كلية الطب

Aswan university- faculty of medicine
Medical Biochemistry & Molecular Biology Dep.
2nd year final Exam.
22th August 2019
Time allowed: (2 hours) Total marks: (80)

ASWAN UNIVERSITY

***All questions to be answered:*

Give an account on:

1. Glycolysis (steps, control, energy yield & metabolic defects)? *(10 marks)*
2. Iron metabolism & diseases associated with its metabolic defects? *(10 marks)*

With structure only demonstrate:

3. Steps of urea cycle? *(10 marks)*
4. B-oxidation? *(10 marks)*

Give short notes on:

5. Porphyria? *(6 marks)*
6. Hyperlipidemia? *(6 marks)*
7. Hyperuricemia? *(6 marks)*
8. Osteomalacia? *(6 marks)*
9. Bioenergetics of Krebs cycle? *(6 marks)*

MCQ: *(1 mark each)*

1. **Two conditions in which gluconeogenesis is increased are**
   (A) Diabetes mellitus and atherosclerosis
   (B) Fed condition and thyrotoxicosis
   (C) Diabetes mellitus and Starvation
   (D) Alcohol intake and cigarette smoking
2. **Which of the following statements regarding T.C.A cycle is true?**
   (A) It is an anaerobic process
   (B) It occurs in cytosol
   (C) It contains no intermediates for Gluconeogenesis
   (D) It is amphibolic in nature
3. **The lipoprotein associated with activation of LCAT is**
   (A) HDL (B) LDL
   (C) VLDL (D) IDL
4. **For synthesis of prostaglandins, the essential fatty acids give rise to a fatty acid containing**
   (A) 12 carbon atoms (B) 16 carbon atoms
   (C) 20 carbon atoms (D) 24 carbon atoms
5. **A positive nitrogen balance occurs**

(A) In growing infant
(B) Following surgery
(C) In advanced cancer
(D) In kwashiorkor

6. The rate limiting step in the biosynthesis of catecholamines is
(A) Decarboxylation of dihydroxyphenylalanine
(B) Hydroxylation of phenylalanine
(C) Hydroxylation of tyrosine
(D) Oxidation of dopamine

7. Inherited deficiency of β-glucosidase causes
(A) Tay-Sachs disease
(B) Metachromatic leukodystrophy
(C) Gaucher's disease
(D) Multiple sclerosis

8. Maple syrup urine diseases is an inborn error of metabolism of
(A) Sulphur-containing amino acids
(B) Aromatic amino acids
(C) Branched chain amino acids
(D) Dicarboxylic amino acids

9. Niemann-Pick disease results from deficiency of
(A) Ceramidase (B) Sphingomyelinase
(C) Arylsulphatase A (D) Hexosaminidase A

10. Oxidation of fatty acids occurs
(A) In the cytosol
(B) In the matrix of mitochondria
(C) On inner mitochondrial membrane
(D) On the microsomes

GOOD LUCK

Aswan University	Second Year Medical Students
Faculty of Medicine	Reset Physiology Exam.
Dep. of Medical Physiology	Time allowed: 3 hours
Sunday, 18/ 8/ 2019	Total Marks:140

Examination is composed of **TWO** pages.

Answer all the following questions:

1. Central Nervous System 1: ***(30 Marks)***

1. Define lower motor neuron (LMN) and write a short account on signs of its lesion? (10 Marks)
2. Write short account on:
   a. Thalamic syndromes. (10 marks)
   b. Parkinson's disease. (10 Marks)

11. *Central Nervous System 11:* ***(30 Marks)***

1. Name and Locate two cortical areas controlling speech, then discuss one of them? (10 Marks)
2. Mention Two mechanisms of adaptation and tuning of "vestibular hair cells"?. (10 Marks)
3. Discuss:
   a. Differences between alpha and gamma rigidity? (05 Marks)
   b. The effect of unilateral damage in area (40) in the supra marginal gyrus? (05 Marks)

111- Special sense: ***(20 Marks)***

1. Compare between rods and cones? (05 Marks)
2. Mention:
   a. Two mechanisms for sound localization in the horizontal plane. (05 Marks)
   b. Mechanism of stimulation of olfactory bipolar cells. (03 Marks)
3. Explain
   a. One mechanism of bitter taste transduction. (02 Marks)
   b. Mechanism of color vision. (05 Marks)

1V- Endocrinology: ***(20 Marks)***

1. Describe the anti-inflammatory effects of glucocorticoids? (10 Marks)
3. Give an account on functions and control of secretion of Calcitonin hormone ? (06 Marks)
3. Write on functions of oxytocin hormone? (04 Marks)

V - Reproduction: ***(15 Marks)***

1. Discuss hormones that affect spermatogenesis? (06 Marks)
2. Mention the functions of progesterone hormones? (09 Marks)

V1- Renal System: ***(15 Marks)***

1. Define glomerulotubular balance, mention its importance and mechanisms. (07 Marks)
2. State the micturition reflexes? (08 marks)

V11- Metabolism: ***(10 Marks)***

1. Define the basal metabolic rate and mention **Five** physiological factors affecting it? (06 Marks)
2. Explain ways of heat loss from the skin? (04 Marks)

Good Luck.Prof.mahmoud raafat & Exam.committee

ASWAN UNIVERSITY

Aswan University

Final Exam of Special Histology for 2nd Year Medical Students

كلية الطب

Faculty of Medicine

Department of Histology

Date: 8 -7-2019	No of Pages: 7	Total marks:75	Time allowed: 2hrs

I. Give the histological differences between the following structures? ====> (14 Marks)

I.1. Proximal and distal convoluted tubules: (4Marks)

Proximal convoluted tubules	Distal convoluted tubules

I.2. Larynx and trachea: (3Marks)

Larynx	Trachea

I.3. Fundic gland and intestinal gland (crypts of Lieberkůhn): **(4 Marks)**

	Fundic gland	Intestinal gland
Site		
Type of gland		
Lining cells		

I.4. Grey matter and White matter: **(3Marks)**

	Grey matter	White matter
Definition		
Contents		
Formed of		

II. Indicate whether the statement is <u>True</u> (T) or <u>False</u> (F): **====>(10Marks, 1/1)**

1- Cartilagenous rings of the main bronchi are formed of elastic cartilage. ( )

2- Herring bodies are basophilic neurosecretory material accumulated and stored in the terminal axon of pars nervosa. ( )

3- Ovulation is under control of LH. ( )

4- Adenohypophysis develops from neural ectoderm as upward growth from the roof of oral cavity forming Rathk's pouch. ( )

5- Leydig cells secrete testicular oxytocin. ( )

6- Paneth cell secrete HCL to destroy bacteria. ( )

7- Islets of Langerhans form the exocrine part of pancreas. ( )

8- Microfold (M) cell transports antigens to underlying lymphocytes and macrophages. ( )

9- Central vein is present at the angles of classic hepatic lobule. ( )

7- Crista ampullaris is a neuroepithelium present in the cochlear duct. ( )

8- The inner most layer of meninges is the pia matter. ( )

9- Appendix has wide lumen and neumerous villi. ( )

10- Brunner's glands are branched tubule-alveolar glands. ( )

III- Fill in the blanks: =====> (27 Marks)

III.1. Enumerate the **strutural components of air blood barrier?** **(3Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

5)- ..... 6)- .....

III.2. Give the fine (ultrastructure) structural features **of Cone cells?** **(2 Marks)**

1)- .....

2)- .....

3)- .....

4)- .....

III.3. Enumerate the **structural constituents of the cornea?** **(2 Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

5)- .....

III.4. Enumerate the **components of blood placental barrier:** **(3 Marks)**

1)- .....

2)- .....

3)- .....

4)- .....

5)- .....

6)- .....

III.5. Enumerate types of the ovarian follicles? **(2.5Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

5)- .....

III.6. Enumerate steps of spermiogenesis: **(2 Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

III.7. Enumerate the chromophil cells of pars distalis of the pituitary gland? **(2.5Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

5)- .....

III.8. Enumerate the types of cells in epidermis? **(2Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

III. 9. Components of membranous labyrinth: **(3 Marks)**

1)- ..... 2)- .....

3)- .....

III. 10. Contents of perisinusoidal space (space of Disse): **(2 Marks)**

1)- ..... 2)- .....

3)- ..... 4)- .....

5)- .....

III. 11.Enumerate types of brain barriers: **(3Marks)**

1)- ..... 2)- .....

3)- .....

IV- Choose the correct answer: =====> (19 Marks, 1/1)

IV. 1.Which structrural feature distinguishes between terminal and respiratory bronchioles?

a- Alveoli.
b- Cila.
c- Exocrine3 bronchiolar cells.
d- Mucous glands in lamina propria.
e- Smooth muscle.

IV. 2. Which of the following features distinguishes an intrapulmonary bronchus from the primary bronchi?

a- Glands in the submucosa.
b- Pseudostratified cilaited columnar epithelium.
c- Smooth muscle in the wall.
d- Irregular plates of cartilage.
e- Goblet cells in the epithelium.

IV. 3. Which feature involved in protection of the respiratory tract is absent from the digestive system:

a- Goblet cells.
b- Cilia.
c- Lymph nodules.
d- Secretory cells.
e- Tight junction.

IV. 4. Which of the following is true of pulmonary surfactant?

a- Secreted by type I cells.
b- Forms layer rich in phospholipid overlying a thin aqueous phase.
c- Prevents alveolar collapse by increasing surface tension.
d- Does not bacterial survival.
e- Secreted by goblet cells.

IV. 5. Which cell type comprises the visceral layer of Bowman's capsule?

a- Endothelial cells.
b- Juxtaglomerular cells.
c- Mesangial cells.
d- Podocytes.
e- Extraglomerular mesangial cells

IV. 6. Which cell is a modified smooth muscle cell that secretes renin?

a- Macula densa cells.
b- Mesangial cells.
c- Podocytes.
d- Juxtaglomerular cells.
e- Endothelial cells.

IV. 7. Which cells transmit visual signals from the retina to the brain?

a- Bipolar cells .
b- Amacrine cells.
c- Ganglion cells.
d- Horizontal cells.
e- Müller cells.

IV.8. Human testis consider as:

a- Compound tubular gland.
b- Exo-endocrine gland.
c- Cytogenous gland.
d- All of the above.

IV. 9. Ovuolated oocyte is:

a- Secondary oocyte at metaphase of second meiotic division.
b- Surrounded by zona pellucida and corona radiata.
c- Second meiotic division is completed after fertilization in ampulla of uterin tube.
d- All of the above.

IV. 10. Iodination of the thyroglobulin occurs:

a. Extrcellular in the follicular lumen.
b. Intracellular inside the follicular cells.
c. Inside the capillary bed.
d.Intercellular

IV. 11. Vitiligo is an acquired skin disease associated with:

a- Hyper-pigmented spots
b- An increase in number of melanosomes in melanocytes.
c- De-pigmented patches of skin.
d- None of the above.

IV. 12. Using histochemical stain performic acid alcian blue-PAS-Orang G, the gonadotroph of pars distalis of the pituitary gland appears:

a- Yellow. b- Pink.
c- Blue. d- Violet.

IV.13. Which of the following is involved in the blood brain barrier?

a. Astrocytes. b. Ependymal cells.
c. Oligodendrocytes. d. Schwann cells.

IV.14.The layers of the tympanic membrane are

a. Stratified squamous epithelium on the outside.
b. Fibrous layer.
c. Simple squamous on the inside.
d. All of the above.

IV.15. The central axis of the liver acinus is:

a. Central vein. b. Portal area.
c. Terminal branches of the portal tract. d. Bile duct.

IV.16. The large intestine is characterized by:

a- Absence of intestinal villi. b-Presence of well developed villi.
b- Mucous-neck cells. d. Presence of paneth cells.

IV.17. The human submandibular salivary gland is characterized by:

a- Absence of salivary ducts.
b- ominance of mucous acini.
c- Dominance of serous acini.
d- Fatty infiltration of the gland is evident by the age of 40 years.

IV.18. Taste buds are:

a- Sensory receptors. b- In the four types of lingual papillae.
c- Darkly stained in histological sections. d- Are present in the dorsum of the tongue only.

IV.19. Where is the cerebrospinal fluid?

a- Between the dura mater and bone.
b- Subdural space.
c- Subarachnoid space.
d- Between the pia mater and brain.

V. 5.Write short notes on the structure and function of Sertoli cells:

(5Marks)

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**************** (انتهت الأسئلة) ****************

"Have a Good Luck"

Examination Committee:

Prof. Dr. Amal Taha
Prof. Dr. Gamal Kamel
Prof. Dr. Ramadan Sayed

كلية الطب

ASWAN UNIVERSITY

Date: 1/7/2019
Time: 3 hours
Number of pages:

Aswan university
Faculty of medicine
Anatomy department
Mark: 125

Final anatomy examination for the second year medical student

I Head and Neck (30 marks , 5 marks each)

1_ Structures within the parotid gland are:
a ..... b .....
c ..... d .....
Its secretomotor fibers (parasympathetic fibers) arise from ..... nucleus and pass with .....nerve, then leaves that nerve through ..... branch to form ..... plexus, from which a ..... nerve emerge relaying in the ..... ganglion from which a postganglionic parasympathetic fibers pass with ..... nerve reaching the gland.

2_ A -The intraocular muscles are ..... , ... and .....
B - The extraocular muscles are ..... , ... , ... , ... , ... , ... and .....

3_
A - The sphenopalatine ganglion lies in the .....
Its roots are :
a_ sensory root from .....
b_ sympathetic root is ..... arises from .....
c_ parasympathetic root is ..... arises from .....
Its branches are ..... , ... , ... , ... and .....

4 - The temporomanibular joint is ..... joint of .....variety.

Its movements are :

a ..... produced by .....

b..... Produced by .....

c ..... Produced by .....

d ..... Produced by .....

e ..... produced by .....

5_ The middle ear cavity contains the followings :

a_ ..... convied to it from ..... through .....

b_ auditory ossicles ; ..... , ... and .....

c_ two muscles ; ..... and .....

.....

d_ nerves ; ..... , ...

.....and .....

6_ The skeleton of the larynx consists of the following laryngeal cartilages :

A_single (unpaired cartilages) :

a ..... b .....

c .....

B_ Paired cartilages :

a ..... b .....

c .....

C_ Nerve supply of the larynx is as follows :

All intrinsic muscles of the larynx supplied by ..... Nerve except ..... supplied by .....

The mucous membrane of the larynx above the level of vocal cords is innervated by .....

II- Neuroanatomy (30 marks , 5 each):

1_

A_Total blindness of the right eye is due to ..... while bitemporal hemianopia is due to ....., while lesion of the right optic tract leads to .....

B_ The somatic efferent fiber are component of the following cranial nerves:

a-..... b-.....

c-..... d-.....

C_ The spinal cord receives its arterial supply from:

a-..... b-.....

c-.....

2_ The thalamus is a large ovoid mass of ..... matter.

The functional classification of the thalamic nuclei is based on their relationship to .....as follows:

- Nuclei of ..... arranged in three groups each group contains four nuclei as follows:

  a- .....these are.....

  b- .....

  .....

  c- .....

  .....

- Nuclei of ..... They lie in three strategic areas in the thalamus as follows:

  a-.....

  b-.....

  c-.....

3- The cerebellum is composed of an outer covering of ..... matter called ..... and inner ..... matter.

- The grey matter of the cerebellar cortex may be divided into three layers:

a- An external layer called ..... That contains ..... cells and ..... cells.

b- A middle layer called .....

c- Internal layer called .....

The intracerebellar nuclei are four masses of ..... matter embedded in the ..... matter of the cerebellum on each side of the middle line. From lateral to medial these nuclei are .....

, ... , ... and .....

- The middle cerebellar peduncle include the .....

- The functional anatomy of the cerebellum includes:

a-.....

.....

b-

.....

.....

c-.....

.....

4-The medial longitudinal bundle is a band of longitudinal fibers that extend throughout of .....

- **It is formed of ascending and descending association fibers as follows:**
  - **I- It receives fibers from:**
    - **a- .....**
    - **b- .....**
    - **c- .....**
  - **II- It gives fibers to:**
    - **a-.....**
    - **b-.....**
    - **c-.....**

- **By means of these connections the medial longitudinal bundle coordinate the reflex movement of the eye and neck muscles in response to..... , ... and .....**

5- The subthalamus can be divided into anterior part contains the followings:

- **Three nuclei:**
  - **a-.....**
  - **b-.....**
  - **c-.....**
- **Two bundles:**
  - **a-.....**
  - **b-.....**

and a posterior part contains five tracts as follows:

- **a-.....**
- **b-.....**
- **c-.....**
- **d-.....**
- **e-.....**

6-The internal capsule is a broad band of white fibers which can be divided into the following parts:

a-..... lie between .....
and..... It contains the following fibers:

- **.....**
- **.....**

b- ..... Lies between ..... and ..... . it contains ..... fibers.
c- ..... lies between .....and ..... it contains the following fibers:

- **.....**
- **.....**

d- ..... lies behind ..... It contains .....fibers

e- .....lies beneath ..... It contains the following fibers:

- .....
- .....

III Upper limb (30 marks , 5 each):

1_

A-The female breast consists of :

a.....

b.....

c.....

The base of the female breast lies on the deep fascia related to the following muscles :

a.....

b.....

c .....

B- The clavipectoral fascia fills the gap between .....It is pierced by the following structures :

a..... b .....

c .....

2_A_ The axillary artery begins at the ..... border of the ..... rib as a continuation of ..... and ends at the ..... border of the ..... muscle , where it continues as ..... . the ..... muscle crosses in front of the axillary artery and divides it into ..... parts.

B_ The axillary vein begins at .....

It ends at .....

3- The movements of the shoulder girdle are :

A..... produced by .....

B .....produced by .....

C..... produced by .....

D.....produced by .....

E..... produced by .....

F..... produced by .....

4_ The radial nerve arises from ..... in the .....
It lies behind the ..... artery. It leaves the axilla by winding around the back of the arm inferolaterally to run in the ..... groove of the humerus accompanied with.....artery between the ..... head and ..... head of ..... . It prieces the lateral ..... septum above the albow and continues downward in the cubital fossa in front of the albow, between ..... and ..... Muscles. At the level of the lateral epicondyle , it ends by dividing into ..... and ..... .
In addition it gives the following branches :
A_ In the axilla it gives .....
B_ In the spiral groove it gives .....
Injury to radial nerve leads to :
a_ Motor effects : paralysis of the following muscles .....
.....
b_ Sensory effects, loss of cutaneous sensations from .....
.....
c_ Deformities, in the form of : .....

5_ The flexor retinaculum is a ..... of the deep fascia in front of .....
..... . it is attached laterally to ..... and .....,
strucures passes superficial to the flexor retinaculum from medial to lateral are :
a ..... b .....
c..... d .....
e..... f .....
strucures pass deep to flexor retinaculum are :
a_ Four tendons of .....
b_ Four tendons of .....
c_ The long long tendon of .....
d_ ..... nerve.

6_ The short muscles of the hand are:
A_The thenar muscles are ..... , ...
and .....
B_ The hypothenar muscles are ..... , ... and
.....
C_ Four .....
D_ Four .....
E_ Four .....
F_ .....
The short muscles of the hand are innervated as follows :
A_ the ulnar nerve supplies the following muscles : .....
.....
B_ the median nerve supplies the following muscles : .....
.....

III-Special embryology (35 marks, 5 each)

1_ The permanent kidney arises from two sources as follows :

a ..... gives ..... , ... ,
..... and .....

b ..... gives ..... , ... ,
..... and .....

2_

A_ Derivatives of pharyngeal pouches are as follows:

a_ the first pharyngeal pouch gives ..... and .....

b_ the second pharyngeal pouch gives .....

c_ the third pharyngeal pouch gives ..... and .....

d_ the fourth pharyngeal pouch gives .....and .....

B_ Fate of mesonephric tubules in male is as follows :

a .....

b .....

c.....

3_

A_Congenital anomalies of the vetillointestinal duct are :

a_ persistence of its proximal part forming ..... diverticulum. it occurs in ..... of people. it is ..... cm long. it is cm from the ileocaecal valve . it may be inflamed giving a clinical picture similar to .....

b all of it may remain patent forming .....

c it distal part may remain patent forming .....

d its middle part may remain patent forming .....

B_ Congenital anomalies of the urinary bladder are :

a .....

b.....

c.....

4_

A- The pancreas develops from two pancreatic buds:

a ..... arises from .....

b..... arises from .....

the lower part of the head of the pancreas and the uncinate process develop from ..... , while the upper part of the head , body and tail of the pancreas develop from ....

B- Congenital anomalies of the panrceas are :

a .....

b.....

c_ The duodenum aises from the distal part of .....and the cranial part of .....

5_

A_ Development of the lungs passes through the following four stages:

a_ .....

b_.....

c_ .....

d_ .....

B_ Congenital anomalies of the respiratory system are :

a_ .....

b_.....

c_ .....

d_ .....

C_ Babies born before 28 weeks have little chances of survival because they ....

D_ Babies born between 32_36 weeks usually suffer from ..... due to lack of .....

6_

A_ The fate of bulbous cordis is :

a_ the proximal third gives .....

b_ the middle third is called ..... which gives .....

c_ The distal third is called ..... which gives .....

B_ Fallot's tetralogy consists of :

A ..... b.....

C ..... d.....

7_

A_ The anterior lobe of the pituitary gland is ..... in origin and develops as an upward extension from .....

The posterior lobe of the pituitary gland is .....in origin and develops as downward extension from ..... .

B_ The cortex of the suprarenal gland is .....in origin and develops from ..... , while the suprarenal medulla is .....in origin and develops from ..... .

C_ The rectoanal sinus of the cloaca gives :

A ..... B.....

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