



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

THIRD YEAR SECOND TRIMESTER EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN NURSING

COURSE CODE: NRN 122

COURSE TITLE: REGIONAL ANATOMY:

DATE: MONDAY, 8TH APRIL 2024

TIME: 3PM-6PM

INSTRUCTIONS TO CANDIDATES

All Questions Are Compulsory

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

SECTION A: MULTIPLE CHOICE QUESTIONS (60MARKS)

1. The occipital condyles articulate with which bone, allowing for the nodding motion of the head?
 - A) Temporal
 - B) Sphenoid
 - C) Atlas (C1 vertebra)
 - D) Axis (C2 vertebra)
 - E) Maxilla
2. Which bone contains the external auditory meatus?
 - A) Parietal
 - B) Maxilla
 - C) Temporal
 - D) Zygomatic
 - E) Ethmoid
3. The foramen rotundum is situated in which cranial bone?
 - A) Temporal
 - B) Sphenoid
 - C) Occipital
 - D) Ethmoid
 - E) Parietal
4. The internal acoustic meatus transmits which cranial nerve?
 - A) Facial nerve (VII)
 - B) Glossopharyngeal nerve (IX)
 - C) Vestibulocochlear nerve (VIII)
 - D) Vagus nerve (X)
 - E) Hypoglossal nerve (XII)
5. The foramen lacerum is filled with fibrous tissue in life and transmits which structure during development?
 - A) Internal carotid artery
 - B) Facial nerve (VII)
 - C) Glossopharyngeal nerve (IX)
 - D) Accessory nerve (XI)
 - E) Hypoglossal nerve (XII)
6. Which layer of the scalp contains the major blood vessels supplying the scalp?
 - A) Epidermis
 - B) Subcutaneous tissue
 - C) Galea aponeurotica
 - D) Loose areolar connective tissue
 - E) Periosteum
7. Which artery is the primary blood supply to the scalp?
 - A) External carotid artery
 - B) Facial artery
 - C) Superficial temporal artery
 - D) Occipital artery

- E) Internal carotid artery
8. What is the function of the arrector pili muscles in the scalp?
- A) To raise the eyebrows
 - B) To generate heat by contracting
 - C) To anchor hair follicles to the scalp
 - D) To facilitate scalp movement
 - E) To regulate sebum production
9. Which layer of the scalp is continuous with the periosteum of the skull bones?
- A) Epidermis
 - B) Subcutaneous tissue
 - C) Galea aponeurotica
 - D) Loose areolar connective tissue
 - E) Pericranium
10. Which muscle is not innervated by the facial nerve?
- A) Orbicularis oris
 - B) Buccinator
 - C) Frontalis
 - D) Zygomaticus major
 - E) Masseter
11. Damage to the facial nerve can result in which condition characterized by the inability to control facial muscles on one side of the face?
- A) Bell's palsy
 - B) Trigeminal neuralgia
 - C) Hemifacial spasm
 - D) Facial nerve paralysis
 - E) Glossopharyngeal neuralgia
12. The trochlea is a cartilaginous loop through which the tendon of which muscle passes?
- A) Superior rectus
 - B) Inferior rectus
 - C) Superior oblique
 - D) Inferior oblique
 - E) Medial rectus
13. Which muscle is responsible for depressing the eye (moving it downward)?
- A) Medial rectus
 - B) Lateral rectus
 - C) Superior rectus
 - D) Inferior rectus
 - E) Inferior oblique
14. Which muscle aids in intorsion of the eye (rotation towards the nose)?
- A) Superior rectus
 - B) Inferior rectus
 - C) Superior oblique
 - D) Inferior oblique

E) Medial rectus

15. The trachea bifurcates into two main bronchi at the level of which thoracic vertebra?

A) T3

B) T4

C) T5

D) T6

E) T7

16. Which structure marks the division between the superior and inferior mediastinum?

A) Aortic arch

B) Inferior vena cava

C) Trachea

D) Sternal angle (Angle of Louis)

E) Esophagus

17. The ribs articulate with the thoracic vertebrae at which anatomical structure?

A) Costal cartilage

B) Intervertebral discs

C) Costovertebral joints

D) Manubriosternal joint

E) Xiphisternal joint

18. Which artery supplies blood to the intercostal muscles and the breast?

A) Internal thoracic artery

B) Superior thoracic artery

C) Subclavian artery

D) Thoracoacromial artery

E) Lateral thoracic artery

19. The sinoatrial (SA) node is located in the:

A) Right atrium

B) Left atrium

C) Right ventricle

D) Left ventricle

E) Interatrial septum

20. The chordae tendineae are attached to the:

A) Papillary muscles

B) Aortic valve cusps

C) Tricuspid valve cusps

D) Mitral valve cusps

E) Pulmonary valve cusps

21. The coronary sinus drains blood into which chamber of the heart?

A) Right atrium

B) Left atrium

C) Right ventricle

D) Left ventricle

E) Pulmonary trunk

22. The coronary sulcus is also known as the:
- A) Anterior interventricular sulcus
 - B) Posterior interventricular sulcus
 - C) Atrioventricular sulcus
 - D) Right atrioventricular groove
 - E) Left atrioventricular groove
23. The semilunar valves prevent the backflow of blood into the:
- A) Atria
 - B) Ventricles
 - C) Aorta and pulmonary trunk
 - D) Superior and inferior vena cavae
 - E) Coronary arteries
24. The coronary sinus receives blood directly from which of the following?
- A) Left anterior descending artery
 - B) Circumflex artery
 - C) Marginal artery
 - D) Great cardiac vein
 - E) Middle cardiac vein
25. The middle cardiac vein typically accompanies which artery?
- A) Right coronary artery
 - B) Left main coronary artery
 - C) Left circumflex artery
 - D) Posterior descending artery
 - E) Marginal artery
26. The left marginal vein drains into which vessel?
- A) Coronary sinus
 - B) Great cardiac vein
 - C) Superior vena cava
 - D) Inferior vena cava
 - E) Left atrium
27. The respiratory bronchioles lead into structures known as:
- A) Alveoli
 - B) Bronchi
 - C) Alveolar ducts
 - D) Terminal bronchioles
 - E) Respiratory lobules
28. Which of the following is NOT a function of the pleurae?
- A) Facilitating lung expansion during inspiration
 - B) Reducing friction during breathing
 - C) Creating a barrier against infection
 - D) Securing the position of the lungs within the thoracic cavity
 - E) All of the above are functions of the pleurae
29. The phrenic nerve arises from which spinal nerve roots?

- A) Cervical nerve roots C3-C4
 - B) Thoracic nerve roots T1-T3
 - C) Thoracic nerve roots T4-T6
 - D) Lumbar nerve roots L1-L3
 - E) Sacral nerve roots S2-S4
30. The phrenic nerve passes through which opening in the diaphragm?
- A) Aortic hiatus
 - B) Esophageal hiatus
 - C) Inferior vena cava hiatus
 - D) Caval opening
 - E) Diaphragmatic opening
31. Where are the Brunner's glands located?
- A) Stomach
 - B) Esophagus
 - C) Duodenum
 - D) Jejunum
 - E) Ileum
32. Which part of the large intestine is characterized by the presence of taeniae coli and haustra?
- A) Cecum
 - B) Ascending colon
 - C) Transverse colon
 - D) Descending colon
 - E) Rectum
33. The function of the hepatic portal vein is to:
- A) Carry oxygenated blood to the liver
 - B) Carry nutrient-rich blood from the liver to the intestines
 - C) Carry nutrient-rich blood from the intestines to the liver
 - D) Carry deoxygenated blood from the intestines to the liver
 - E) None of the above
34. The region of the stomach that connects to the esophagus is called the:
- A) Cardia
 - B) Fundus
 - C) Body
 - D) Pylorus
 - E) None of the above
35. Which of the following is NOT a component of the mediastinum?
- A) Heart
 - B) Lungs
 - C) Thymus
 - D) Esophagus
 - E) Aorta
36. The subclavian artery becomes the axillary artery at which border of the first rib?

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

37. Which structure does NOT pass through the aortic hiatus of the diaphragm?

- A) Aorta
- B) Esophagus
- C) Inferior vena cava
- D) Thoracic duct
- E) Azygos vein

38. Which of the following structures is NOT a part of the conducting zone of the respiratory system?

- A) Trachea
- B) Bronchioles
- C) Alveoli
- D) Bronchi
- E) Larynx

39. True ribs are also known as:

- A) Vertebrosteral ribs
- B) Vertebrocostal ribs
- C) Vertebral ribs
- D) Vertebrovertebral ribs
- E) Vertebral body ribs

40. Which part of the rib articulates with the transverse process of the thoracic vertebra?

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

41. The rib with the longest shaft is typically:

- A) First rib
- B) Second rib
- C) Seventh rib
- D) Tenth rib
- E) Twelfth rib

42. Which structure runs along the inferior border of the rib and contains the intercostal vessels and nerves?

- A) Costal groove
- B) Costal cartilage
- C) Costal notch
- D) Costovertebral joint
- E) Costal angle

43. The angle of the rib is located:

- A) At the junction of the head and neck
- B) At the junction of the neck and tubercle
- C) Along the superior border of the rib
- D) At the sternal end of the rib
- E) At the inferior border of the rib

44. Which muscle is responsible for elevating the ribs during inspiration?

- A) External intercostals
- B) Internal intercostals
- C) Innermost intercostals
- D) Transversus thoracis
- E) Subcostals

45. Which muscle acts as a stabilizer of the rib cage during respiration?

- A) External intercostals
- B) Internal intercostals
- C) Subcostals
- D) Transversus thoracis
- E) Rectus abdominis

46. Which muscle runs perpendicular to the direction of the external intercostals?

- A) External oblique
- B) Internal intercostals
- C) Transversus thoracis
- D) Rectus abdominis
- E) Subcostals

47. Which muscle is primarily responsible for extension of the spine?

- A) Trapezius
- B) Rhomboid major
- C) Erector spinae
- D) Latissimus dorsi
- E) Levator scapulae

48. Which muscle is primarily responsible for retracting the scapula?

- A) Serratus anterior
- B) Rhomboid major
- C) Trapezius
- D) Levator scapulae
- E) Deltoid

49. The common carotid artery bifurcates into internal and external carotid arteries at which level of the neck?

- A) Level of the hyoid bone
- B) Level of the cricoid cartilage
- C) Level of the thyroid cartilage
- D) Level of the laryngeal prominence

E) None of the above.

50. Which muscle forms the deepest layer of the anterior abdominal wall?

- A) Rectus abdominis
- B) External oblique
- C) Transversus abdominis
- D) Internal oblique
- E) Pyramidalis

51. Which muscle lies between the internal oblique and the transversus abdominis muscles?

- A) Rectus abdominis
- B) External oblique
- C) Transversus abdominis
- D) Pyramidalis
- E) Rectus sheath

52. Which muscle runs inferomedially from the lower ribs and iliac crest to the linea alba and pubic crest?

- A) Rectus abdominis
- B) External oblique
- C) Transversus abdominis
- D) Internal oblique
- E) Rectus sheath

53. Which vessel carries oxygenated blood from the lungs to the heart?

- A) Pulmonary artery
- B) Pulmonary vein
- C) Aorta
- D) Coronary artery
- E) Brachiocephalic vein

54. Which vessel carries deoxygenated blood from the heart to the lungs in fetal circulation?

- A) Aorta
- B) Umbilical artery
- C) Pulmonary artery
- D) Pulmonary vein
- E) Ductus arteriosus

55. Which nerve innervates the anterior two-thirds of the tongue for general sensation and taste?

- A) Facial nerve (VII)
- B) Glossopharyngeal nerve (IX)
- C) Vagus nerve (X)
- D) Trigeminal nerve (V)
- E) Hypoglossal nerve (XII)

56. Which muscle of the tongue is responsible for retracting and elevating it?

- A) Genioglossus

- B) Styloglossus
- C) Hyoglossus
- D) Palatoglossus
- E) Inferior longitudinal

57. Which nerve innervates the muscles of the tongue for voluntary movement?

- A) Hypoglossal nerve (XII)
- B) Facial nerve (VII)
- C) Glossopharyngeal nerve (IX)
- D) Trigeminal nerve (V)
- E) Vagus nerve (X)

58. Which papillae are responsible for detecting bitter taste?

- A) Filiform
- B) Fungiform
- C) Foliate
- D) Vallate
- E) Circumvallate

59. Which vessel courses posterior to the root of the left lung in the superior mediastinum?

- A) Aortic arch
- B) Brachiocephalic vein
- C) Left brachiocephalic vein
- D) Pulmonary trunk
- E) Thoracic duct

60. What is the superior boundary of the posterior mediastinum?

- A) Pericardium
- B) Pleura
- C) Diaphragm
- B) Thoracic inlet
- E) Thoracic vertebrae

SECTION B. SHORT ANSWER QUESTIONS(SAQ) (20MARKS)

Attempt all the questions.

1. In a table format list the difference between the right and left lung(5marks).
2. Enumerate structures passing through porta hepatis(5marks)
3. List the difference between small and large intestine(5marks)
4. List branches of the left coronary artery(5marks)

SECTION B. LONG ANSWER QUESTION(LAQ) (20MARKS)

1. With the aid of a well labeled diagram describe the location, parts and external features of the stomach and its blood supply (20 marks)