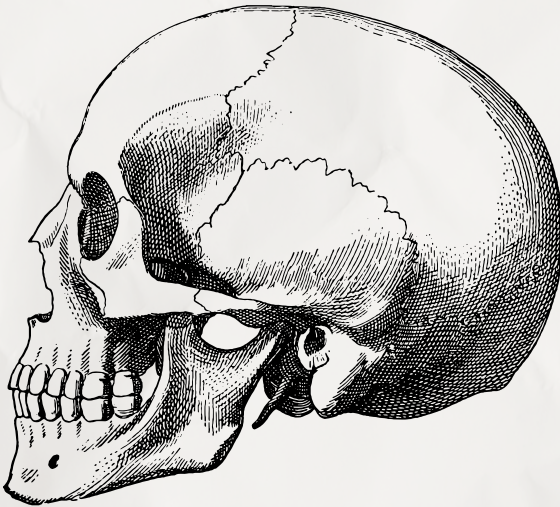


ANATOMY & EMBRYOLOGY

FINAL EXAM



Done by: rahaf alfogaha

Embryology:

Which of the following represents the correct chronological .1
?order of early embryonic development

- A. Morula → Zygote → Blastula → Gastrula
- B. Zygote → Blastula → Morula → Gastrula
- C. Zygote → Morula → Blastula → Gastrula
- D. Blastula → Zygote → Gastrula → Morula
- E. Morula → Gastrula → Zygote → Blastula

Ans : c

2. What is the main function of the zona pellucida during fertilization?

- A. Nourishment of the embryo
- B. Enhancing sperm motility
- C. Prevention of polyspermy
- D. Facilitation of implantation
- E. Secretion of hCG

Ans:c

3. What occurs immediately after the acrosome reaction during fertilization?

- A. Zona pellucida breakdown
- B. Cortical reaction
- C. Fusion of sperm membrane with oocyte membrane
- D. Completion of meiosis I
- E. Formation of the morula

Ans: c

4. Which of the following best describes the process of fertilization?

- A. The cleavage of the zygote into blastomeres
- B. The fusion of male and female pronuclei
- C. The migration of the embryo into the uterus
- D. The implantation of the blastocyst into the endometrium
- E. The beginning of organogenesis

Ans : B

Embryology:

5. What is the term used to describe the developing organism from implantation until the end of the 8th week

- A. Fetus
- B. Blastocyst
- C. Morula
- D. Embryo
- E. Zygote

Ans : D

6. Which structure gives rise to the fetal portion of the placenta .6

- A. Inner cell mass
- B. Epiblast
- C. Hypoblast
- D. Trophoblast
- E. Yolk sac

Ans : D

7. Which germ layer is responsible for the development of muscle and connective tissue .7

- A. Ectoderm
- B. Endoderm
- C. Mesoderm
- D. Epiblast
- E. Hypoblast

Ans: C

8. The skin and nervous system both arise from which germ layer .8

- A. Ectoderm
- B. Mesoderm
- C. Endoderm
- D. Extraembryonic mesoderm
- E. Intermediate mesoderm

Ans : A

Embryology:

9. The limb buds arise from which of the following embryonic tissues?

- A. Intermediate mesoderm
- B. Paraxial mesoderm
- C. Lateral plate mesoderm
- D. Neural crest cells
- E. Ectoderm

Ans : C

10. The outer covering of the developing limb buds is derived from which of the following?

- A. Endoderm
- B. Somites
- C. Neural tube
- D. Ectoderm
- E. Notochord

Ans: D

11. The process of forming separate fingers from the limb bud occurs during which embryonic week?

- A. Week 4
- B. Week 5
- C. Week 6
- D. Week 7
- E. Week 9

Ans : C

12. Which of the following structures is derived from the lateral plate (somatic) mesoderm?

- A. Neural tube
- B. Gut epithelium
- C. Heart muscle
- D. Limb bones
- E. Kidney tubules

Ans : D

Embryology:

13. All bones of the limbs are formed through which of the following processes?

- A. Intramembranous ossification
- B. Cartilage modeling
- C. Endochondral ossification
- D. Compact bone remodeling
- E. Mesenchymal condensation only

Ans : C

14. The clavicle is unique among bones because it forms via which ossification method?

- A. Endochondral ossification
- B. Intramembranous ossification
- C. Perichondral ossification
- D. Mixed ossification
- E. Cartilage-to-bone transformation

Ans : B

15. Skeletal muscle tissue is derived from which specific part of the somite?

- A. Dermatome
- B. Sclerotome
- C. Myotome
- D. Neural crest
- E. Lateral mesoderm

Ans : C

16. A newborn presents with respiratory distress. Which of the following conditions could explain this presentation?

- A. Failure of neural tube closure
- B. Tracheoesophageal septum defect
- C. Omphalocele
- D. Polyspermy
- E. Incomplete blastocyst formation

Ans : B

Embryology:

17. Surfactant deficiency in a premature newborn is most likely to result in which of the following?

- A. Hydrocephalus
- B. Diaphragmatic hernia
- C. Respiratory distress syndrome
- D. Clubfoot
- E. Tetralogy of Fallot

Ans : C

Anatomy:

18. A pregnant woman with a full urinary bladder, what structure lies anterior to the bladder?

- A. The anterior surface of the uterus
- B. The anterior surface of the pubic symphysis
- C. The anterior surface of the rectum
- D. The anterior surface of the anterior abdominal wall
- E. The anterior surface of the sacrum

Ans: D

19. How many bronchopulmonary segments are present in the right and left lungs, respectively?

- A. 10 right, 10 left
- B. 9 right, 9 left
- C. 10 right, 9 left
- D. 9 right, 8 left
- E. 8 right, 8 left

Ans: C

20. All of the following are components of the superior mediastinum EXCEPT:

- A. Aortic arch
- B. Trachea
- C. Esophagus
- D. Thymus
- E. Descending aorta

Ans: E

Anatomy:

21. Which of the following is an INCORRECT matching regarding the posterior mediastinum?

- A. Thoracic duct – posterior mediastinum
- B. Posterior mediastinum – between T5–T10
- C. Esophagus – posterior mediastinum
- D. Azygos vein – posterior mediastinum
- E. Sympathetic chain – posterior mediastinum

Ans: B

22. All of the following are sinuses EXCEPT:

- A. Frontal sinus
- B. Ethmoidal sinus
- C. Sphenoidal sinus
- D. Mandibular sinus
- E. Maxillary sinus

Ans: D

23. Where is Little's area located?

- A. Inferior wall of the larynx
- B. Posterior wall of the nasal cavity
- C. Anterior part of the nasal septum
- D. Floor of the oral cavity
- E. Roof of the pharynx

Ans: C

24. The cartilage commonly known as the "Adam's apple" refers to which of the following?

- A. Arytenoid cartilage
- B. Cricoid cartilage
- C. Thyroid cartilage
- D. Epiglottic cartilage
- E. Corniculate cartilage

Ans: C

Anatomy:

25. Which muscle is responsible for stretching the vocal cords to increase pitch?

- A. Posterior cricoarytenoid
- B. Cricothyroid
- C. Lateral cricoarytenoid
- D. Thyroarytenoid
- E. Aryepiglottic

Ans: B

26. The trachea ends at which anatomical landmark?

- A. Manubrium of the sternum
- B. Lower border of T3
- C. Upper border of T4
- D. Sternal angle (lower border of T4)
- E. Body of T5

Ans: D

27. Which of the following is INCORRECT regarding the right main bronchus?

- A. It is wider than the left
- B. It is shorter than the left
- C. It runs more vertically
- D. It makes a 45° angle with the trachea
- E. It gives off three secondary bronchi

Ans: D

28. Which of the following is NOT correct about the ureter?

- A. It is a retroperitoneal structure
- B. It has three physiological constrictions
- C. It passes posterior to the gonadal vessels
- D. It enters the bladder at an angle to prevent backflow
- E. It is shorter on the right side than the left

Ans: E

Anatomy:

29. Which of the following is NOT correct about the esophagus?

- A. It has an inner circular and outer longitudinal muscle layer
- B. It ends at the level of T12
- C. It is supplied by branches of the thoracic aorta
- D. It pierces the diaphragm through the esophageal hiatus
- E. It has an upper and lower sphincter

Ans: B

30. Which of the following is true regarding the thoracic duct?

- A. It passes through the esophageal hiatus
- B. It drains only the lower limbs
- C. It enters through the aortic opening of the diaphragm
- D. It empties into the azygos vein
- E. It runs anterior to the trachea

Ans: C

31. The 4th to 11th intercostal veins and subcostal vein on the right drain into which of the following?

- A. Hemiazygos vein
- B. Accessory hemiazygos vein
- C. Azygos vein
- D. Brachiocephalic vein
- E. Internal thoracic vein

Ans: C

32. All of the following arteries supply the stomach EXCEPT:

- A. Left gastric artery
- B. Right gastric artery
- C. Common hepatic artery
- D. Splenic artery
- E. Superior mesenteric artery

Ans: E

Anatomy:

33. Which of the following organs is intraperitoneal?

- A. Kidney
- B. Pancreas
- C. Duodenum (second part)
- D. Stomach
- E. Ascending colon

Ans: D

34. All of the following are derivatives of the foregut EXCEPT:

- A. Esophagus
- B. Stomach
- C. First part of duodenum
- D. Liver
- E. Cecum

Ans: E

35. Which of the following is a derivative of the midgut?

- A. Esophagus
- B. Rectum
- C. Appendix
- D. Liver
- E. Gall bladder

Ans: C

36. Which of the following is part of the hindgut?

- A. Duodenum
- B. Ileum
- C. Cecum
- D. Descending colon
- E. Jejunum

Ans: D

Anatomy:

37. What are the folds seen in the mucosa of an empty stomach called?

- A. Plicae circulares
- B. Villi
- C. Haustra
- D. Rugae
- E. Fimbriae

Ans: D

38. What is the main function of the duodenal papilla?

- A. Absorption of bile salts
- B. Mixing food with gastric acid
- C. Secretion of digestive enzymes
- D. Entry of pancreatic and bile secretions into the duodenum
- E. Neutralization of acid

Ans: D

39. The gallbladder connects to the biliary system through which of the following structures?

- A. Common bile duct
- B. Hepatic duct
- C. Pancreatic duct
- D. Cystic duct
- E. Ampulla of Vater

Ans: D

40. The thoracic outlet is bounded posteriorly by which of the following structures?

- A. First costal cartilage
- B. Clavicle
- C. First thoracic vertebra
- D. Manubrium sterni
- E. Seventh cervical vertebra

Ans: C

Anatomy:

41. The sternal angle lies at which of the following anatomical levels?

- A. Between T2 and T3
- B. At the level of T3
- C. Between T4 and T5
- D. At the level of T6
- E. At the upper border of T4

Ans: C

42. What is the weakest part of the rib where it tends to fracture?

- A. Head
- B. Neck
- C. Tubercle
- D. Angle
- E. Shaft

Ans: D

43. Which of the following statements about the posterior mediastinum is correct?

- A. It contains the heart and pericardium
- B. It lies anterior to the sternum
- C. It contains the azygos vein and thoracic duct
- D. It extends from T1 to T4
- E. It includes the thymus

Ans: C

44. All of the following are found in the superior mediastinum EXCEPT:

- A. Right brachiocephalic vein
- B. Aortic arch
- C. Left common carotid artery
- D. Right common carotid artery
- E. Left subclavian artery

Ans: D

Anatomy:

45. Which of the following is NOT a paranasal sinus?

- A. Sphenoid air sinus
- B. Frontal air sinus
- C. Anterior ethmoidal air sinus
- D. Maxillary air sinus
- E. Mandibular air sinus

Ans: E

46. Which of the following is CORRECT about the right lung?

- A. It has two lobes and one fissure
- B. It has three lobes and two fissures
- C. It is narrower than the left lung
- D. It has the cardiac notch
- E. It is longer than the left lung

Ans: B

47. How many lobes are present in the left lung?

- A. One
- B. Two
- C. Three
- D. Four
- E. Five

Ans: B

48. What is the continuation of the external iliac artery?

- A) Popliteal artery
- B) Femoral artery
- C) Internal iliac artery
- D) Deep femoral artery
- E) Obturator artery

Ans: B

Anatomy:

49. A patient has a torn rotator cuff of the shoulder joint as the result of an automobile accident. Which of the following muscle tendons is intact and has normal function?

- a) Supraspinatus
- b) Subscapularis
- C) Teres major
- d) Teres minor
- e) Infraspinatus

Ans: c

50. A muscle originates from the coracoid process of the scapula and inserts into the medial surface of the humerus. It is supplied by the musculocutaneous nerve and does not cross the elbow joint. Which muscle is it?

- A) Biceps brachii
- B) Brachialis
- C) Coracobrachialis
- D) Triceps brachii
- E) Deltoid

Ans: c

51. Which muscle of the anterior arm compartment is considered the main flexor of the elbow, lies deep to the biceps brachii, and is innervated by the musculocutaneous nerve?

- A) Biceps brachii
- B) Triceps brachii
- C) Coracobrachialis
- D) Brachialis
- E) Pronator teres

Ans : D

Anatomy:

52. A man is unable to hold typing paper between his index and middle fingers. Which of the following nerves was likely injured?

- a) Radial nerve
- b) Median nerve
- c) Ulnar nerve
- d) Musculocutaneous nerve
- e) Axillary nerve

Ans : c

53. A 21-year-old man injures his right arm in an automobile accident. Radiographic examination reveals a fracture of the medial epicondyle of the humerus. Which of the following nerves is most likely injured as a result of this accident?

- a) Axillary
- b) Musculocutaneous
- c) Radial
- d) Median
- e) Ulnar

Ans : E

54. A 35-year-old tennis player complains of pain over the medial elbow and weakness in wrist flexion and adduction. The muscle affected is innervated by which nerve?

- a) Median nerve
- b) Radial nerve
- c) Ulnar nerve
- d) Musculocutaneous nerve
- e) Axillary nerve

Ans : c

Anatomy:

55. The continuation of the external iliac artery is called:

- A. Popliteal artery
- B. Deep femoral artery
- C. Femoral artery
- D. Internal iliac artery
- E. Obturator artery

Ans: C

56. The aortic valve can be auscultated best at:

- A. Left 5th intercostal space, midclavicular line
- B. Right 2nd intercostal space
- C. Left 2nd intercostal space
- D. Lower left sternal border
- E. Apex of the heart

Ans: B

57. The mitral valve lies at which of the following locations?

- A. Right 2nd intercostal space
- B. Left sternal border, 4th space
- C. Left 5th intercostal space, midclavicular line
- D. Left 2nd intercostal space
- E. Xiphoid level

Ans: C

58. The anterior surface of the heart consists mostly of which chamber(s)?

- A. Left atrium
- B. Right atrium and left atrium
- C. Right ventricle and left ventricle
- D. 2/3 right ventricle, 1/3 left ventricle
- E. Entirely right ventricle

Ans: D

Anatomy:

59. Which muscle is responsible for unlocking the knee joint?

- A. Quadriceps femoris
- B. Semitendinosus
- C. Sartorius
- D. Popliteus
- E. Gastrocnemius

Ans: D

60. The strongest muscle of the thigh that forms its bulk is:

- A. Hamstring
- B. Sartorius
- C. Adductor longus
- D. Rectus femoris
- E. Quadriceps femoris

Ans: E

61. Which artery supplies the foregut?

- A. Superior mesenteric artery
- B. Inferior mesenteric artery
- C. Celiac trunk
- D. Renal artery
- E. Left gastric artery

Ans: C

62. Which artery supplies the midgut?

- A. Inferior mesenteric artery
- B. Celiac trunk
- C. Aortic arch
- D. Superior mesenteric artery
- E. Left colic artery

Ans: D

Anatomy:

63. The anterior wall of the urinary bladder in females is related to:

- A. Rectum
- B. Cervix
- C. Uterus
- D. Anterior abdominal wall
- E. Sigmoid colon

Ans: D

64. The popliteal artery is the direct continuation of which artery, and it bifurcates into:

- A. Femoral → anterior & posterior tibial
- B. External iliac → peroneal & tibial
- C. Internal iliac → fibular & popliteal
- D. Femoral → common iliac & tibial
- E. External iliac → profunda & tibial

Ans: A

65. Which of the following ribs is NOT a true rib?

- A. 1
- B. 5
- C. 7
- D. 8
- E. 9

Ans: E

Anatomy:

66. Where does the thoracic duct enter the thoracic cavity?

- A. Aortic hiatus
- B. Esophageal hiatus
- C. Caval opening
- D. Intercostal space
- E. Right atrium

Ans: A

67. The descending aorta begins at which anatomical landmark?

- A. T2 vertebra
- B. Jugular notch
- C. Sternal angle
- D. Xiphoid process
- E. Costal margin

Ans: C

68. The sternal angle corresponds to which vertebral level?

- A. T1
- B. T2
- C. T3
- D. T4/T5 intervertebral disc
- E. T6

Ans: D

69. The placenta is derived from which embryonic structure?

- A. Epiblast
- B. Hypoblast
- C. Endoderm
- D. Trophoblast
- E. Chorion

Ans: D

Anatomy:

70. What is gametogenesis?

- A. Fusion of sperm and ovum
- B. Development of the embryo
- C. Process of producing gametes
- D. Maturation of zygote
- E. Implantation in uterus

Ans: C

71. What is a zygote?

- A. Unfertilized ovum
- B. Mature sperm
- C. Cell resulting from fusion of sperm and ovum
- D. Embryo at 4 weeks
- E. Blastocyst

Ans: C

72. What results from the development of a fertilized zygote?

- A. Oocyte
- B. Morula
- C. Placenta
- D. Trophoblast only
- E. Testis

Ans: B

73. What is the process of bone formation called?

- A. Osteolysis
- B. Calcification
- C. Ossification
- D. Mitosis
- E. Myogenesis

Ans: C

Anatomy:

74. What type of ossification forms the clavicle?

- A. Endochondral ossification
- B. Intramembranous ossification
- C. Mixed (both types)
- D. Secondary ossification
- E. Cartilaginous replacement

Ans: C

75. Bones of the limbs are derived from which embryonic structure?

- A. Paraxial mesoderm
- B. Neural crest
- C. Intermediate mesoderm
- D. Lateral plate (somatic) mesoderm
- E. Endoderm

Ans: D

76. During development, upper limbs rotate in which direction?

- A. Medially
- B. Laterally
- C. Inferiorly
- D. Superiorly
- E. Clockwise

Ans: B

77. Fingers begin to appear at which week of development?

- A. Week 4
- B. Week 5
- C. Week 6
- D. Week 7
- E. Week 8

Ans: C

Anatomy:

78. The base of the heart is mainly formed by which chamber?

- A. Right ventricle
- B. Left ventricle
- C. Left atrium
- D. Right atrium
- E. Interatrial septum

Ans: C

79. The pericardium lies opposite which costal cartilages?

- A. 2nd to 4th
- B. 3rd to 5th
- C. 5th to 7th
- D. 1st to 3rd
- E. 6th to 8th

Ans: B

80. Which of the following organs belong to both midgut and hindgut?

- A. Duodenum
- B. Jejunum
- C. Transverse colon
- D. Rectum
- E. Pancreas

Ans: C

81. The stomach is classified as which type of organ?

- A. Retroperitoneal
- B. Secondarily retroperitoneal
- C. Intraperitoneal
- D. Extraperitoneal
- E. Subperitoneal

Ans: C

Anatomy:

82. Which muscle stretches the vocal cords and increases pitch?

- A. Posterior cricoarytenoid
- B. Lateral cricoarytenoid
- C. Thyroarytenoid
- D. Cricothyroid
- E. Aryepiglottic

Ans: D

83. How many lobes does the right lung have?

- A. One
- B. Two
- C. Three
- D. Four
- E. Five

Ans: C

84. How many bronchopulmonary segments are found in the left lung?

- A. 7
- B. 8
- C. 9
- D. 10
- E. 11

Ans: C

85. Which of the following is NOT found in the middle mediastinum?

- A. Pericardium
- B. Heart
- C. Phrenic nerves
- D. Lung
- E. Ascending aorta

Ans: D

Anatomy:

86. Which of the following arteries does NOT supply the stomach?

- A. Right gastric artery
- B. Left gastric artery
- C. Splenic artery
- D. Common hepatic artery
- E. Inferior mesenteric artery

Ans: E

87. Which of the following is NOT located in the superior mediastinum?

- A. Brachiocephalic veins
- B. Aortic arch
- C. Left common carotid artery
- D. Right common carotid artery
- E. Left subclavian artery

Ans: D

88. The right 4th to 11th intercostal veins and subcostal vein drain into which of the following?

- A. Hemiazygos vein
- B. Accessory hemiazygos vein
- C. Azygos vein
- D. Internal thoracic vein
- E. Superior vena cava

Ans: C

89. What is the approximate length of the vas deferens?

- A. 15 cm
- B. 25 cm
- C. 35 cm
- D. 45 cm
- E. 55 cm

Ans: D

Anatomy:

90. The testicular artery arises from the abdominal aorta at which vertebral level?

- A. T10
- B. T12
- C. L1
- D. L2
- E. L3

Ans: D

91. The cremasteric fascia is derived from which of the following muscles?

- A. External oblique
- B. Internal oblique
- C. Transversus abdominis
- D. Rectus abdominis
- E. Cremaster muscle

Ans: B

92. The seminal vesicles are located in which relation to the urinary bladder?

- A. Superior
- B. Inferior
- C. Posterior
- D. Anterior
- E. Lateral

Ans: C

93. The posterior relation of the seminal vesicles is:

- A. Urinary bladder
- B. Pubic symphysis
- C. Internal iliac vessels
- D. Rectum
- E. Ureter

Ans: D

Anatomy:

94. In a pregnant woman with a full urinary bladder, where does the bladder project?

- A. Into the pelvic cavity
- B. Behind the uterus
- C. Toward the anterior abdominal wall
- D. Toward the symphysis pubis
- E. Into the rectouterine pouch

Ans: C

95. Which of the following statements about the internal urethral sphincter is INCORRECT?

- A. It is involuntary
- B. It prevents semen reflux into the bladder
- C. It is under autonomic control
- D. It surrounds the apex of the bladder
- E. It is located at the neck of the bladder

Ans: D

96. Which of the following structures is found on the anterior surface of the right kidney?

- A. Spleen
- B. Stomach
- C. Liver
- D. Descending colon
- E. Left colic flexure

Ans: C

97. Which of the following lies anterior to the left kidney?

- A. Duodenum (2nd part)
- B. Ascending colon
- C. Liver
- D. Stomach
- E. Right adrenal gland

Ans: D

Anatomy:

98. Which of the following is NOT related to the anterior surface of the right kidney?

- A. Right lobe of the liver
- B. Second part of the duodenum
- C. Right adrenal gland
- D. Spleen
- E. Right colic flexure

Ans: D

99. The structure crossing anterior to the ureter in females is:

- A. Uterine artery
- B. Ovarian vein
- C. Internal iliac artery
- D. External iliac vein
- E. Broad ligament

Ans: A

100. The ureter in females is located posterior to which structure?

- A. Uterine artery
- B. Urinary bladder
- C. Rectum
- D. Ovary
- E. Vagina

Ans:A

