

MOI UNIVERSITY

**FACULTY OF HEALTH SCIENCES
END OF YEAR EXAMINATION (EYE) 2000/2001
COURSE: HUMAN ANATOMY
PROGRAMME: M.B.Ch.B. YEAR OF STUDY: 2(TWO)
DATE: 10TH JULY, 2001 TIME: 9.00 A.M. - 12.00 NOON**

GENERAL INSTRUCTIONS:-

- (i) Write your University Registration Number on every piece of paper you use.
- (ii) Do not write your names on any piece of paper you use.
- iii) This paper consists of three (3) sections comprising, Section A, Section B and Section C. All to be answered in a total of three (3) hours.
- iv) Read carefully the additional instructions preceding each section.

SECTION A: (30 minutes)
 MULTIPLE CHOICE QUESTIONS
 TYPE I

INSTRUCTIONS:

- (i) EACH OF THE QUESTIONS IN THIS SECTION HAS A STEM STATEMENT FOLLOWED BY FIVE COMPLETIONS NUMBERED (a) TO (e). A GIVEN COMPLETION, WHEN ADDED TO THE STEM STATEMENT MAY PRODUCE A COMPLETE STATEMENT THAT IS TRUE (T) OR FALSE (F).
- (ii) INDICATE AGAINST THE APPROPRIATE NUMBERS IN THE ANSWER SHEETS PROVIDED WHETHER THE COMPLETE STATEMENTS ARE TRUE (T) OR FALSE (F) BY PRINTING AN X IN THE BOX IN THE COLUMN HEADED T FOR TRUE OR F FOR FALSE.

- Q1. The right mesenteric vein drains into the right renal vein. *venous drainage of abdomen* F
- Q2. The bronchi are located in the posterior mediastinum. FF
- Q3. Cervical pleura is maintained in position by the pulmonary ligament. T
- Q4. The ureter lie anterior to the renal vein at the hilum of the kidney. FF
- Q5. Barton's plexus is an important communication between the vertebral venous plexus and the prostatic plexus. *- pelvic ven + prostate* F
- Q6. Initiation of the impulse for contraction of the heart is a function of the atrioventricular node. *SA* F
- Q7. The inferior thyroid artery is a branch of the costocervical trunk.
- Q8. The pudendal nerve is an important content of Alcock's canal.
- Q9. Colle's fascia is continuous with Buck's fascia and scarpa's fascia.
- Q10. Pain from a ruptured spleen may be referred to the left shoulder.
- Q11. A rolling diaphragmatic hernia is a common hernia which is usually acquired.
- Q12. The otic ganglion is a peripheral ganglion in the course of the parasympathetic innervation of the parotid gland.
- Q13. The ligamentum arteriosum is located between the left pulmonary vein and the aorta.
- Q14. The phrenic nerves enter the chest by passing deep to the subclavian arteries.
- Q15. The supraclavicular nerve is formed by contributions from the ventral rami of cervical nerves 3 and 4.
- Q16. The pericardiophrenic artery is a branch of the internal thoracic artery.
- Q17. The pericardial sac and its contents form the middle mediastinum.
- Q18. In the males, the paramesonephric duct degenerate leaving behind small portion of the upper and lower ends. T
- Q19. The definitive thoracoabdominal diaphragm derives from three main components.
- Q20. Prevertebral fascia gives rise to the axillary sheath.
- Q21. The thoracic duct ends at the confluence of the right subclavian and brachiocephalic vein.
- Q22. The elbow joint is an example of a biaxial diarthroses.
- Q23. The aponeurosis of the transversus abdominis muscle contributes to the conjoint tendon (falx inguinalis).
- Q24. The aortic hiatus of the diaphragm is located at the level of the 4th lumbar vertebrae.

- ① Portal vein
 ② mediastinum
 ③ Barton's plexus
 ④* Thyroid gland.

5. The fourth portion of the duodenum is entirely retroperitoneal.
6. The ligamentum teres hepatis represents the obliterated remains of the umbilical vein.
7. The ischiocavernosus muscles are innervated by the genitofemoral nerve.
8. The female urethra corresponds to the prostatic and membranous portions of the male.
9. The ischioanal fossa is the space between the levator ani and the obturator internus muscle.
0. The rectouterine pouch (of Douglas) is the deepest part of the abdominal cavity between the rectum, the uterus and bladder.
1. The presence of notches on the cranial border of the spleen indicates earlier lobulation of the organ.
2. The anomalous persistence of the vitello-intestinal duct is called Meckel's diverticulum.
3. Swell bodies regulate blood flow in the nasal cavities.
4. The epithelium and endothelium of the cornea originates from the ectoderm and mesoderm respectively.
5. The innervation of the intrinsic muscles of the tongue would indicate that they develop by proliferation of hyoid arch mesoderm.
6. The vitelline venous sinuses contributes to the formation of the definitive liver.
7. The original epithelium of the trigone of the bladder is derived from the entoderm of the urogenital sinus.
8. Internal hydrocephalus in the newborn is usually found to be caused by failure of development of arachnoid granulations.
9. The otic vesicle gives rise to the vestibular part of the membranous labyrinth.
0. The central part of a classical hepatic lobule tends to be affected most in the case of poisoning.
1. The hypothalamo-hypophyseal portal system is a classical example of an arterial portal system.
2. The area postrema of the brain contains fenestrated capillaries and there is no blood neuron barrier.
3. The principal cells of the epididymis have very well developed cilia which help move spermatozoa.
4. Bilateral cryptorchidism is usually associated with sterility.
5. The right pulmonary artery is derived from fourth aortic arch and seventh intersegmental artery.
6. Failure of canalization of the solid core of cells derived from naso-optic furrow would result in a dry eye.
7. If it is necessary to ligate the femoral artery, blood is supplied to the lower limb through cruciate anastomosis.
8. The infraspinatus muscle is a medial rotator of the upper limb.
9. The keratinocytes contain the melanosome body.
0. The lens placode would develop in the absence of the optic vesicle.

SECTION B: MULTIPLE CHOICE QUESTIONS (MCQs) (30 minutes)
TYPE II

INSTRUCTIONS

- (i) EACH OF THE QUESTIONS IN THIS SECTION HAS A STEM STATEMENT FOLLOWED BY FIVE COMPLETIONS NUMBERED (a) TO (e). A GIVEN COMPLETION, WHEN ADDED TO THE STEM STATEMENT MAY PRODUCE A COMPLETE STATEMENT THAT IS TRUE (T) OR FALSE (F).
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- (iii) IF YOU DO NOT KNOW WHETHER THE COMPLETE STATEMENT IS TRUE OR FALSE, PRINT THE X IN THE COLUMN HEADED D (FOR DO NOT KNOW).
- (iv) A CORRECT RESPONSE EARNS YOU PLUS ONE MARK.

1. All the following are observed with damage to the common peroneal nerve EXCEPT:
 - (a) Footdrop
 - (b) The foot turns inward
 - (c) The patient has a loss of extensors of the foot
 - (d) The patient has a loss of extensors of the toe
 - (e) The patient cannot plantar flex the ankle

2. Dupytren's contracture is a pathological thickening and contracture of fibres of the
 - (a) Thenar fascia
 - (b) Palmar aponeurosis
 - (c) Hypothenar fascia
 - (d) Superficial transverse metacarpal (ligament)
 - (e) External abdominal aponeuroses

All the following are correct statements concerning the internal thoracic artery EXCEPT

- (a) It is a branch of the arch of the Aorta
- (b) It descends behind the subclavian artery
- (c) It divides into two terminal branches
- (d) It gives branches to the mediastinum
- (e) The musculophrenic artery is one of its terminal branches

4. Which of the following statement correctly applies to the first part of the duodenum

- (a) It is surrounded by the hepatoduodenal ligament
- (b) It is related to the caudate lobe of the liver
- (c) It is located at the level of the third lumbar vertebrae ^{3rd part R.}
- (d) The common bile duct passes ventrally
- (e) It has circular folds in its interior

5. The greater part of the pelvic diaphragm is formed from the ✓

- (a) Obturator internus muscle ✗
- (b) Pelvic floor ✓
- (c) Perineal membrane ✓
- (d) Levator ani muscle ✓
- (e) Coccygeus ✓

6. All the following statements concerning the ischioanal fossa are correct EXCEPT

- (a) They are spaces on each side of the rectal canal ✓
- (b) They are bordered laterally by the obturator internus muscle ✓
- (c) They contain the pudendal nerve and internal pudendal vessels ✓
- (d) Their inferior walls are formed by the levator ani muscle ✓ ^{→ anal}
- (e) They contain connective tissue and fat



7. The pelvic diaphragm is composed of all the following muscles EXCEPT the

- (a) Coccygeus
- (b) Iliococcygeus
- (c) Piriformis ✗
- (d) Puborectalis
- (e) Pubococcygeus

8. The posterior interventricular sulcus lodges the
- (a) Great cardiac vein
 - (b) Small cardiac vein
 - (c) Coronary sinus
 - (d) Middle cardiac vein
 - (e) Left coronary artery
9. An injury to the spinal accessory nerve primarily would affect
- (a) Adduction of the arm at the glenohumeral joint
 - (b) Lateral rotation of the arm
 - (c) Depression of the scapula
 - (d) Protraction of the scapula
 - (e) Upward rotation of the scapular
10. Symptoms of carpal tunnel syndrome may include
- (a) Loss of abduction of the thumb
 - (b) Absence of tactile sensation of the palmar surface of the index finger
 - (c) Loss of flexion at the distal interphalangeal joint of the 4th and 5th digit
 - (d) Paresthesia on the palmar surface of the middle finger
 - (e) Diminished sensation in the digits
11. Damage to which of the following nerves results in loss of opposition in the thumb
- (a) Ulnar
 - (b) Motor branch of the median
 - (c) Musculocutaneous nerve
 - (d) Radial
 - (e) Axillary
12. The lateral wall of each cavernous sinus contains all the following nerves EXCEPT the
- (a) Oculomotor
 - (b) Abducent
 - (c) Trochlear
 - (d) Ophthalmic nerves
 - (e) Maxillary nerves

3. The occipital venous sinus is located in the base of
- (a) Falx cerebelli
 - (b) Falx cerebri
 - (c) Tentorium cerebelli
 - (d) Cavernous sinus
 - (e) Diaphragma sellae
14. All the following statements concerning neuromeres are true EXCEPT that
- (a) They appear as notches in the lumen of the neural tube
 - (b) Pharyngeal arch nerve originate from every second neuromere
 - (c) The rhombencephalon contains seven of them
 - (d) They correspond to somites in the motor anterior horn of the somatomotor plate of the neural tube
 - (e) They do not exist in the diencephalon
15. Which of the following statements correctly describes the pleural cavity?
- (a) They contain much lubricating fluid
 - (b) Each pleural cavity is a closed potential space
 - (c) Visceral and parietal pleura never become continuous
 - (d) Costal pleural covers the apex of the lung
 - (e) At no point does the pleura extend below the costal margin
16. The rectum receives its blood supply primarily by the branches of the
- (a) Superior mesenteric artery
 - (b) Inferior mesenteric artery ✓
 - (c) Inferior rectal arteries
 - (d) Branches of the external iliac artery
 - (e) Femoral artery
17. All the following statements concerning the scrotum are correct EXCEPT
- (a) It is divided into two chambers by the scrotal septum
 - (b) The layers of the scrotum are the skin and the tunica dartos
 - (c) The posterior scrotal nerves arise from the pudendal nerve
 - (d) The contraction of tunica dartos may be influenced by the autonomic nervous system
 - (e) The cremaster muscle is located superficial to the tunica dartos

18. All the following locations may be used to measure pulse rate EXCEPT:
- (a) Where the radial artery crosses the distal end of the radius
 - (b) In the anatomical snuff box
 - (c) Between the tendons of the flexor carpi radialis and the abductor pollicis longus muscle
 - (d) Between the abductor pollicis longus and the extensor pollicis longus posteriorly
 - (e) Across the medial aspect of the pisiform bone
19. Which of the following statements is true of colles fracture
- (a) It occurs more frequently in men than in women
 - (b) It involves the distal end of the radius
 - (c) It causes displacement of the lunate bone
 - (d) It usually involves the styloid processes
 - (e) It is the most common type of fracture in young people
20. All the following structures may be located in the cubital fossa EXCEPT the
- (a) Tendon of biceps brachii muscle
 - (b) Triceps brachii
 - (c) Ulna nerve
 - (d) Median cubital vein
 - (e) Brachial artery
21. Which of the items is true regarding the external anatomy of the lung
- (a) The upper tapered end is its base
 - (b) The root of the lung is located at its base
 - (c) Visceral pleura covers all lung surface
 - (d) Lobes are comparable to bronchopulmonary segments
 - (e) Each lung has three lobes
22. All EXCEPT one of the following structure participates in the formation of the definitive urinary bladder
- (a) Allantois
 - (b) Ureteric bud
 - (c) Mesonephric duct
 - (d) Primitive streak mesoderm
 - (e) Definitive urogenital sinus

23. Tetralogy of Fallot is the most important cardiac malformation causing cyanosis. The key feature responsible for this cyanosis is
- (a) Hypertrophy of the right ventricle
 - (b) Pulmonary stenosis
 - (c) Patent interventricular septum
 - (d) Overriding aorta
 - (e) Dilated aorta
24. The inner ear develops by differentiation of the otic vesicle which is an invagination from
- (a) The rhombencephalon
 - (b) Surface ectoderm dorsal to the second pharyngeal cleft
 - (c) Entoderm of the first pharyngeal pouch
 - (d) Mesoderm in the region of the vestibulo cochlea ganglia
 - (e) Entoderm of the second pharyngeal pouch
25. One of your patients has a complete section of the spinal cord which has paralysed all the nerves below the fourth lumbar segmental nerve. She becomes pregnant
- (a) You anticipate to induce labour since spontaneous labour will not occur in the absence of nerve supply
 - (b) You anticipate performing a caesarian section as a denervated uterus will not contract adequately
 - (c) You warn her that the pregnancy will terminate in abortion
 - (d) You congratulate her and tell her the pregnancy is likely to be normal and childbirth painless
 - (e) Inform her that she cannot be pregnant, as implantation is under uterine nervous control
26. The ureteric bud develops as an outgrowth from the
- (a) Pronephric duct
 - (b) Mesonephric duct
 - (c) Paramesonephric duct
 - (d) Primitive cloaca
 - (e) Urogenital sinus

7. A neonate has a chest x-ray on the day after birth. You observe that the peripheral of the lungs is somewhat opaque. You diagnose

- (a) Lung collapse due to traumatic delivery
- (b) Congenital absence of surfactant
- (c) Congenital absence of peripheral alveoli
- (d) Fluid in the pleural cavity
- (e) This is normal as the peripheral alveoli do not fully expand until several days later

8. A neuro muscular spindle

- (a) Is covered by connective tissue capsule derived from the endomysium
- (b) Contain annulospiral and flowerspray afferent nerve fibres which represent stretch receptors
- (c) Contain γ -motor nerve fibres which supply the extrafusal fibres
- (d) Does not regulate the degree of contraction of a skeletal muscle
- (e) Is usually abundantly distributed in intrinsic laryngeal muscles

29. Intimal cushions found in some blood vessels are

- (a) Endothelial specialization
- (b) Aggregates of smooth muscle cells
- (c) Not found in the carotid body
- (d) Not influenced by the activity of autonomic nerves
- (e) Not responsible for regulation of blood flow in capillary beds

30. Teratogenic agents which act directly on the conceptus have been found to be most effective

- (a) At the embryonic stage
- (b) During third month
- (c) During the third trimester
- (d) During the second trimester
- (e) At the pre-implantation stage