles.
- D-microbodies are concerned with lipid metabolism.
- E-mitochondria are few in number.

4-Regarding the pancreatic acini, all of the followings are true EXCEPT:

- A-Golgi apparatus is supranuclear.
- B-basal acidophilic zymogen granules in cytoplasm.

C-cell membranes show tight junctional complexes.

D-Centroacinosose cells are found.

E-their cells have ill-distinct cell boundaries.

5. What type of tissue lines the pharynx?

- A. Simple squamous epithelium
- B. Simple columnar epithelium
- C. Stratified squamous epithelium
- D. Ciliated pseudostratified epithelium with goblet cells
- E. Both c and d

6- For human lips, all are true EXCEPT:

- A. Formed of orbicularis oris muscle.
- B. The red margin is a transition zone.
- C. The outer surface is thin skin.
- D. The lip margin is devoid of sebaceous gland.
- E. The inner surface is covered by keratinized stratified squamous epithelium.

7-Which cells secrete hydrochloric acid?

- a. Parietal cells
- b. Oxyntic cells
- c. Chief cells
- d. Mucous neck cells
- e. Both a and b

8- Which region are goblet cells most numerous?

- a. Esophagus
- b. Stomach
- c. Small intestine
- d. Large intestine
- e. Anus

9-Which of the following is the exocrine portion of the pancreas?

- a. Islets of Langerhans
- b. Alpha cells
- c. Beta cells
- d. Delta cells
- e. Acini

10. Kupffer cells:

- a. are deeply eosinophilic due to large numbers of mitochondria
- b. elaborate pepsinogen
- c. are located predominantly within hepatic sinusoids

- d. contain bile canaliculi
- e. are found within the perisinusoidal space (of Disse)

11-All of the following about neuroendocrine cells are true EXCEPT:

- A. They can be stained with silver stain.
- B. They have basal nuclei with prominent nucleoli.
- C. They have infranuclear Golgi complex.
- D. They empty their secretion directly into the lamina propria of the gland
- E. Their production of gastrin stimulate acid production by parietal cell.

12- All of the following are characteristic of the rectum EXCEPT:

- A. Numerous goblet cells
- B. Surrounded by adventitia
- C. Short multiple crypts
- D. Complete outer longitudinal layer of musculosa
- E. It is about 12 cm in length

13- All of the following about Paneth cell is true EXCEPT:

- A. Present in the base of the crypts
- B. It secretes lysozymes that kill bacteria.
- C. Its secretory granules are basal in position
- D. Plays a role in controlling the intestinal flora through secretion of intestinal enzymes
- E. Possesses the features of protein forming cells.

14-The surface of the stomach is protected from the acidity by the neutral mucous secreted by:

- | | |
|------------------------|----------|
| A. Goblet cells | D. b &c |
| B. Surface mucous cell | E. a &b. |
| C. Mucous neck cells | |

15-The following changes are present at gasto-oesophageal junction EXCEPT:

- A. gastric glands appear
- B. musculosa become thicker in stomach
- C. connective tissue become wider at stomach.
- D. epithelium becomes simple columnar ciliated

E. oesophageal glands stop

16-The plexus of nerves in the connective tissue musculosa of digestive tube is called:

- A. mysenteric plexus
- B. Auerbach' s plexus
- C. Schmidt s simple synapses
- D. Meissner s plexus
- E. the submucosal plexus.

17-M cells are characterized by all of the followings EXCEPT:

- A. have basal invaginations containing macrophages
- B. overly payer patches
- C. secrete motilin.
- D. considered as antigen presenting cells
- E. present in ileum.

18- A 45 years old man was diagnosed to have peptic ulcer by endoscope. It is caused by over secretion of:

- A. oxyntic cells
- B. paneth cells
- C chief cells
- D. APUD cells
- E. mucous neck cells

19- Concerning the soft palate one of the following is false :

- A. covered by pseudostratified columnar ciliated epithelium with goblet cells posteriorly.
- B. has a core of skeletal muscles in its submucosa
- C. It is the anterior part of the roof of oral cavity
- D. covered by oral mucosa anteriorly.
- E. has numerous lymphoid nodules in its submucosa.

20- One of the followings concerning a section in the parotid gland is true:

- A. covered by thin C.T. capsule.
- B. its main duct is lined by columnar cells.
- C. its acini contain granules rich in proteins that have high amylase activity.
- D. contain centroacinosse cells.
- E. more mucous than serous

II- Match column (A) with column (B):

A	B
1. Mucous Neck Cells	a. They secrete hydrochloric acid and gastric intrinsic factor.
2. Zymogenic Cells	b. Tall columnar cells with basal oval nucleus and apical striated border (densely packed microvilli).
3. Paneth cells	c. They secrete intestinal enzymes and lysozymes that kill bacteria
4. Parietal Cells	d. They have Pale vacuolated foamy cytoplasm as they contain mucus
5. Enterocytes	e. Dome shaped with basal cavity packed with lymphocytes & macrophages
	f. They have basal basophilic cytoplasm with apical zymogen granules
	g. More than 15 different types widely scattered in GIT.
	h. Exhibit mitotic figures (rapid turn over).
	i. They are less abundant in the duodenum and increase in number as they approach the ileum.

1	2	3	4	5

4-Endocrine System

I-Multiple Choice Questions

1. Where is corpora arenacea found?

- A. Pituitary
- B. Adrenal gland
- C. Thyroid
- D. Pineal gland
- E. Pancreas

2. Which cell type are also called C cells?

- A. Principal cell
- B. Parafollicular cells
- C. Chromaffin cells
- D. Oxyphil cell
- E. Follicular cells

3- APUD cells :

- A. are of six types.
- B. are vacuolated cells
- C. include pancreatic acinar cells.
- D. derived from mesoderm
- E. include cells of suprarenal medulla

4. Thyrotropin (thyroid stimulating hormone or TSH) is synthesized and secreted by which cell?

- a. Neurosecretory neuron of neurohypophysis
- b. Acidophil of adenohypophysis
- c. Basophil of adenohypophysis
- d. Thyroid follicular cell
- e. Thyroid C cell

5-Concerning the suprarenal gland all of the following are true EXCEPT:

- a. Has dense fibrous C.T capsule covered with adipose C.T.
- b. Cells arranged in arched groups forming zona glomerulosa
- c. Cells of zona fasciculate are rich in s ER and secrete glucocorticoids
- d. Chromaffin cells of medulla secrete adrenaline and noradrenaline
- e. Cells of zona reticularis secretes aldosterone

6- Regarding the pituitary gland, all of the following are true EXCEPT:

- A. somatotrophs are acidophils characterized by numerous membrane bound secretory granules.
- B. thyrotrophs are basophils which secrete TSH that stimulates follicular cells lining thyroid follicles
- C. mammotrophs are basophils known as orangeophils, they secrete prolactin which promotes milk secretion.
- D. chromophobes are undifferentiated cells, they represent about 52% of cells in pars distalis of anterior lobe
- E. gonadotrophs are basophils which secrete FSH that stimulates growth of ovarian follicles.

7-All are characters of Pars nervosa of the pituitary gland except:

- a. Contains pituicytes
- b. Contains non myelinated axons
- c. Secrete vasopressin & oxytocin
- d. Contains blood capillaries .
- e. Appears paler than pars distalis

8- All the following are correct about somatotrophs EXCEPT.

- A- Rich in lipids.
- B- Acidophil.
- C- Orange G positive.
- D- Rich in Golgi and rER.
- E- Decrease secretion causes dwarfism

9- Pars nervosa contain all the following EXCEPT:

- A. Pituicytes which are branched supporting cells.
- B. Herring bodies in axon terminals.
- C. Fenestrated blood capillaries.
- D. Pinealocytes.
- E. Nerve fibers.

10-Regarding the thyroid gland, all of the following are true EXCEPT:

- A. Follicular cells have numerous apical microvilli & supranuclear Golgi apparatus.
- B. Parafollicular cells are located between follicular cells & reach to the colloid.

- C. Interfollicular cells are located between follicles , they are tangentially cut follicles.
- D. Follicular epithelium surrounds a wide cavity filled with colloid.
- E. Thyroglobulin absorption by microvilli & digestion by lysosomal enzymes results into T3 & T4.

11-The main suprarenal medulla cells are identified from cells of the cortex by:

- A. Best' s carmine stain
- B.PAS stain
- C. Toluidine blue stain
- D. Chromaffin reaction
- E. Trypan blue stain

12-The spongiocytes are found in:

- a. Zona fasciculata
- b. Zona reticularis
- c. Zona glomerulosa
- d. Adrenal medulla
- e. None of the above.

13- LM examination of a biopsy from hyperactive thyroid gland shows :

- a. Lining epithelium is simple squamous.
- b. Lining epithelium is simple cuboidal
- c. Lining epithelium is simple columnar.
- d. Lining epithelium is pseudostratified columnar
- e. Lining epithelium is transitional.

14. Spongiocytes of the _____ secrete cortisol and androgens.

- a. Zona glomerulosa
- b. Zona fasciculata
- c. Zona reticularis
- d. Adrenal medulla
- e. Adrenal cortex

15- All the following are correct about somatotrophs EXCEPT.

- a- Rich in lipids.
- b- Acidophil.
- d- Rich in Golgi and rER.
- e- Decrease secretion causes dwarfism

c- Orange G positive

II- Match column (A) with column (B):

A	B
1- Pituicytes	a- Their granules contain epinephrine or norepinephrine
2- Follicular cells	b-Their lightly stained cytoplasm have secretory granules containing calcitonin.
3- Chromaffin Cells	c- They are highly branched glial cells in Pars nervosa.
4- Parafollicular cells	d- They are large acidophilic cells with abnormally shaped mitochondria. Their function is unknown.
5- Chief Cells	e- Cuboidal epithelial cell with central rounded nuclei and basophilic cytoplasm for secretion of T3 and T4
	f- They secrete Serotonin (at day time) & Melatonin (at night).
	g- They secrete parathyroid hormone which raises the level of blood calcium
	h- Can be stained with Ag, so called argentaffin cells
	i- Secretes glucocorticoids which regulate carbohydrate, lipid and protein metabolism

1=	2=	3=	4=	5=
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5-Urinary System

I-Multiple Choice Questions

1. What type of tissue composes the kidney tubules?

- A. Simple squamous epithelium
- B. Simple columnar epithelium
- C. Transitional epithelium
- D. Simple cuboidal epithelium
- E. Stratified squamous epithelium

2- Cells of the proximal convoluted tubules have the following features EXCEPT:

- A. acidophilic granular cytoplasm
- B. well defined cell boundaries
- C. apical brush border of microvilli.
- D. very narrow lumen
- E. basal mitochondrial striations

3-The thin descending limb of loop of Henle is lined with:

- A. Simple columnar epithelium
- B. Transitional epithelium
- C. Pseudosratified columnar epithelium
- D. Simple squamous epithelium
- E. Stratified cubical epithelium.

4- All of the following concerning the ureters are true EXCEPT:

- A. They are lined with transitional epithelium
- B. They have a thin serosa layer
- C. They show prominent longitudinal folds in the mucosa
- D. They have several layers of smooth muscle in the musculosa
- E. They conduct urine from renal pelvis to urinary bladder.

5 -All are correct regarding the distal convoluted tubules EXCEPT:

- A. It is part of the nephron.
- B. It is lined by pseudostratified columnar epithelium.
- C. It has pale acidophilic cytoplasm.
- D. It has less apparent brush border.
- E. It starts at the end of ascending limb of loop of Henle.

6- The blood renal barrier is formed of:

- A. filtration slit diaphragms.
- B. cuboidal cells in proximal convoluted tubules.
- C. fenestrated glomerular basement membrane.
- D. continuous endothelium of afferent arterioles
- E. Lacis cells

7- The prostatic urethra is lined with:

- A. pseudostratified columnar epithelium
- B. stratified squamous
- C. transitional
- D. simple columnar ciliated
- E. stratified columnar.

8- The blood renal barrier has one of the following component :

- a. The major calyces
- b. The Bowman s capsule
- c. The fenestrated endothelium of blood capillaries.
- d. The major process of the podocytes.
- e. Cortical columns of Bertin.

9-All of the following are true about juxtaglomerular apparatus except:

- a. Macula densa is a part of proximal convoluted tubules.
- b. Juxta glomerular cells are modified smooth muscle cells
- c. Juxta glomerular cells secrete renin enzyme
- d. Macula densa act as osmoreceptors
- e. Lacis cells are supportive cells.

10- As regard Mesangial cells one of the following is true:

- a. Line the parietal layer of Bowman s capsule
- b. Share in the formation of blood renal barrier
- c. Secrete renin enzyme
- d. Phagocytose foreign organisms
- e. Tall columnar cells with acidophilic cytoplasm

11- Cells of the proximal convoluted tubules have all of the following Except:

- a. A narrow lumen
- b. Basophilic cytoplasm with basal striations
- c. Pinocytotic vesicles
- d. Apical canaliculi
- e. Long microvilli

12- The thick descending limb of loop of Henle is lined with:

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

13- One of the following is false as regard the kidney:

- a. Malpighian corpuscles located in cortex .
- b. The renal interstitium is the space between urineferous tubules & blood & lymph vessels.
- c. Medullary rays are parallel arrays of tubules extending from the pyramids to the cortex.
- d. The collecting ducts are lined by low columnar cells.
- e. Nephron consists of renal corpuscle, loop of Henle, proximal , distal convoluted tubules & collecting ducts.

14-One of the following is false as regard the distal convoluted tubules:

- a. It is a part of the nephron.
- b. It is lined by pseudostratified columnar epithelium.
- c. It has pale acidophilic cytoplasm.
- d. It has less apparent brush border.
- e. It starts at the end of ascending limb of loop of Henle.

15- One of the followings is true about macula densa:

- a- Modified smooth muscle cell

b- cytoplasm contain PAS positive secretory granules

c- small pale stained cells

d- Intranuclear Golgi apparatus

e- low cubical cells

II-Match column B with A:

A	B
1- Involved in formation of blood renal barrier	a. Proximal convoluted tubule
2-Have receptors for natriuretic hormone factor produced by cardiac atrial cells & receptors for angiotensin II.	b. Distal convoluted tubule
3- Supportive and may transmit signals from macula densa into glomerulus, affecting vasoconstriction there.	c. Podocytes
4- Secrete renin enzyme	d. Macula densa
5- Act as osmoreceptors.	e. Lacis cells
	f. Juxtaglomerular cells
	g. Mesangial cells

1	2	3	4	5

6-Male genital system

I-Multiple Choice Questions

1-What type of gland composes the prostate?

- a. Simple straight tubular gland
- b. Simple coiled tubular gland
- c. Simple alveolar gland
- d. Compound tubular gland
- e. Compound tubuloalveolar gland

2-Which of the following is true regarding penis?

- a. There is one corpus cavernosa and one corpus spongiosum
- b. There is one corpus cavernosa and two corpora spongiosum
- c. There are two corpora cavernosa and one corpus spongiosum
- d. There are two corpora cavernosa and two corpora spongiosum
- e. There are four corpora cavernosa and two corpora spongiosum

3-The blood-testis barrier is formed by:

- a. The basal lamina of the seminiferous tubules and gap junctions between Sertoli cells.
- b. The basal lamina of the seminiferous tubules and surrounding myoid cells
- c. Myofibroblasts surrounding the seminiferous tubules
- d. Tight junctions between Sertoli cells
- e. Tight junctions between capillary endothelial cells

4-Which of the following are produced by the Sertoli cells?

- a. Inhibin
- b. Androgen binding protein
- c. Testosterone
- d. Both a and b
- e. All of the above

5-What type of epithelium lines the seminal vesicles?

- a. Pseudostratified
- b. Simple columnar

- c. Stratified squamous
- e. Simple cuboidal

d. Simple squamous

6-When do the testes descend into the scrotum?

- a. Embryological development
- b. Infancy
- c. Puberty
- d. Adulthood
- e. Childhood

7-Which of the following cells have a haploid chromosome number?

- a. Spermatogonia
- b. Oogonia
- c. Primary spermatocyte
- d. Primary oocyte
- e. Secondary spermatocyte

8-Leydig cells have all the following EXCEPT:

- a-They act under control of LH
- b-Secrete testosterone
- c-Their cytoplasm is rich in rER
- d-Have eosinophilic granules
- e-Rich in lipid granules

9- The mediastinum of testis is:

- a-The anterior thickening of tunica albuginea
- b-The posterior thickening of tunica albuginea
- c- The posterior thickening of tunica vaginalis
- d- The posterior thickening of tunica vasculosa
- e- The posterior thickening of scrotum.

10-Which one of the following are the earliest cells of spermatogenesis?

- a. Primary spermatocytes
- b. Secondary spermatocytes
- c. Spermatids
- d. Spermatozoa
- e. Spermatogonia

11-What is the "cap"at the anterior portion of a spermatazoon?

- a. Head
- b. Tail
- c. Acrosome
- d. End piece
- e. Middle piece

12-Which of the following is NOT considered an accessory gland?

- a. Prostate
- b. Bulbourethral gland
- c. Seminal vesicles
- d. Ductus deferens
- e. None of the above

13-What type of epithelium lines the vas deferens?

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

14-Which of the following is NOT considered part of the male genital duct system?

- a. Rete testis
- b. Tubuli recti
- c. Seminal vesicles
- d. Ductus deferens
- e. Ductus epididymidis

15-The prostate is characterized by all except:

- a- Its thin milky secretion gives the semen its characteristic smell
- b-Its concretions results into difficulty in micturation
- c-Its carcinoma occurs in the outer mucosal group
- d-Its secretion is rich in acid phosphates, zinc & citric acid
- e. Its ducts lined by simple columnar epithelium.

II-Match column B with A:

A	B
1-Leydig cells	a. located near the lumenof the seminiferous tubules
2- Sertoli cells	b. short lived cells
3- Spermatids	c. testosterone secretion
4- 1ry spermatocyte	d. precursor cells
5- 2ry spermatocyte	e. cycling cells
	f. largest cells of the spermatogenic cells
	g. Inhibin secretion

1-	2-	3-	4-	5-
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7-Female genital system

I-Multiple Choice Questions

1-What is the connective tissue which surrounds the ovary?

- a. Follicle
- b. Germinal epithelium
- c. Medulla
- d. Tunica albuginea
- e. Cortex

2-During the late stages of pregnancy, the increase in size of the breast is attributed to:

- a. accumulation of lymphocytes and plasma cells in the intercellular space
- b. branching of the ducts
- c. hypertrophy of secretory cells and accumulation of secretory product
- d. increase in the number of adipocytes
- e. proliferation of the intralobular connective tissue

3- Concerning the cervix of the uterus:

- a. The endocervix is lined by mucus-secreting simple columnar cells.
- b. The cervical mucosa undergoes remarkable changes and is shed during the menstrual cycle
- c. It is formed of mucosa, musculosa and serosa.
- d. The ectocervix is lined by keratinized stratified squamous epithelium
- e. Its stroma is formed of elastic C.T.

4. Mucosa of the fallopian tube is lined by:

- a. Simple cubical epithelium
- b. Simple columnar non ciliated
- c. Simple columnar partially ciliated
- d. Pseudostratified columnar ciliated epithelium

e. Non-Keratinized stratified squamous epithelium

5. One of the following is true about the uterus:

- a. Myometrium is formed of 2 layers.
- b. Endometrial glands are compound tubular glands.
- c. The lining epithelium is stratified columnar ciliated.
- d. Endometrial functional zone is supplied by spiral arteries.
- e. Perimetrium is formed of dense elastic C.T.

6- One of the following is true in relation to corpus luteum:

- a. When it is degerated it changes into corpus haemorrhagicum .
- b. It is formed under the effect of FSH.
- c. It is a permanent endocrine gland.
- d. Responsible for secretion of estrogen & progesterone.
- e. The wall of corpus luteum is not folded

7. The appearance of the antrum is a characteristic of which stage of follicular development?

- a. Primordial follicle
- b. Primary follicle
- c. Secondary follicle
- d. Mature follicle
- e. Graffian follicle

8. Ovulation is triggered by a dramatic increase in which hormone?

- a. FSH
- b. LH
- c. HCG
- d. Estrogen
- e. Progesterone

9-Lactating mammary gland is characterized by all of the following except:

- a. Secretes milk & clostrum
- b. It is a compound tubuloalveolar gland
- c. Contains stellate myoepithelial cells
- d. Milk ejection reflex is under the control of oxytocin
- e. The amount of C.T & fat relatively to the parenchyma increase markedly.

10-The placental barrier at the end of pregnancy is formed by all the following except:

- a. syncytiotrophoblasts
- b. cytotrophoblasts
- c. basement membrane of trophoblast
- d. connective tissue in the core of villi
- e. basement membrane & endothelium of fetal blood vessels.

11-Which stage of the follicle is characterized by a surrounding of flattened follicular cells?

- a. Primordial follicle
- b. Primary follicle
- c. Secondary follicle
- d. Mature follicle
- e. Graffian follicle

12- Which follicular stage is also called an antral follicle?

- a. Primordial follicle
- b. Primary follicle
- c. Secondary follicle
- d. Mature follicle
- e. Atretic follicle

13- Each consists of a primary oocyte surrounded by a single layer of flat follicular cells.

- a. Primordial follicle
- b. Primary follicle
- c. Secondary follicle
- d. Mature follicle
- e. Atretic follicle

14- Cumulus oophorus is:

- a. the glycoprotein layer surrounding the oocyte
- b. granulosa cells, columnar in shape and surrounding the oocyte
- c. granulosa cells surrounding the corona radiata
- d. have cytoplasmic processes penetrating corona radiata

e. Present outside the basement membrane of the mature graafian follicle

15- Theca Lutein cells:

- a. Secrete progesterone hormone
- b. Large vacuolated cells
- c. Outer to the basement membrane
- d. Yellowish in color due to presence of lipochrome pigments
- e. By EM, they show features of protein synthesizing cells

II- Match column (A) with column (B):

A	B
1-Fallopian tube	a.Non-keratinized stratified squamous epithelium
2- Epididymis	b- Stratified columnar epithelium
3-Vagina	c- Mucus secreting simple cuboidal epithelium
4- Bulbourethral glands	d. keratinized stratified squamous epithelium
5- Germinal epithelium	e.Simple columnar partially ciliated epithelium.
	f- Pseudostratified columnar ciliated with non motile cilia.
	g- Transitional epithelium
	h- Simple cuboidal epithelium

1	2	3	4	5

8-Respiratory System

I-Multiple Choice Questions

1. Which cell is found in large numbers in the terminal bronchioles?

- A. Clara cell
- B. Type II pneumocyte
- C. Brush cell
- D. Type I pneumocyte
- E. Dust cell

2. In which structure does gas exchange NOT occur?

- A. Alveolar duct
- B. Alveolar sac
- C. Terminal bronchiole
- D. Alveoli
- E. Respiratory bronchiole

3-All of the following cells line the extrapulmonary bronchi EXCEPT:

- A. Ciliated columnar cells.
- B. Brush cells.
- C. Small granule cells.
- D. Goblet cells.
- E. Absorptive columnar cells

4- Regarding type I pneumocytes one of the following is TRUE:

- A. able to divide and regenerate
- B. represent 3% of alveolar surface.
- C. is the principle phagocyte of the alveolar surface
- D. provide a membrane through which gas exchange occurs.
- E. are connected to neighboring cells by gap junction.

5- Regarding terminal bronchioles one of the following is TRUE:

- A. contain seromucous glands.
- B. function in gaseous exchange
- C. lined with simple cubical ciliated cells
- D. have cartilage plates
- E. contain lymphatic nodules.

6. Olfactory mucosa is characterized by one of the following:

- a. Simple columnar epithelium having olfactory and sustentacular cells
- b. Pseudostratified columnar epithelium having olfactory, sustentacular and basal cells
- c. Lamina propria containing Bowman's glands and olfactory nerves formed of

unmyelinated axons

d. Both "A" and "C"

e. Both "B" and "C"

7-Which of the following equalizes air pressure between alveoli?

A. fused basal laminae of epithelial and endothelial cells

B. alveolar macrophages

C. type II pneumocytes.

D. pores of Kohn

E. smooth muscle cells of pulmonary arteries and veins

8-To enter the capillary, oxygen in the alveolar space has to cross all the following EXCEPT:

A. cytoplasm of cuboidal alveolar cells.

B. cytoplasm of capillary endothelial cells

C. film of surfactant on the alveolar surface.

D. fused basal lamina of type I pneumocytes and capillary endothelial cells.

E. cytoplasm of flat squamous alveolar cells.

9-First part of respiratory tract without cilia:

A. alveolar sac

D. terminal bronchiole

B. alveolar duct

E. intrapulmonary bronchus

C. respiratory bronchiole

10-The nasopharynx has:

a.Hyaline cartilage

b.Fibrocartilage

c.Elastic cartilage

d.Respiratory epithelium

e.Olfactory epithelium

11-One of the following is part of the blood-air barrier in the lungs?

a.Fused basal laminae between type I alveolar cells and capillary endothelial cells.

- b. Alveolar pores of Kohn
- c. Alveolar macrophages
- d. Type II pneumocytes
- e. Smooth-muscle cells of the pulmonary arteries and veins

12-The first part of the respiratory tract without smooth muscle is:

- a. Alveolar duct
- b. Large bronchioles
- c. Respiratory bronchioles
- d. Terminal bronchioles
- e. Alveolar sacs

13- Heavy smoking change the respiratory epithelium to be:

- a. Pseudostratified columnar
- b. Stratified squamous
- c. Stratified columnar
- d. Simple squamous
- e. Simple columnar ciliated

14-True vocal cords have:

- a. Smooth muscles.
- b. Vocal ligaments.
- c. Striated muscle.
- d. a and b
- e. b and c.

15-Terminal bronchioles:

- a. Contains cartilage plates.
- b. Lined with simple cuboidal ciliated epithelium.
- c. Has mucoserous glands in its wall.
- d. In which alveoli open.
- e. Contains goblet cells.

II-Match:

A	B
1- Bronchus	a- They are responsible for the spongy structure of the lung.
2- Alveolar Sacs	b- They are the continuations of the respiratory bronchioles.
3- Bronchioles	c- Secrete pulmonary surfactant
4- Alveoli	d- They are larger groups of alveoli
5- Alveolar Ducts	e- Well developed, circularly arranged smooth muscles layer beneath mucosa.
	f- It represents the structures that separate the air in the alveoli from the blood in the capillaries
	g- Less developed spirally arranged smooth muscles present between mucosa & cartilage layer.

1	2	3	4	5

9-SKIN

I-Multiple Choice Questions

1-Which layer of the epidermis has cells which have keratohyaline granules?

- a. Stratum granulosum
- b. Stratum lucidum
- c. Stratum corneum
- d. Stratum spinosum
- e. Stratum basale

2-Which layer of the epidermis is less apparent in thin skin?

- a. Stratum granulosum
- b. Stratum lucidum
- c. Stratum corneum
- d. Stratum spinosum
- e. Stratum basale

3-The papillary layer is part of which layer?

- a. Epidermis
- b. Dermis
- c. Hypodermis
- d. Both a and b
- e. None of the above

4. Which cell is found in the dermis?

- A. Langerhans cell
- B. Melanocyte
- C. Fibroblast
- D. Keratinocyte
- E. Merkel cell

5-What is a characteristic of the cells in the epidermis of the skin?

- A. Microvilli
- B. Stereocilia
- C. Cilia
- D. Keratinization
- E. Both a & b

6-Which of the following layers is only present in thick and hairless epidermis?

- A. stratum basale
- B. stratum spinosum
- C. stratum granulosum
- D. stratum lucidum
- E. stratum corneum

7. Which of the following is NOT considered an epidermal appendage?

- A. Sweat gland
- B. Hypodermis
- C. Sebaceous glands
- D. Hair
- E. Nails

8-Membrane coated lamellar granules are characteristics of :

- a. Stratum bsasle
- b. Stratum granulosum
- c. Stratum spinosum
- d. Stratum lucidum
- e. Stratum corneum

9-Which cell is a macrophage found in the skin?

- a. Kupffer cells
- b. Histiocyte
- c. Dust cell
- d. Langerhans cell
- e. Microglia

10-What is the half moon shaped white area on a nail called?

- a. Lunula
- b. Eponychium
- c. Matrix

- d. Nail bed
- e. Root

11-Which of the following is the most abundant sensory receptor of the skin?

- a. Free nerve endings
- b. Ruffini's corpuscles
- c. Pacinian corpuscles
- d. Krause's end bulbs
- e. Meissner's corpuscle

12-Which cell is a mechanoreceptors?

- a. Langerhans cell
- b. Keratinocyte
- c. Melanocyte
- d. Merkel cell
- e. Fibroblast

13-Which of the following is found in the hair follicle?

- a. Pigment epithelium
- b. Muller's cells
- c. Huxley's layer
- d. Horizontal cells
- e. Cones

14-Which cell is the most abundant cell in the epidermis?

- a. Langerhans cell
- b. Keratinocyte
- c. Melanocyte
- d. Merkel cell
- e. Fibroblast

15- Which layer of the epidermis is also called the stratum germinativum?

- a. Stratum basale
- b. Stratum spinosum
- c. Stratum granulosum
- d. Stratum lucidum
- e. Stratum corneum.

II-Match:

A	B
1- Hairs	a- These glands produce a viscous secretion that is initially odorless but may acquire a distinctive odor as a result of bacterial decomposition.
2- The merocrine sweat glands	b- Plates of keratinized epithelial cells on the dorsal surface of each distal phalanx
3- The apocrine sweat glands	c- Its secreted fluid is not viscous and contains little protein. Its main components are water, sodium chloride, urea, ammonia, and uric acid.
4- The arrector pili muscles	d- Elongated keratinized structures derived from invaginations of epidermal epithelium.
5- Nails	e- Aggregate of undifferentiated epithelial cells in the follicular bulge at upper part of external root sheath
	f- They are disposed in an oblique direction, and their contraction results in the erection of hair shaft.
	g- They are acinar glands that usually have several acini opening into a short duct.

1	2	3	4	5

Good Luck