Histology and Cell Biology Department. Course Code: HIT 210

Second year Final Exam. (2nd term) Date: 29 / 6 /2013

Allocated time: $1^1/_2$ hour Total allocated marks: 37½

Number of papers: 7 papers Number of questions: 7

All questions should be answered in the same papers

Q. no	Mark	Signature
Q 1	/4	
Q 2	/4	
Q 3	/6	
Q 4	/6	
Q 5	/7½	
Q 6	/5	
Q 7	/5	
Total marks	/37½	

الدرجة الكلية بالحروف/

التوقيع/

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إسم الطالب/ .....

رقم الجلوس/ .....

الرقم السرى

1) Define : (4marks; 1 for each)

a- Kidney medullary rays: They are medullary projections that enter the cortex from the bases of renal pyramids. They contain collecting tubules and ducts.

b- Corpus luteum: It is a temporary endocrine organ present in the ovary after rupture of the mature Graafian follicle.

c- Placenta chorionic villi: are elongated projections from the trophoblasts and separated by intervillous spaces containing maternal blood .

d- Tectorial membrane: It is rigid gelatinous non-cellular sheet that extends superior to the hair cells.

2) Give a reason for each of the following: (4 marks; 1 for each)

a- Presence of blood testis barrier. (2 reasons only)

- To isolate and protect the inner spermatogenic cells from any antigen present in blood.
- To Protect the developing gametes from immune response.
- To protect the more advanced stages of spermatogenesis from blood born noxious agents.
- To select the nutrients and hormones which pass through it.

b- Presence of many mitochondria in the basal part of proximal convoluted tubule cells.

These mitochondria provide the energy for the process of active transport.

c- Presence of tight junction between pigmented epithelial cells of retina.

To limits the access of small molecules from the fenestrated capillaries of chorio-capillaries to the outer part of retina.

d- Under the stimulus of estrogen, the vaginal epithelium synthesizes and accumulates a large quantity of glycogen.

Glycogen is deposited in the lumen of the vagina when the vaginal cells desquamate. Bacteria in the vagina metabolize glycogen and form lactic acid, which is responsible for the usually low pH of the vagina. The acidic vaginal environment provides a protective action against some pathogenic microorganisms.

3) <u>Compare between:</u> (6 marks; 3 for each)

a- Ureter and Oviduct.

	Ureter	Oviduct
1- Mucosa	formed of transitional epithelium lying on a lamina propria of connective tissue	formed of simple columnar epithelium .The epithelium contains two types of cells: one has cilia and the other is secretory
2- Musculosa	consisting of an inner longitudinal, and an outer circular layer of smooth muscle fibers	formed of smooth muscles arranged as an inner circular layer and an outer longitudinal layer
3- Adventitia or Serosa	Adventitia is formed of fibro-elastic tissue, with blood vessels, lymphatic and nerves	Serosa is formed of loose CT containing blood vessels and covered with simple squamous epithelium

b- Rods and Cones of the eye retina.

	Rods	Cones
1- Site	Mainly in peripheral retina	Mainly in central retina
2- Function	Night vision	Day vision, accurate and color vision
3- Visual pigment	Rhodopsin	iodopsin receptive to blue, green red light
4- Outer segment	Long, thin and slender	Short, thick and cone like
5- Membranous discs	Not continuous with plasma membrane	Continuous
6- Nucleus	Small, dark stained, found at different levels	Large, pale, found at one level

4) Draw a labeled diagram for a section in: (6 marks)

a- Closed medulla at the pyramidal decussation. **(4 marks)**

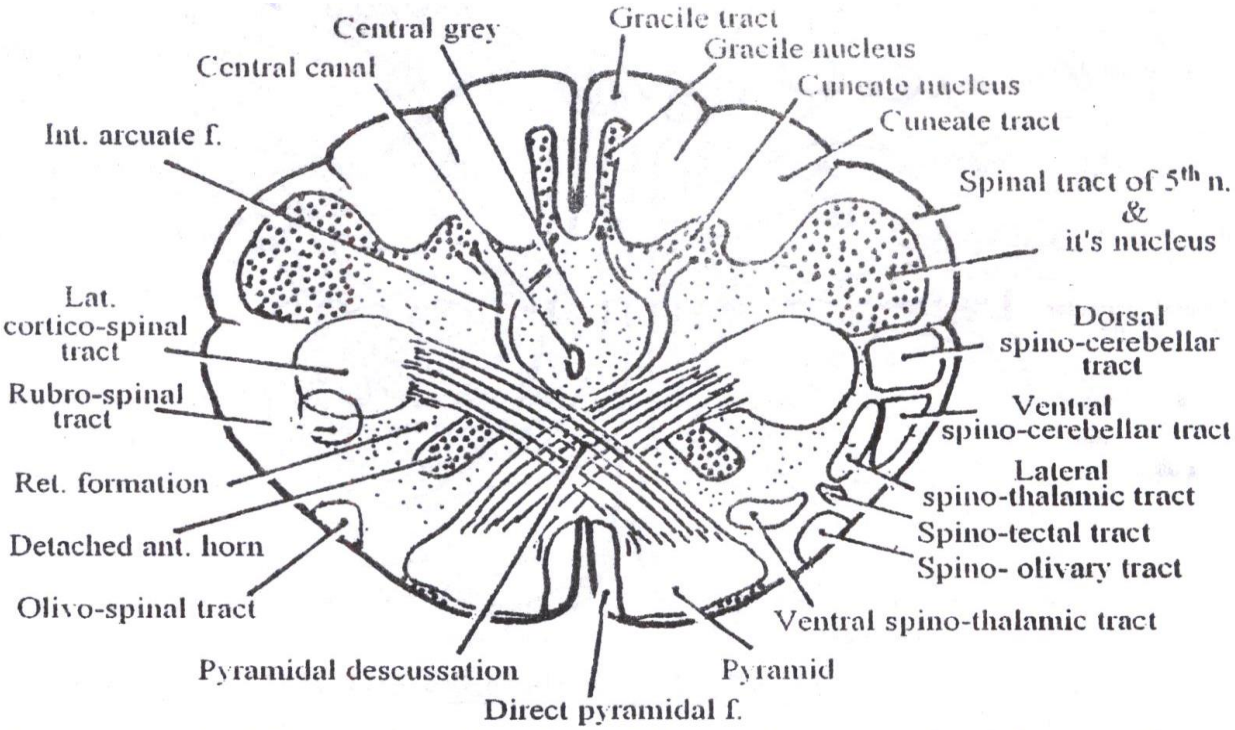


Diagram of a T.S. of the closed medulla at the pyramidal decussation.

b- Vas deferens. **(2 marks)**

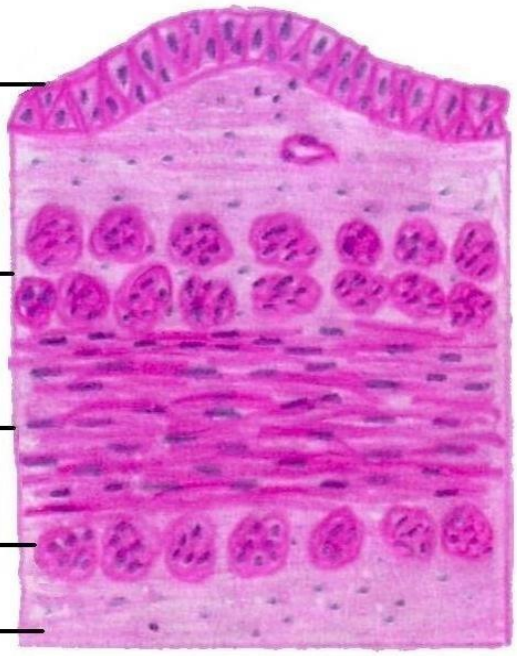
½ mark Pseudo stratified

¼ mark Inner longitudinal

½ mark Middle circular

¼ mark Outer longitudinal

½ mark C.T.



5) Choose the correct answer: (7½ marks; ½ for each)

1- 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 epididymis.

2- Urine concentration takes place in:
A) distal convoluted tubule. B) loop of Henle. C) collecting tubule.
D) proximal convoluted tubule. E) all of the above.

3- Which of the following are NOT produced by the Sertoli cells?
A) inhibin. B) testosterone. C) androgen binding protein.
D) serine protease. E) plasminogen activator.

4- Hair cells are found in ALL of the following locations EXCEPT
A) maculae of saccule. B) maculae of utricle. C) organ of Corti.
D) stria vascularis. E) ampullae of semicircular canals.

5- Theca formation occurs in the:
A) primordial follicle. B) primary follicle. C) corpus albicans.
D) tertiary follicle. E) corpus luteum.

6- Which contains endolymph?
A) Scala vestibuli B) Scala tympani C) Cochlear duct
D) Both A and B E) All A, B, and C

7- Stratified epithelium is typical of the:
A) endometrium. B) endocervix. C) fallopian tube.
D) vagina. E) all of the above.

8- The spiral arteries are found in the:
A) endometrium. B) endocervix. C) fallopian tube.
D) vagina. E) urethra.

9- The middle ear communicates via the Eustachian tube with the:
A) posterior fossa. B) vestibule. C) nasopharynx.
D) endolymphatic sac. E) external auditory meatus (ear canal).

10- The ovarian follicles are found in which layer?
A) cortical. B) medullary. C) the hilus.
D) the capsule. E) all of the above.

11- Cells of Cajal are present in:
A) molecular layer of cerebrum. B) molecular layer of cerebellum.
C) granular layer of cerebrum. D) granular layer of cerebellum
E) none of the above.

12- All of the following are fetal components of the placenta EXCEPT
A) chorionic villi. B) cytotrophoblast. C) syncytiotrophoblast.
D) decidual cells. E) mesenchyme.

13- What sensation does the crista ampullaris recognize?
A) Sound B) Position C) Movement
D) Vibration E) All of the above

14- What type of gland composes the prostate?
A) simple straight tubular. B) simple coiled tubular. C) simple alveolar gland.
D) compound tubular. E) compound tubular alveolar.

15- All of the following are layers of cerebral cortex EXCEPT
A) molecular layer. B) purkinje layer. C) external granular layer
D) internal granular layer. E) multiform layer

6) Mark True (T) or False (F) and correct the false: (5 marks; 1 for each)

1- The glomerular capillary lined with thin endothelial cells with no fenestrations. (F)

with opened fenestrations

2- Spermatids occupy the center of the seminiferous tubules. (T)

3- Otolithic membrane is a rigid membrane. (F)

Tectorial

4- A fluid hollow, the antrum is a characteristic feature of primary follicles. (F)

Mature Graafian follicle

5- Dura matter is the innermost layer of the meninges. (F)

Outermost

7) Complete: (5 marks; 1 for each)

1- Spermatogonia originate from ***primordial germ*** cells.

2- ***Ceruminous*** glands in the external auditory meatus are modified sweet gland.

3- ***Ampulla*** is the widest and middle segment of fallopian tube.

4- The inner surface of the eyelids are lined with ***palpebral conjunctiva***.

5- ***Bartholin glands*** in female are homologous to bulbourethral gland in male.