



RASHIDA IQBAL FINANCIAL AID **ORGANIZATION**

Important topics for the upcoming test of Embryology and Histology

**** Special Thanks to Mehreen Noor (4th yr.) for guidelines related to Urogenital and Gastrointestinal system**

EMBRYOLOGY

Urogenital system :

(Important topics from KLM)

Development of kidneys and ureter

Position changes of kidney

Change in blood supply of kidney

Pelvic kidney

Horseshoe kidney

Cystic kidney

Epispadias

Development of urinary bladder and Supra renal gland

Development of testes ,ovaries and genital ducts

Urachal cyst

Hypospadias

Testicular descent

Gastrointestinal System :

(Important topics from KLM)

Development of stomach

And duodenum

Duodenal atresia

Annular pancreas

Rotation of midgut loop

Retraction of intestinal loop

Gastroschisis

Anal canal

Cardiovascular System :

(to be done from langman)

Some important clinicals and topics from klm are:

Ectopia cordis

Double superior vena cava

Partitioning of Heart

Dextrocardia (give it a read)

Atrial septal defects (ostium secundum ASDs and patent oval foramen)

Ventricular septal defect

Transpositioning of great arteries (give it a read)

Tetralogy of Fallot (important)

Coarctation of aorta

Patent ductus arteriosus

Nervous System:

(to be done from langman)

Some important clinicals and topics from klm are:

Non- closure of neural tube ; NTDs (remember that Alpha Feto protein concentration in amniotic fluid is remarkably high)

Spina Bifida Occulta and Cystica

Role and amount of folic acid supplementation required in prevention of NTD

Merocephaly

Hydrocephaly (Give it a read)

Microcephaly

Arnold-Chiari Malformation

HISTOLOGY :

Gastrointestinal system:

Do it completely from practical copy

Must remember the all 4 layers of mucosa , where there is serosa in place of adventitia, squamocolumnar junctions

Some important topics from Laiq Hussain are :

Von Ebner's glands (for mcqs)
types of glands of stomach

Difference between microvilli , villi and plica circularis

Crypts Of Lieberkuhn

Rokitansky Aschoff sinuses in Gall bladder

Nervous System:

Do it completely from practical copy

Some important points from Laiq Hussain are :

Nissl bodies (mcq)

Inclusions in neuronal cytoplasm -lipofuscin and melanin (mcq)

All 3 classification of neurons

Urogenital System :

Do it completely from practical copy

Some important points from Laiq Hussain are :

What is uriniferous tubule

Types of nephrons

Urinary space

Layers of glomerular basement membrane

What is mesangium

Lacis cells (extraglomerular mesangial cells)

Difference between PCT And DCT

PCT cells	DCT cells
Larger cells 60um or more	Smaller cells, 30um in diameter
Cross section shows 3-5 nuclei	Cross section shows 6-8 nuclei
Cells have brush border	Short villi on some cells
Stain intensely eosinophilic and have basal striations due to numerous long mitochondria	Stain lightly eosinophilic with basal striations
Basal plasmalemma of cells shows deep infoldings between which lie rows of mitochondria	Basal plasmalemma of cells shows deep infoldings that are much more extensive than PCT
Resorption of Na, glucose , a.acids, bicarbonates , ascorbates etc	Resorption of Na under influence of aldosterone with passive resorption of Cl . Secretion of H and K

Sertoli cells

Functions of sertoli cells (mcqs)

Blood testis barrier

Function of Leydig cells

What is corpora amylacea

Secretory product of prostate contains – acid phosphatase , fibrinolysin , citric acid , serine protease (also known as Prostate specific antigen),

Zones of prostate – which has more chances of BPH , carcinoma , ischemic and toxin mediated injury

Semen

**female genital system from practical copy

Regards

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Past papers compiled by

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Time: 1:30 mins, Marks 50, 2nd Year MBBS Paper SEQ's Stage Send-Up Dated 10-09-15

Attempt all question, Draw diagram where necessary:

- 1/ a. Enumerate the boundaries and contents of infra-temporal fossa. (2.5)
- b. Discuss the anterior relations of scalene anterior. (2.5)
2. Write short notes on
 - a. Ciliary muscle (2.5)
 - b. Palatine tonsil (2.5)
3. Describe lateral spinothalamic tract. What is multiple sclerosis. (4+1)
4. Draw and label the cross section of midbrain at the level of superior colliculus (5)
5. Draw and label microscopic structure of fallopian tube (5)
6. Describe the clinical importance of hepatic acinus regarding location of the cells. (2.5)
7. How would you differentiate between proximal and distal convoluted tubule microscopically. formation of sinus sheath and discuss variation in its composition at different level of abdomen. (2.5)
- 8/ a. Enumerate the structures crossed by root of mesentery (2.5)
- b. Discuss the thoracolumbar fascia. (2.5)
9. a. Discuss the development of palate. (2.5)
- b. Enumerate different tracheoesophageal fistulae. Explain the most common one. (2.5)
- 10/ a. A baby girl was born with a large defect in the back of the midline skin and the neural tissue was visible. What is your diagnosis? Discuss the types, diagnosis and prevention of this defect. (2.5)
- d. Describe the changes in the sinus venosus. (2.5)

Time: 1:45 mins,

Marks 50,

SEQ's paper 2nd Year Send-Up Dated: 27-09-2010

Note: Attempt all the questions. All carry equal marks. Draw a diagram where necessary:

Histo
&
Embryo

1. Give the microscopic differences of terminal and respiratory bronchioles.

2. Give the microscopic structure of ovary. *Show*

A. Write a short note on tetralogy of fallot.

B. Name the 4th pharyngeal pouch derivatives. Mention its anomalies.

Give the development of spinal cord. Mention its anomalies.

Give the lymphatic drainage of liver. Name the lymph nodes involved in advanced stage of carcinoma stomach.

Abdomen
&
pelvis

Write short notes on.

a. Omental bursa *Stomach part*

b. Relations of left ureter

7. A young married woman presented in emergency with six weeks amenorrhoea and pain in the left iliac fossa for 24 hours. On ultrasound examination fluid was present in pouch of Douglas.

a. What is the most likely diagnosis?

b. Which pelvic organ is involved?

c. Give the gross features of that organ

8. Give the extra-cranial course of facial nerve. What is bells palsy

9. Discuss the nerve supply and actions of extra ocular muscles. Give the clinical effects of lower motor damage of 4th cranial nerve. *break*

10. Name the various parts and relations of internal capsule. Give arterial supply and its effects if it is damaged in dominant hemisphere. *and*

Time: 1:45 mins, Marks 50 2nd Year Paper SEQ's Special Histology and Embryology Dated 13-04-2010

Note: attempt all question, all carry equal marks, draw diagram where necessary:

1. Give the histological differences of different part of stomach. *carder pif*
2. Give the histological difference of duodenum, jejunum and ileum.
3. Draw and label the histological structure of adrenal gland.
4. Give histology of nasal respiratory mucosa. Classify hepatic lobule and give metabolic zonation within liver acinus.
- ✓ 5. How the palate develops, discuss two of its congenital anomalies? *catagenesis*
- ✓ 6. Describe development of thyroid gland give its two congenital defects. *catagenesis*
- ✓ 7. Give development of pancreas and its congenital anomalies *pancreas*
- ✓ 8. Briefly describe development of midgut. *in high and crops*
- ✓ 9. How the excretory part of metanephros develop. *ureteric bud*
- ✓ 10. What is the fate of paramesonephric duct in male & female? *ductus deferens*

*epididymis
seminal vesicle or
prostate gland*

*Hydrocoel margo
- uterine tube
- uterine tube*



(Revised Scheme)
Anatomy (including Histology)
(SEQs)

Marks 45

Time Allowed 2 hours and 15 mi

Attempt **all** questions.

In a tabulated manner give the epithelial lining of various parts of renal tubule.

Enumerate the components of Juxtaglomerular apparatus. What is the functional significance of this apparatus?

A 5 day old baby girl was brought to the hospital with history of turning blue on crying and exertion. Investigations revealed that she had Tetralogy of Fallot. Enlist the classic defects present in this condition mentioning their embryological basis.

Give the location and function of inferior colliculus. Give its connection

Time 1:45 mins, Marks 50 2nd Year Test Embryology and Histology Dated 05-08-2010.

Note: Attempt all questions, carrying equal marks. Draw a diagram where necessary

1. What are the sources and mechanism of vertebrae development?
2. Briefly describe formation of cardiac loop and its positioning in pericardial sac.
3. How interatrial septa develop? Give it two congenital anomalies. ASD
4. What is the fate of arterial arches? Briefly discuss coarctation of aorta.
5. How the different segments of inferior vena cava develop? Give two of its congenital anomalies.
6. What is the mechanism of development of epidermis? How the finger prints are formed give their clinical significance?
dermal papillae
7. Draw and label histological structure of ovary.
8. Give the histological differences of proximal and distal convoluted tubules in a tabulated form.
9. Discuss structure of seminiferous tubules.
10. Write short notes on.
 - a. Stages of spermiogenesis
 - b. Addison's disease





Short Essay Questions

Max Mark

Time Allowed 2 Hours and 15 Min.

Attempt ALL Questions.

a) Draw and label light microscopic picture of transverse section of Ureter.	03
b) Write two points by which you can differentiate a transverse section of vas deferens from Ureter.	02
What are Pharyngeal Pouches? Mention their derivatives in a tabulated form.	01,0
Recalling fetal circulation, name the main fetal vascular shunts & vessels and mention their adult derivatives.	
Draw & label a diagram of transverse section of caudal part of pons at the level of facial colliculus.	



Time 1:45 hrs, Marks 50

2nd Year Test Embryology & Histology Dated 15-06-2011

All questions, all carry equal marks, illustrate your replies with appropriate diagrams, where necessary.

Describe the microscopic structure of Sertoli cells and blood testis barrier.

A 50 year old woman presented in medical OPD with complaints of difficulty in breathing. She was diagnosed as a case of bronchial asthma. Describe the histological structure of the part of the respiratory system suitable for her condition.

3. Draw and label the histological structure of pituitary gland.
4. Describe the hepatic acinus and give its pathophysiological importance.
5. Describe the histological structure of juxta glomerular apparatus.
6. What are the derivatives of mid-gut? Define gastroschisis. Differentiate between congenital omphalocele and umbilical hernia.
7. Describe the development of inferior vena cava. Name any two congenital anomalies associated with its development.
8. Give the development of pituitary gland. What are craniopharyngeomas? *Enumerate pharyngeal pouches with derivatives.*
9. A premature infant developed rapid, shallow respiration shortly after birth. A diagnosis of respiratory distress syndrome was made.
 - a. How the infant might attempt to overcome inadequate exchange of oxygen and carbon dioxide.
 - b. What is its cause?
 - c. What treatment is currently used to prevent it.
10. Give an account of congenital adrenal hyperplasia & adrenogenital syndrome.

