



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF
BACHELOR OF MEDICINE AND BACHELOR OF SURGERY [MBCbB]
END YEAR 2022/2023
[MAY-AUGUST, 2023]

MEDS 210: HUMAN ANATOMY 2
PAPER I

STREAM: Y2S3

TIME: 3 HOURS

DAY: WEDNESDAY, 9:00 – 12:00 PM

DATE: 24/08/2023

INSTRUCTIONS

1. Do not write anything on this question paper.

PAPER 1: MULTIPLE CHOICE QUESTIONS

Instructions

- 1. Answer all questions on the answer sheet provided on the last page**
- 2. Choose the most correct response**
- 3. Write your registration number on all pages**

1. The main sensory nerve to the pinna of the ear:

- a) Great auricular
- b) Greater occipital
- c) Zygomatico-facial
- d) Zygomaticotemporal
- e) Lesser occipital

2. The superior orbital fissure is bounded by the:

- a) Maxilla and greater wing of sphenoid
- b) Maxilla and lesser wing of sphenoid
- c) Lesser wing of sphenoid and ethmoidal
- d) Lesser wing and greater wing of sphenoid
- e) Lesser wing of sphenoid and frontal

3. Commonly found in abducent nerve paralysis:

- a) Ptosis
- b) Convergent squint
- c) Loss of upward gaze
- d) Loss of medial gaze
- e) Loss of accommodation

4. Transmitted by the carotid canal:

- a) External carotid artery
- b) Sympathetic nerves to the eye
- c) The facial nerve
- d) The vagus nerve
- e) None of the above

5. The main artery to the palatine tonsil comes from this artery:

- a) Lingual
- b) Faucial
- c) Facial
- d) Submandibular
- e) Sublingual

6. The following artery has origin from internal carotid artery:

- a) Lingual
- b) Facial
- c) Superior thyroid
- d) Inferior thyroid
- e) None of the above

7. The hypoglossal nerve supplies the following muscles, EXCEPT:

- a) Hyoglossus
- b) Inferior longitudinal muscle of the tongue
- c) Genioglossus
- d) Styloglossus
- e) Mylohyoid

8. A muscle attached to the coronoid process of mandible:

- a) Buccinator
- b) Lateral pterygoid
- c) Medial pterygoid
- d) Temporalis
- e) Masseter

9. The zygomatic arch gives origin to:

- a) Masseter
- b) Temporalis
- c) Buccinator
- d) Platysma

e) Medial pterygoid

10. The intermediate tendon of the omohyoid muscle is anchored by a fascial sling to the:

- a) Hyoid bone
- b) Thyroid cartilage
- c) Clavicle
- d) Sternum
- e) Scapula

11. The sternal angle is at the level of the lower border of vertebra:

- a) T1
- b) T2
- c) T3
- d) T4
- e) T5

12. The following ribs are typical EXCEPT the:

- a) First
- b) Third
- c) Fifth
- d) Seventh
- e) Ninth

13. The brachiocephalic trunk divides into two arteries:

- a) Right and left common carotid
- b) Right common carotid and right subclavian
- c) Left common carotid and left subclavian
- d) Right and left subclavian
- e) Right and left coronary

14. The azygos vein:

- a) Carries blood from the oesophagus
- b) Arches directly over the inferior lobe bronchus
- c) Passes between the vagus and the trachea
- d) Joins the superior vena cava behind the first costal cartilage
- e) None of the above

15. The number of pulmonary veins entering the left atrium is normally:

- a) One
- b) Two
- c) Four
- d) Six
- e) Eight

16. Anterior to oesophagus:

- a) Left atrium
- b) Left bronchus
- c) Trachea
- d) Lymph nodes
- e) All of the above

17. At the level of the sternal angle:

- a) Bifurcation of the pulmonary artery
- b) Upper border of left atrium
- c) Bifurcation of the trachea
- d) Aortic valve
- e) Formation of superior vena cava

18. The number of pairs of costal cartilages usually attached the sternum:

- a) Six
- b) Seven
- c) Eight
- d) Nine
- e) Ten

19. The intercostal nerves and vessels course between:

- a) Skin and deep fascia
- b) Deep fascia and external intercostals
- c) External and internal intercostals
- d) Internal and innermost intercostals
- e) Innermost intercostals and endotheracic fascia

20. The most superficial structure in the superior mediastinum:

- a) Thymus
- b) Arch of aorta
- c) Left brachiocephalic vein
- d) Brachiocephalic trunk
- e) Vagus nerve

21. The internal spermatic fascia is derived from the:

- a) External oblique
- b) Internal oblique
- c) Transversus abdominis
- d) Transversalis fascia
- e) Peritoneum

22. Immediately medial to the deep inguinal ring:

- a) Femoral artery
- b) Linea alba
- c) Spermatic cord

- d) The inguinal (Hesselbach's) triangle
- e) Inferior epigastric artery

23. The most common position of the vermiform appendix is:

- a) Retrocaecal
- b) Retrocolic
- c) Retroileal
- d) Pelvic
- e) Subcaecal

24. Upper boundary of the hepatorenal (right subhepatic) pouch:

- a) Duodenum
- b) Right kidney
- c) Diaphragm
- d) Lower layer of coronary ligament
- e) Upper layer of coronary ligament

25. Vertebral level of origin of renal arteries:

- a) T12
- b) L1
- c) L2
- d) L3
- e) L4

26. Vertebral level of bifurcation of abdominal aorta:

- a) L2
- b) L3
- c) L4
- d) L5
- e) S1

27. A branch of the hepatic artery:

- a) Cystic
- b) Left gastric
- c) Splenic
- d) Gastrohepatic
- e) Oesophageal

28. A branch of the inferior mesenteric artery:

- a) Right colic
- b) Left colic
- c) Middle colic
- d) Left gastroepiploic
- e) Splenic

29. Directly behind the duodenum:

- a) Hepatic artery
- b) Gastroduodenal artery
- c) Right gastric artery
- d) Superior mesenteric vein
- e) Inferior mesenteric vein

30. Behind the kidney:

- a) Quadratus lumborum
- b) Twelfth rib
- c) Subcostal nerve
- d) Diaphragm
- e) All of the above

31. The prostate:

- a) Is the size of an orange
- b) Surrounds the membranous urethra
- c) Is pierced by the ductus (vas) deferens
- d) Has no function in man
- e) None of the above

32. The anal valves are at the level of the:

- a) Anorectal junction
- b) Anal margin
- c) White line of Hilton
- d) Rectal ampulla
- e) Pectinate line

33. The uterine artery:

- a) Usually arises from the internal iliac artery
- b) Anastomoses with the ovarian artery
- c) Crosses the ureter above the lateral vaginal fornix
- d) Gives branches to the vagina
- e) All of the above

34. The internal os of the uterus marks the junction of:

- a) Uterine tube and peritoneal cavity
- b) Uterine tube and fundus of uterus
- c) Fundus and body of uterus
- d) Body and cervix of uterus
- e) Cervix and vagina

35. The lateral fornix of the vagina is most closely related to the:

- a) Urethra
- b) Ureter
- c) Middle rectal artery
- d) Uterine artery

e) Round ligament of uterus

36. The ischiorectal fossa is bounded directly by:

- a) The rectum and ischium
- b) Obturator internus fascia and rectum
- c) Levator ani and obturator internus fascia
- d) Ischium and sacrum
- e) None of the above

37. Location of sphincter urethrae:

- a) Superficial perineal pouch
- b) Deep perineal pouch
- c) Ischiorectal fossa
- d) Above the prostate gland
- e) None of the above

38. The superficial inguinal lymph nodes receive lymph from:

- a) Anal canal
- b) Vagina
- c) Lower abdominal wall
- d) Rectum
- e) All of the above

39. Nodes receiving lymph from the testis:

- a) External iliac
- b) Internal iliac
- c) Superficial inguinal
- d) Presacral
- e) Para-aortic

40. Composed of smooth muscle:

- a) Bulbospongiosus
- b) Levatorani
- c) Sphincter urethrae
- d) External anal sphincter
- e) Internal anal sphincter

41. The thoracoacromial artery is a branch of the

- a) Subclavian artery.
- b) First part of the axillary artery.
- c) Second part of the axillary artery.
- d) Third part of the axillary artery.
- e) Brachial artery

42. Paralysis of the serratus anterior muscle causes

- a) Winging of the scapula.
- b) Claw hand.
- c) Ape hand.

- d) Wrist drop.
- e) Policeman's tip position

43. The female breast

- a) Has a nipple that is usually located opposite the 6th intercostals space.
- b) Has Cooper's ligament that suspends the breast.
- c) Has a bed formed mainly by the serratus anterior muscle.
- d) Has about 5 lactiferous sinuses.
- e) Its lymphatics drain mainly in the parasternal lymph nodes

44. The quadriceps femoris muscle

- a) Extends the knee
- b) Flexes the knee
- c) Extends the hip
- d) Rotates the knee
- e) Abducts the knee

45. The femoral canal contains

- a) The femoral nerve
- b) The femoral artery
- c) The femoral vein
- d) The ilioinguinal nerve
- e) Lymphatics

46. Untrue of the ankle joint

- a) Is formed between the talar trochlear and the distal tibia and fibula
- b) Is more stable in plantarflexion
- c) Has a deltoid ligament attached to the neck of talus
- d) Has a lateral ligament with attachment to the calcaneus
- e) Has anterior tibial vessels as an anterior relation

47. Commonest level of termination of the adult spinal cord:

- a) T12-L1 disc
- b) L1-L2disc
- c) L3-L4disc
- d) L5-S1 disc
- e) Second sacral vertebra

48. Superior cerebral veins drain into:

- a) Cavernous sinus
- b) Great cerebral vein
- c) Inferior petrosal sinus
- d) Superior petrosal sinus
- e) Superior sagittal sinus

49. Folds of the cerebral cortex overlying the insula are called

- a) Temporal lobes
- b) Corpus callosum
- c) Opercula
- d) Extreme capsule
- e) Pallia

50. The 4th ventricle

- a) Has the superior cerebellar peduncles in the midline of the roof
- b) Is infiltrated by choroid plexus through the superior medullary velum
- c) Has a lateral recess ending in a foramen deep to the superior cerebellar peduncle
- d) Has the facial colliculus near the midline rostral to the stria medullares
- e) Is limited inferiorly by the pyramids

51. During the formation of the face, failure of the maxillary prominence to merge with its corresponding lateral nasal prominence leads to the following deformity

- a) Lateral cleft lip
- b) Cleft palate
- c) Oblique facial cleft
- d) Median cleft lip
- e) Bilateral cleft

52. The following is FALSE regarding the Arnold – Chiari malformation

- a) It is associated with almost all cases of spina bifida cystica
- b) It is associated with non-communicating hydrocephalus
- c) Posterior cranial fossa abnormalities are seen in affected infants
- d) The vermis of the cerebellum herniates through foramen magnum
- e) Alpha fetoprotein is raised in the maternal serum

53. One of the following is not derived from the neural crest:

- a) Dorsal root ganglia.
- b) Suprarenal cortex.
- c) Genuiculate ganglion of the facial nerve.
- d) Gracile tract.
- e) Sympathetic chain

54. Failure of the neural tube to close causes:

- a) Hydrocephalus.
- b) Anencephaly.
- c) Meningocele.
- d) All of the above.
- e) None of the above.

55. The following are derivatives of the foregut EXCEPT

- a) Esophagus
- b) Pancreas
- c) Merckel diverticulum
- d) Gall bladder
- e) Stomach

56. The following are derivatives of the hindgut EXCEPT

- a) Sigmoid colon
- b) Descending colon
- c) Upper anal canal
- d) Ascending colon
- e) Rectum

57. Untrue about pharyngeal arch derivatives:

- a) Anterior 2/3 tongue develops from 1st pharyngeal arch
- b) Laryngeal cartilages are derived from 4th & 6th arch
- c) Branchial cyst is persistent cervical sinus
- d) Buccinator is mesodermal derivative of first arch
- e) All of the above are untrue

58. Derivatives of the metanephric blastema include

- a) ureter
- b) minor calyces
- c) Bowmans capsule
- d) distal convoluted tubule
- e) collecting ducts

59. Which of the following is NOT associated with an Atrial Septal Defect?

- a) Persistent ostium secundum
- b) Endocardial cushion defect
- c) Sinus venosum defect
- d) Probe patency
- e) Transposition of the Great Vessels

60. The sequential development of the renal structures within intermediate mesoderm can best be described as:

- a) pronephros, mesonephros, metanephros
- b) pronephros, metanephros, mesonephros
- c) mesonephric duct, metanephros, mesonephros
- d) mesonephric duct, paramesonephric duct, metanephros
- e) uteric bud, ureter, urinary bladder

61. The lower end of the mesonephric duct branches to form the

- a) Ureteric bud
- b) Uterus bud
- c) Urethral bud
- d) Gonadal bud
- e) None of the above

62. The uterine tubes, uterus, cervix, and superior part (1/3) of the vagina all arise from:

- a) The Wolffian ducts
- b) The paramesonephric ducts
- c) The mesonephric ducts
- d) Leydig recess
- e) Mullerian ducts

63. Which of the following phases of the cell cycle has the longest duration?

- a) G1 phase
- b) G2 phase
- c) S phase
- d) Mitosis (M phase)
- e) None of the above

64. The following IS NOT a derivative of the endodermal germ layer

- a) Parenchyma of the thyroid gland
- b) Parenchyma of the liver
- c) Visceral peritoneum
- d) Epithelial lining of the respiratory tract
- e) All of the above are not

65. The following are the initial components of the placental membrane EXCEPT

- a) the endothelial lining of fetal vessels
- b) the chorionic plate
- c) the cytotrophoblastic layer
- d) the syncytium
- e) All of the above are initial components of the placental membrane

66. The following are common indications for amniocentesis except

- a) Extreme multiparity
- b) Previous birth of a trisomic child
- c) Women who are carriers of X-linked recessive disorders
- d) History of neural tube defects in the family
- e) All of the above are common indications

67. The bones of the pelvic and shoulder girdles originate from the following mesenchymal cells:

- a) Paraxial mesoderm
- b) Lateral plate mesoderm
- c) Intermediate mesoderm
- d) General mesoderm
- e) Neural crest

68. Syndactyly is caused by?

- a) Failure of apoptosis
- b) Too much apoptosis
- c) Failure of AER to differentiate
- d) Incorrect rotation of limb
- e) None of the above

69. The following structures develop from the urogenital sinus EXCEPT?

- a) Urachus
- b) Urinary bladder
- c) Membranous urethra
- d) Prostatic urethra
- e) Primitive anal canal

70. The following are functions of the allantois except

- a) Nutrient transfer
- b) Contribute to the formation of the urinary bladder
- c) Is an intraembryonic source of primordial germ cells
- d) Formation of the umbilical vessels
- e) Acts as a fetal organ of excretion

71. The following are true about multiple gestation except

- a) Genetic factors contribute
- b) Dizygotic twinning is more common than monozygotic twinning
- c) Diamniotic dichorionic twins occur following separation after implantation
- d) Are associated with low fetal birth weight
- e) May result in polyhydramnios

72. Regarding the notochord the following are true except

- a) Forms part of the vertebral body
- b) Forms axis of embryo
- c) Is formed after the formation of the primitive streak
- d) Provides signals that are necessary for the formation of the CNS
- e) Notochord persistence results in chordoma formation

73. Female urethra is derived from

- a) Vesical part of urogenital sinus
- b) Phallic part of urogenital sinus
- c) Pelvic part of urogenital sinus
- d) Partial vesical and pelvic part of urogenital sinus.
- e) Partial pelvic and phallic part of urogenital sinus.

74. Primordial sex cells arise from

- a) Amniotic sac
- b) Chorionic cavity
- c) Yolk sac
- d) Allantois.
- e) None of the above.

75. The stomach is derived from:

- a) Hindgut.
- b) Midgut
- c) Midgut and hindgut
- d) Foregut
- e) Foregut and midgut.

76. Which of the following is a function of the cytoskeleton in cells?

- a) Synthesis of lipids
- b) Production of ATP
- c) DNA replication
- d) Cellular movement and support
- e) Protein translation

77. Which type of sweat gland is primarily responsible for producing a thick, odorous secretion that is often associated with emotional sweating and becomes more active during puberty?

- a) Eccrine sweat gland
- b) Apocrine sweat gland
- c) Sebaceous gland
- d) Meibomian gland
- e) Ceruminous gland

78. In connective tissue proper, which specialized cells are responsible for synthesizing and maintaining the extracellular matrix, including collagen and elastin fibers?

- a) Chondrocytes
- b) Osteocytes
- c) Fibroblasts
- d) Adipocytes
- e) Myofibroblasts

79. Which type of cartilage is primarily found in intervertebral discs, pubic symphysis, and certain tendons, and is characterized by its dense arrangement of collagen fibers, providing high tensile strength?

- a) Hyaline cartilage
- b) Fibrocartilage
- c) Elastic cartilage
- d) Articular cartilage
- e) Collagenous cartilage

80. What is the function of the canaliculi in bone tissue?

- a) To provide pathways for blood vessels
- b) To house osteoclasts
- c) To store calcium ions
- d) To facilitate communication between osteocytes
- e) To anchor tendons and ligaments

81. Within the cerebrum, which layer of the cerebral cortex is involved in receiving sensory information?

- a) Molecular layer (Layer I)
- b) External granular layer (Layer II)
- c) External pyramidal layer (Layer III)
- d) Internal granular layer (Layer IV)
- e) Multiform layer (Layer VI)

82. In the cerebellum, what is the primary role of the Purkinje cells?

- a) Transmitting sensory information to the cerebral cortex
- b) Initiating voluntary muscle movements
- c) Generating outputs from the cerebellar cortex
- d) Forming the blood-brain barrier
- e) Maintaining cerebrospinal fluid production

83. Which part of the pituitary gland is directly connected to the hypothalamus via the hypothalamic-hypophyseal tract?

- a) Adenohypophysis
- b) Pars distalis
- c) Pars intermedia
- d) Pars nervosa
- e) Pars tuberalis

84. Which type of thyroid cell produces calcitonin?

- a) Follicular cells
- b) Parafollicular (C) cells
- c) Colloid cells
- d) Adipocytes
- e) Parathyroid cells

85. Which region within the thymus is responsible for the maturation and differentiation of T lymphocytes?

- a) Medulla
- b) Cortex
- c) Capsule
- d) Trabeculae
- e) Blood vessels

86. Which type of cells, found in the respiratory epithelium, are responsible for producing surfactant?

- a) Goblet cells
- b) Ciliated cells
- c) Clara cells
- d) Alveolar type I cells
- e) Alveolar type II cells

87. Which pulmonary structure is responsible for providing mechanical support to the respiratory bronchioles and alveoli?

- a) Pleura
- b) Pulmonary capillaries
- c) Alveolar ducts
- d) Alveolar sacs
- e) Interstitium

88. Which type of cells, found within the small intestine's crypts of Lieberkühn, are responsible for producing lysozyme, an enzyme that helps protect against bacterial infection?

- a) Goblet cells
- b) Enteroendocrine cells
- c) Paneth cells
- d) M cells
- e) Enterocytes

89. In the small intestine, M cells are specialized cells found within Peyer's patches that play a crucial role in immune surveillance. What is the primary function of M cells?

- a) Nutrient absorption
- b) Hormone secretion
- c) Production of mucus
- d) Antigen sampling and transport
- e) Synthesis of digestive enzymes

90. Within the liver lobules, which specialized cells are responsible for the storage and release of glucose, as well as the synthesis of bile, detoxification, and numerous metabolic functions?

- a) Kupffer cells
- b) Endothelial cells
- c) Stellate cells
- d) Hepatocytes
- e) Sinusoidal cells

91. Which structures are found within the hepatic portal triad?

- a) Central vein, bile duct, and hepatic artery
- b) Sinusoid, bile duct, and hepatic artery
- c) Hepatic artery, central vein, and lymphatic vessel
- d) Sinusoid, central vein, and lymphatic vessel
- e) Bile duct, portal vein, and hepatic artery

92. What type of epithelial cells form the inner lining of the gallbladder, where they are responsible for absorbing water and concentrating bile?

- a) Squamous epithelial cells
- b) Columnar epithelial cells
- c) Cuboidal epithelial cells
- d) Transitional epithelial cells
- e) Stratified epithelial cells

93. The pancreas contains specialized cells that produce sodium bicarbonate. What are these cells called?

- a) Alpha cells
- b) Beta cells
- c) Centroacinar cells
- d) AP (alkaline phosphatase) cells
- e) Ductal cells

94. Within the kidney, what is the name of the specialized cells that are responsible for the production and secretion of erythropoietin?

- a) Podocytes
- b) Macula densa cells
- c) Juxtaglomerular cells
- d) Principal cells
- e) Interstitial cells

95. What type of capillaries make up the glomerulus?

- a) Continuous capillaries
- b) Fenestrated capillaries
- c) Sinusoidal capillaries
- d) Discontinuous capillaries

e) Lymphatic capillaries

96. In the seminiferous tubules of the testes, which cells are responsible for supporting and nourishing developing sperm cells?

a) Sertoli cells

b) Leydig cells

c) Germ cells

d) Myoid cells

e) Peritubular cells

97. What type of epithelium is found on the inner surface of the prepuce?

a) Stratified squamous epithelium

b) Simple squamous epithelium

c) Transitional epithelium

d) Simple columnar epithelium

e) Pseudostratified epithelium

98. What is the name of the dense connective tissues layer forming a covering of the ovary?

a) Germinal epithelium

b) Tunica albuginea

c) Cortex

d) Medulla

e) Stroma ovarii

99. What is the function of the non-ciliated peg cells also found in the fallopian tube epithelium?

a) Hormone production

b) Production of mucus

c) Phagocytosis of debris

d) Regulation of blood pressure

e) Release of neurotransmitters

100. What is the term for the specialized endometrium that contributes to the formation of the placenta?

a) Stratum basalis

b) Intermediate layer

c) Stratum parietalis

d) Decidua basalis

e) Decidua capsularis

ANSWER SHEET: MULTIPLE CHOICE QUESTIONS

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