بسم الله الرحمـٰن الرحيم

{مِن نُّطْفَةٍ خَلَقَهُ فَقَدَّرَهُ}

Embryology | FINAL

Past Papers & Test Bank

Written by : **DST**

Reviewed by : **Mohammad Al-Amawi**

Past Papers

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Foregut & GIT-Associated Organs

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Q1:All of the following happen during the rotation of the stomach except:

a. the right part becomes posterior.
b. the ventral mesogastrium gives omental bursa.
c. the posterior surface grows to be the greater curvature.
d. left vagus supplies the anterior part.
e. the proximal and distal ends come approximate to each other

Ans: b

Q2:The dorsal pancreatic bud forms all the following parts of the pancreas EXCEPT:

a. Uncinate process of the pancreas
b. Superior part of the head
c. Neck
d. Body
e. Tail

Ans: A

Q3:A 6-week-old infant, projectile vomiting, diarrhea & weight loss What is the most appropriate defect?

a. Pyloric stenosis
b. Esophageal stenosis
c. Tracheoesophageal fistula
d. Esophageal stenosis

Ans: a

Q4:The liver develops from all of the following EXCEPT:

a. endoderm of the gut

b. umbilical vein sinuses

c. cardinal sinuses

d. vitelline venous sinuses

e. septum transversum

Why? The liver develops from the **1)gut endoderm** (which forms hepatocytes and the biliary lining), the **2)septum transversum** (which provides connective tissue, Kupffer cells, and blood-forming cells), and the **3)vitelline and 4)umbilical veins** (which make the vascular hepatic sinusoids). The cardinal veins do not contribute to the liver, as they instead form the embryo's main systemic venous drainage.

Ans: c

Q5: One of the following congenital anomalies of the gastrointestinal tract results in bilious (bile) vomiting:

a. Hiatal Hernia

b. Esophageal Atresia

c. Annular Pancreas

d. Pyloric Stenosis

e. Esophageal Stenosis

Ans: c

Q6: All of the followings are results of development and rotation of the stomach EXCEPT:

A. Formation of lesser Sac.
B. The stomach appears as a fusiform dilatation with an upper and lower opening at the third week of development.
C. Change in the position of pylorus and cardia.
D. The left vagus becomes anterior to the stomach.
E. Active and rapid growth along the left border of the stomach forming the convex greater curvature of the stomach.

Why?

The fusiform shape of the stomach is mentioned in early embryonic development, but NOT at the 3rd week (it is 4th week).

Ans: B

Q7: Concerning the development of the abdominal wall and peritoneum choose the unsuitable combination:

a. Abdominal wall → Ectoderm + somatic mesoderm.
b. Linea alba → Fusion of right and left mesenchyme in midline.
c. Peritoneal cavity → Intraembryonic coelom.
d. Visceral peritoneum → Splanchnic mesenchyme.
e. Ventral mesentery → All ligaments of the liver.

Ans: e

Q8:A healthy lady gives birth to an infant. Upon start of feeding the baby developed frequent regurgitation with bouts of suffocation and cyanosis. After investigations, this baby's most likely defect will be:

A. Intrinsic muscles of the tongue.

B. Palatoglossal muscle.

C. Hyoglossal muscle.

D. Achalasia.

E. Esophageal atresia and tracheoesophageal fistula.

Ans: E

Q9:A neonate baby was born with diabetes mellitus due to an inadequate production of insulin. Which one of the following is the origin of the cells of pancreas, which produce the insulin?

A) Endoderm.

B) Mesoderm.

C) Septum transversum.

D) Ectoderm.

E) Proctodeum.

Ans: A

Q10: Main pancreatic duct is formed by:

A) All ventral and distal dorsal pancreatic buds

B) Only the dorsal pancreatic bud

C) Only the ventral pancreatic bud

D) Proximal dorsal and ventral buds together

E) Ducts of Langerhans

Note: The slides and last year's recording point to A as the answer. However, in this year's lecture, the doctor stated that the dorsal pancreatic bud forms the main pancreatic duct, and the ventral pancreatic bud forms the accessory duct (probably unintentional).

Ans: A

Q11: Tracheoesophageal fistula results from failure of:

A) Tracheoesophageal ridge formation
B) Pleuroperitoneal membrane closure
C) Midgut rotation
D) Duodenal recanalization
E) Omphalomesenteric duct obliteration

Ans: A

Q12:Ventral mesogastrium gives off the origin of all of the following EXCEPT:

A) Hepatogastric ligament
B) Coronary ligaments
C) Falciform ligament
D) Round ligament of the liver
E) Triangular ligament

Ans: D

Q13: Not True about the embryogenesis of the stomach:

A) 90 anti-clockwise rotation around the anteroposterior axis
B) 90 clockwise rotation around the longitudinal axis
C) Left vagus → anterior wall; right vagus → posterior wall
D) Cardiac and pyloric ends reposition via anteroposterior axis rotation

Ans: A

Q14: All of the following result from the rotation of the stomach during development EXCEPT:

A) Formation of the greater and lesser curvatures
B) Establishment of the anterior and posterior aspects of the stomach
C) Approximation between the cardiac and pyloric regions
D) Positioning of the pylorus to the left and the cardiac region to the right
E) Right vagus nerve will become posterior to the stomach

Ans: D

Q15: One of the following does not contribute to the formation of the definitive liver:

A) Foregut endoderm
B) Mesoderm of the septum transversum
C) Claudine artery

Ans: C

Midgut

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Q16: Meckel’s diverticulum — all the following statements are correct EXCEPT:

a. Occurs in the antimesenteric branch of the ileum
b. May contain gastric mucosa
c. It is situated 2 feet from the ileocecal junction
d. It represents a persistent of vitelline duct
e. May communicate with bladder

Ans: e

Q17: During development, the midgut artery appears markedly narrowed at its origin. Which of the following organs is derived from midgut and may receive inadequate blood supply?

A) Rectum

B) Gallbladder

C) Descending colon

D) Ascending colon

E) Stomach

Ans: D

Q18: In physiological herniation, the intestinal loop of midgut returns to the abdominal cavity from the umbilical cord during the:

A. 4^{th} week of development.

B. 5^{th} Week of development.

C. 6^{th} week of development.

D. 8^{th} week of development.

E. 10^{th} week of development.

Ans: E

Q19: Concerning the physiological herniation, all the following statements are correct EXCEPT:

A. Coiling of the small intestinal loops and complete formation of cecum occur after returning of the intestine to abdominal cavity.

B. During the 10^{th} week of development, the herniated intestinal loops begin to return to the abdominal cavity.

C. The herniation occurs in the intestinal loop of the midgut due to rapid growing of the liver and kidneys.

D. The primary intestinal loop enters the extra embryonic cavity in the umbilical cord during the 6^{th} week of development.

E. The whole rotation of the gut occurs in the abdomen after herniation.

Ans: E

Q20: A neonate has a small a reducible protrusion through a defined ring at the umbilicus. The doctor indicates to the parents that this will likely close spontaneously. Which of the following congenital malformation is present:

A. Symptomatic patent urachus
B. Umbilical hernia.
C. Patent omphalomesenteric duct.
D. Gastroschisis.
E. Omphalocele.

Ans: B

Q21:The omphalocele — all the following statements are correct EXCEPT:

A. It is a herniation of the midgut through the body wall into amniotic cavity.

B. It results from unreturned physiological hernia.

C. It is associated with high rate of mortality.

D. It is associated with severe malformation.

E. It’s associated with chromosomal abnormality.

Ans: A

Q22:90-degree counterclockwise rotation of the intestinal loop will result in:

A) Volvulus
B) Left-sided colon
C) Duplications
D) Omphalocele
E) Gastroschisis

Ans: B

Hindgut

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Q23: Which of the following is forming the lower part of the anal canal:

A. Posterior region of the cloaca.

B. Urorectal septum.

C. Ruptures of the cloacal membrane.

D. Urogenital sinus.

E. Proctodeum.

Ans: E

Q24:Hindgut abnormalities: which of the following results from incomplete separation of the hindgut from the urogenital sinus by urorectal septum:

A. Recto vaginal fistula.

B. Hirschsprung disease.

C. Recto anal atresia.

D. Imperforate anus.

E. Recto perineal fistula.

Ans: A

Q25: If an imperforate anus is associated with recto vesicular fistula, the common cause would be:

A. Absence of allantois.

B. Dilatation of the hindgut.

C. Failure in proctodeum depression.

D. Defect in the urorectal septum.

Ans: D

Q26: Imperforated anus results from which of the following:

A. Cloaca is too small.

B. Defect in the growth of urorectal septum.

C. Failure of the anal membrane to break down.

D. Defect in the development of urogenital sinus.

E. Defect in the growth of the proctodeum.

Ans: C

Q27:All of the following are true about the allantois, EXCEPT:

A. It is endodermal in origin.

B. It is an extension of the cloaca.

C. The urorectal septum passes posterior to it during development.

D. It gives rise to the urinary bladder.

E. It gives rise to the upper part of the anal canal.

Ans: E

Q28:A baby girl at birth has meconium in her vagina and no anal opening. What type of birth defect does she have:

A. Recto-urethral fistula.

B. Recto-vaginal fistula.

C. Uro-rectal fistula.

D. Recto-perineal fistula.

E. Congenital megacolon.

Ans: B

Q29:A general surgeon is giving a lecture… structures superior to the pectinate line of the anal canal, include:

A. Stratified squamous epithelium
B. External hemorrhoids
C. Lymphatic drainage into the superficial inguinal nodes
D. Venous drainage into the caval system
E. Visceral sensory innervation

Ans: E

Test bank

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Q31: The falciform ligament is derived from which of the following embryonic structures?

A) Greater omentum
B) Lesser omentum
C) Dorsal mesogastrium
D) Ventral mesogastrium
E) Mesentery of the jejunum

Ans: D

Q33:The midgut rotates during physiological herniation and retraction to the abdominal cavity. What is the total angle and direction of this rotation?

A) 270° clockwise
B) 180° clockwise
C) 270° counterclockwise
D) 90° counterclockwise
E) 360° clockwise

Ans: C

Q34:**Which of the following congenital anomalies is associated with polyhydramnios and respiratory distress immediately after birth?**

A) Meckel's diverticulum
B) Gastroschisis
C) Tracheoesophageal fistula
D) Umbilical hernia
E) Imperforate anus

Ans: C

Q35:A fistula between the distal esophagus and trachea is most commonly associated with which of the following features?

A) Early passage of meconium
B) Delayed crying after birth
C) Polyhydramnios during pregnancy
D) Membrane-free abdominal wall defect
E) Meconium in the umbilical cord

Ans: C

Q36:Failure of the vitelline duct to obliterate completely can result in which of the following?

A) Tracheoesophageal fistula
B) Meckel’s diverticulum
C) Duodenal atresia
D) Cloacal membrane persistence
E) Imperforate anus

Ans: B

Q37: Imperforate anus most commonly results from abnormal development of which of the following?

A) Vitelline duct
B) Dorsal mesogastrium
C) Cloacal membrane
D) Urorectal septum
E) Allantois

Ans: D

Q38:A mutation causes disruption of the dorsal mesogastrium. Which of the following structures is most likely to be absent or malformed as a result?

A) Round ligament of the liver
B) Hepatoduodenal ligament
C) Greater omentum
D) Falciform ligament
E) Coronary ligament

Ans: C

Q39:A neonate presents with bilious vomiting and severe abdominal distension. Imaging reveals abnormal positioning of the cecum in the upper left quadrant. Which of the following best explains this finding?

A) Failure of midgut herniation
B) Persistent cloacal membrane
C) Non-rotation of the midgut
D) Recanalization failure of duodenum
E) Agenesis of urorectal septum

Ans: C

Textbook

(رَبِّ إِنِّي لِمَا أَنزَلْتَ إِلَيَّ مِنْ خَيْرٍ فَقِيرٌ)

Q41:A prenatal ultrasound at 36 weeks showed polyhydramnios. At birth, the infant had excessive fluid in the mouth and difficulty breathing. Which of the following is the most likely diagnosis?

A) Duodenal atresia
B) Esophageal atresia with or without tracheoesophageal fistula
C) Gastroschisis
D) Omphalocele

Ans: B

Q42:An ultrasound at 20 weeks gestation revealed a midline abdominal mass containing loops of intestine enclosed in a membrane. What is the most likely diagnosis?

A) Gastroschisis
B) Omphalocele
C) Umbilical hernia
D) Meckel's diverticulum

Ans: B

رسالة من الفريق العلمي:

عن عبدالله بن عبّاس- رضي الله عنهما- عن النبيّ -صلّى الله عليه وسلّم- أنّه قال: "ما من أيّام العمل الصالح فيهنّ أحبّ إلى الله من هذه الأيّام العشر . قالوا : يا رسولَ الله، ولا الجهاد في سبيل الله ؟ فقال رسول الله -صلّى الله عليه وسلّم- : ولا الجهاد في سبيل الله إلا رجل خرج بنفسه وماله فلم يرجع من ذلك بشيء".

فليحرص العبد في هذه الأيّام أوّلًا على الالتزام بالفرائض والواجبات، كأداء الصلاة في وقتها وبرّ الوالدين. كما يُستحب التقرّب إلى الله بالنوافل، كالصيام وتلاوة القرآن. وقد أوصى النبيّ -صلّى الله عليه وسلّم- بالإكثار فيها من التهليل والتكبير والتحميد، مع ضرورة اجتناب المحرّمات، كآفات اللسان والخصومات.

For any feedback, scan the code or click on it.

Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			