

CANDIDATE'S ID: .....

SIGN: .....



**CENTRAL  
UNIVERSITY**

FAITH • INTEGRITY • EXCELLENCE

---

**SCHOOL OF MEDICINE & HEALTH SCIENCES  
DEPARTMENT OF PHYSICIAN ASSISTANTSHIP STUDIES**

**END-OF-SEMESTER ONE EXAMINATIONS  
MAY 2022**

*COURSE TITLE: HUMAN ANATOMY I THEORY (PHAS 123)*

**TIME ALLOWED: 150 MINUTES (2½ HOURS)**

---

**INSTRUCTIONS:**

- i. Answer all questions
- ii. Answer SECTION A on to the scantron sheet provided.
- iii. Answer SECTIONS B and C on to this question paper.

*The use of mobile phones during examination is **STRICTLY** forbidden*

**DO NOT TURN OVER THIS PAGE UNTIL YOU ARE TOLD TO DO SO  
BY THE INVIGILATOR.**

EXAMINER: DR. SAVIOUR ADJENTI

Page 1 of 16

CANDIDATE'S ID: ..... SIGN: .....

**CHOOSE THE MOST APPROPRIATE ANSWER BY SHADING THE LETTERED OPTIONS (A - E) GIVEN BELOW EACH QUESTION, ON TO THE SCANTRON SHEET.**

1. Which of the following is the most appropriate definition of anatomy as a discipline?
  - A. A dead science that deals with the study of bones of humans and to a large extent other vertebrates.
  - B. A branch of science that is basically dealing with the biology and visual art nature of the body.
  - C. A branch of science that deals with the study of living molecules and their interactions in the body.
  - D. A branch of science that deals with the study of structure, functions and inter-relationship between one structure and the other in the body.
  - E. A branch of science that deals with the study of the sick, dead and healthy human beings.
2. When a patient lies on his or her side in bed, such a position could be described anatomically as:
  - A. Recumbent position.
  - B. Supine position.
  - C. Prone position.
  - D. Ventral position.
  - E. Left or right lateral position.
3. With regard to the anatomy of the face, the eyebrow is .....to the eyeball.
  - A. Caudal.
  - B. Lateral.
  - C. Medial.
  - D. Inferior.
  - E. Superior.
4. In describing the positions of structures in the body, which of these terminologies best describes a structure found close to the midline of the body?
  - A. Medial.
  - B. Median.
  - C. Lateral.
  - D. Cranial.
  - E. Coronal.

5. An X-ray film of a young boy who was run over by a motorcycle showed that he had a mid-shaft fracture of the lateral bone of the leg. Which part of the lower limb is referred to as the leg?
  - A. Segment between the hip and thigh.
  - B. Segment between ankle joint and foot.
  - C. Segment between hip and knee joints.
  - D. Segment between knee and ankle joints.
  - E. Segment between the femur and popliteal fossa.
6. The cell membrane of the ovum is known as:
  - A. Corpus luteum.
  - B. Corona radiata.
  - C. Zona pellucida.
  - D. Zygotene membrane.
  - E. Plasma membrane.
7. At the time of implantation, the embryological structure that is buried into the endometrium of the uterus is:
  - A. Zygote.
  - B. Embryo.
  - C. Foetus.
  - D. Blastocyst.
  - E. Morula.
8. Anatomically, inheritable traits that are transferable from one offspring to the other, occurring in the form of specialized linear order of proteins in the cell are referred to as:
  - A. Chromosomes.
  - B. Genes.
  - C. DNA
  - D. Chromatin.
  - E. Chromatid.
9. Smallest cell in the body, possessing a flagellum and haploid number of chromosomes in its nucleus. The above description correctly suits which one of the following?
  - A. Ovum.
  - B. Oocyte.
  - C. Ootid.
  - D. Spermatid.
  - E. Spermatozoon.
10. With respect to the trunk, the anatomical name given to the back part of the abdomen is:
  - A. Nuchum.
  - B. Sacrum.
  - C. Colli.
  - D. Inguinal.
  - E. Lumbar.

11. The uterine tubes are normally associated with the presence of which one of the following types of epithelium?
  - A. Pseudostratified columnar ciliated.
  - B. Stratified columnar.
  - C. Simple columnar ciliated.
  - D. Stratified columnar ciliated with goblet cells.
  - E. Simple squamous.
12. A toxic drug that targets and destroys all membranous organelles in the cell is most likely to spare which one of these organelles on the account of its lack of a membrane?
  - A. Ribosomes.
  - B. Nucleus.
  - C. Mitochondria.
  - D. Golgi apparatus.
  - E. Endoplasmic reticulum.
13. Apart from the erythrocyte (red blood cell), which other components of the formed elements of blood also lacks a nucleus?
  - A. Monocyte.
  - B. Thrombocyte.
  - C. Leucocyte.
  - D. Lymphocyte.
  - E. Neutrophil.
14. Before a surgical procedure, the critical numbers of which particular formed elements of blood in a full blood count, could serve as a warning sign regarding the bloody nature of the intended procedure?
  - A. Erythrocyte.
  - B. Thrombocyte.
  - C. Basophil.
  - D. Eosinophil.
  - E. Neutrophil.
15. The nose is located on the .....side of the face.
  - A. Medial.
  - B. Lateral.
  - C. Dorsal.
  - D. Coronal.
  - E. Rostral.
16. The ability to hold a sheet of paper firmly in between the fingers is an example of which of the following types of body movement?
  - A. Surface tension.
  - B. Abduction.
  - C. Adhesion.
  - D. Adduction.
  - E. Flexion.



17. If the word *radial* is used to describe the clinical history of a large outgrowth on a particular part of the body of a patient, then it could most likely be in reference to the:
- A. Medial side of the trunk.
  - B. Lateral side of the lower limb.
  - C. Lateral side of the upper limb.
  - D. Palmar side of hand.
  - E. Medial side of the hallux.
18. For a conceptus to proceed to what is termed as *normal pregnancy*, one of the critical biological processes that must occur shortly after fertilization is:
- A. Capacitation.
  - B. Gametogenesis.
  - C. Decidualization.
  - D. Synapsing.
  - E. Cleavage division.
19. What is the anatomical name for the shallow depression found between the point of articulation between the upper limb and the trunk where the core body temperature is usually taken from in adult patients?
- A. Fossa.
  - B. Cleft.
  - C. Axilla.
  - D. Crease.
  - E. Fissure.
20. The anatomical structure that forms the gateway to the respiratory tract is:
- A. Larynx.
  - B. Pharynx.
  - C. Choana.
  - D. Nasal cavity.
  - E. Alveolus.
21. Trunk or torso of the body is made up of:
- A. Head, neck, thorax and limbs.
  - B. Cervix, thorax, pectoral and abdomen.
  - C. Thorax, abdomen, pelvis and perineum.
  - D. Thorax, peritoneum, pelvis and Inguinal.
  - E. Concha, neck, abdomen and thorax.
22. Concerning the anterior central bony pillar of the thoracic cage, the shallow depression in the median plane of its most superior limit is the:
- A. Sternal angle.
  - B. Xiphoid process.
  - C. Second Costal cartilage.
  - D. First rib.
  - E. Jugular notch.

23. On the anterolateral aspect of the chest wall (thoracic cage), which of these could serve as the surface marking for the oblique fissure of the lungs?
- A. Clavicle.
  - B. Fifth intercostal space.
  - C. Second costal cartilage.
  - D. Fourth costal cartilage.
  - E. Sixth costal cartilage.
24. In very lean, sick and emaciated patients, the bones that are easily visible and palpated on the lateral and anterior sides of the trunk are:
- A. Metacarpals.
  - B. Mandible.
  - C. Coccyx.
  - D. Ribs.
  - E. Xiphoid process.
25. In very lean, sick and emaciated patients which of the following bony features presents as palpable, worm-like appearance in the median plane posteriorly, starting from behind the back of the neck to the sacral region?
- A. Vertebral spines.
  - B. Thoracic cage.
  - C. Transverse process of vertebrae.
  - D. Tubercle of ribs.
  - E. Acromium of scapula.
26. Which of these major body cavities houses the principal organs of the respiratory and cardiovascular systems?
- A. Mediastinum.
  - B. Thoracic.
  - C. Abdominal.
  - D. Pelvic.
  - E. Cranial.
27. Those ribs that do not articulate with the sternum are known as:
- A. True ribs.
  - B. False ribs.
  - C. Floating ribs.
  - D. Typical.
  - E. Linear ribs.
28. Concerning the anatomy of the larynx, the unattached portion or free end of the epiglottis is found facing:
- A. Inferiorly.
  - B. Superiorly.
  - C. Anteriorly.
  - D. Posteriorly.
  - E. Medially.

29. When the thoracic cage in the elderly is overly compressed as in excessive antero-posterior force exertion during a cardiopulmonary resuscitation regimen, a typical rib is most likely to fracture along its:
- A. Shaft.
  - B. Head.
  - C. Groove.
  - D. Angle.
  - E. Neck.
30. The synovial (movable) joints of the thoracic cage that become effective during the process of ventilation are located:
- A. Posteriorly.
  - B. Anteriorly.
  - C. In the median plane.
  - D. Para-sternally.
  - E. Laterally.
31. For a Physician Assistant with inadequate anatomical knowledge, who is attempting to listen to the performance of the lungs posteriorly with a stethoscope, which of these bones per its location is likely to serve as an impedance to the sound waves?
- A. Sternum.
  - B. Manubrium.
  - C. Ribs.
  - D. Clavicle.
  - E. Scapula.
32. The nasal cavity communicates with the cavities of the bones surrounding the nose. Anatomically, these cavities are called:
- A. Choanae.
  - B. Paranasal sinuses.
  - C. Piriform fossa.
  - D. Valeculla.
  - E. Rima glottidis.
33. The window of communication between the nasal cavity and nasopharynx which could become blocked when the mucous membrane in the nasal cavity traps excessive dirt from the inspired air is known as:
- A. Concha.
  - B. Choana.
  - C. Nostril.
  - D. Foramen.
  - E. Carina.

34. The fine lining on the inner aspect of the chest wall is known anatomically as:
- A. Thoraco-abdominal diaphragm.
  - B. Hilum.
  - C. Parietal pleura.
  - D. Visceral pleura.
  - E. Pericardium.
35. The prominent piece of cartilage popularly referred to as Adam's apple that is palpable in front of the neck, represents which of the following anatomical structures?
- A. Trachea.
  - B. Thyroid cartilage.
  - C. Cricoid cartilage.
  - D. Epiglottis.
  - E. Soft palate.
36. The anatomical name for the potential space around the lungs is:
- A. Pleural cavity.
  - B. Mediastinum.
  - C. Pericardial cavity.
  - D. Diaphragmatic recess.
  - E. Phrenic space.
37. Where is the exact location of the apex of the lungs?
- A. In the fifth left intercostal space.
  - B. In the sternal angle.
  - C. In the hilar region.
  - D. In the paravertebral region.
  - E. In the root of the neck above the clavicle.
38. The part of the lungs which is in contact with the ribs is known as:
- A. Costal surface.
  - B. Mediastinal surface.
  - C. Diaphragmatic surface.
  - D. Pulmonary surface.
  - E. Clavicular surface.
39. What is the clinical/pathological name for the condition in which air becomes trapped between the outer surface of the lungs and fine lining found on the inner aspect of the chest wall?
- A. Emphysema.
  - B. Empyema.
  - C. Pneumothorax.
  - D. Pleural effusion.
  - E. Tonsillitis.



40. The subcostal angle which delineates thoracic cavity from the abdominal cavity on the front of the trunk is formed by:
- A. False ribs.
  - B. Cartilages of ribs 8, 9 and 10.
  - C. Cartilages of ribs 1, 2 and 3.
  - D. Cartilages of ribs 4, 5, 6 and 7.
  - E. Ribs 11 and 12.
41. The wall of the tracheobronchial tree towards the terminal end is made up of which of the following structures?
- A. Connective tissue.
  - B. Hyaline cartilage.
  - C. Elastic cartilage.
  - D. Cuboidal epithelium.
  - E. Smooth muscle.
42. With respect to the lower respiratory tract, inspired air is delivered to a lobe of the lung by which of these anatomical structures?
- A. Bronchiole.
  - B. Larynx.
  - C. Primary bronchus.
  - D. Secondary bronchus.
  - E. Tertiary bronchus.
43. Anatomically, the reason why the inferior surface of the lungs appear to be concave may be explained by the fact that this surface is directly related to:
- A. The liver.
  - B. The phrenic nerve.
  - C. The hemi-domes of the diaphragm.
  - D. The central tendon of the diaphragm.
  - E. The parietal pleura.
44. With respect to the anatomy of the heart, which of the following represents the colloquial "heart strings"?
- A. Interatrial septum.
  - B. Interventricular septum.
  - C. Musculi pectinati.
  - D. Trabeculi carneae.
  - E. Chordae tendinae.
45. Anatomically, the cusps of the outflow valves of the heart are designed to look like:
- A. The top of the hat of a Roman Catholic Pope.
  - B. Hemi-dome shaped fabric.
  - C. Three half-moon shaped structures.
  - D. An inverted cone.
  - E. Logs projecting upwards into the ventricles.

46. Structurally, the PQRST wave-like graph obtained by the estimation of the electrical activity of the heart may represent a direct or an indirect performance of which of these set of tissues?
- A. Epicardium, endocardium and sino-atrial node.
  - B. Myocardium, bundle of His and papillary muscle.
  - C. Sino-atrial node, atrio-ventricular node and bundle of His.
  - D. Papillary muscle, chordae tendinae and heart valves.
  - E. Heart valves, epicardium and Purkinje fibres.
47. Deoxygenated blood returning from all parts of the body first makes contact with which of these chambers of the heart?
- A. Left atrium.
  - B. Right atrium.
  - C. Left ventricle.
  - D. Right ventricle.
  - E. Coronary sinus.
48. Regarding the coverings of the heart, which of the following serves as the tough outermost protective cover of the heart?
- A. Fibrous pericardium.
  - B. Serious pericardium.
  - C. Parietal pericardium.
  - D. Visceral pericardium.
  - E. Epicardium.
49. When an unsterile syringe is injected into a peripheral vein, the germs carried through the bloodstream as a result are most likely to cause an inflammation to which of these layers of the heart?
- A. Myocardium.
  - B. Pericardium.
  - C. Epicardium.
  - D. Endocardium.
  - E. Mediastinum.
50. The anterior surface of the heart is largely formed by:
- A. Right and left atria.
  - B. Right and left ventricles.
  - C. Right and left auricles.
  - D. Interventricular septum and apex.
  - E. Right atrium and superior vena cava.
51. In an X-ray of the heart, the right cardiac border corresponds to which of these parts?
- A. Arch of aorta; apex and pulmonary trunk.
  - B. Inferior and superior vena cavae.
  - C. Inferior vena cava; right atrium and superior vena cava.
  - D. Apex; right atrium and pulmonary trunk.
  - E. Right auricle; pulmonary trunk and aortic knob.

52. Which of these structures appear as 'logs' on the ventricular floor of the heart giving it the characteristic roughened appearance?
- A. Papillary muscles.
  - B. Musculi pectinati.
  - C. Trabeculi carneae.
  - D. Crista terminali.
  - E. Purkinje muscles.
53. Which of these significant processes of the heart occur when the ventricular walls of the heart enter into its relaxation of phase?
- A. Oxygenated blood is pumped to the entire body.
  - B. Deoxygenated blood is pumped to the lungs.
  - C. The diaphragm flattens.
  - D. Closure of the mitral and tricuspid valves.
  - E. The heart tissues are perfused with oxygenated blood.
54. Which of the following heart structures prevent regurgitation of blood during ventricular contraction?
- A. Foramen ovale.
  - B. Fossa ovalis.
  - C. Chordae tendinae.
  - D. Intermuscular septum.
  - E. Semilunar valves.
55. With respect to the location of centromeres, the sex chromosomes (chromosome 23) may be regarded as:
- A. Acrocentric chromosome.
  - B. Metacentric chromosome.
  - C. Submetacentric chromosome.
  - D. Telocentric chromosome.
  - E. Acrobatic chromosome.
56. Which of these anatomical structures facilitates the spread of infections from the nasopharynx into the middle ear?
- A. Tonsils.
  - B. Uvula.
  - C. Epiglottis.
  - D. Pharyngotympanic tube.
  - E. Palatoglossal arch.
57. The artery which pulse could be felt near the wrist close to the bump forming the base of the thumb is known as:
- A. Subclavian artery.
  - B. Axillary artery.
  - C. Brachial artery.
  - D. Radial artery.
  - E. Ulnar artery.

58. Which of the following may be considered as the longest superficial vein of the upper limb?
- A. Subclavian vein.
  - B. Long saphenous vein.
  - C. Median cubital vein.
  - D. Basilic vein.
  - E. Cephalic vein.
59. The maternal surface of the placenta is characterized with the presence of which one of the following?
- A. Wharton's jelly.
  - B. Chorion frondosum.
  - C. Lobulations.
  - D. Velamentous tree.
  - E. Two arteries and a single vein.
60. What is the correct anatomical terminology for the *back of the hand or foot*?
- A. Pollex.
  - B. Hallux.
  - C. Palmar.
  - D. Plantar.
  - E. Dorsum.



**SECTION B: FILL IN THE GAP WITH THE MOST SUITABLE ANATOMICAL TERMS OR PHRASES. ONE MARK EACH.**

**INSTRUCTION: PROVIDE YOUR RESPONSES IN THE SPACES PROVIDED BELOW OR BY EACH STATEMENT**

61. \_\_\_\_\_ The principal clotting protein is known as:

62. \_\_\_\_\_ The anatomical name for the common passageway for both inspired air and food is:

63. \_\_\_\_\_ The anatomical/clinical name for blood clotting is:

64. \_\_\_\_\_ The type of blood cells, responsible for defending the body against foreign cells are known as:

65. \_\_\_\_\_ This type of white blood cells are regarded as the defenders against parasites.

66. \_\_\_\_\_ Type of anatomical study that physicians emphasize; the emphasis is on the topographical areas.

67. \_\_\_\_\_ A field of anatomy that emphasizes the organization of the body into different groups with a similar function.

68. \_\_\_\_\_ A group of similar cells that perform unified functions is known as this.

69. \_\_\_\_\_ This named vein becomes distended especially on the right side of the neck above the collar bone (clavicle) in individual's whose right ventricle is congested.

70. \_\_\_\_\_ This is an anatomical process that involves the burying of the blastocyst into the endometrium of the uterus.

71. \_\_\_\_\_ This layer of the heart is normally responsible for the generation of force needed for contraction.
72. \_\_\_\_\_ A plane that divides the body into two upper/superior and lower/inferior halves is known as:
73. \_\_\_\_\_ The anatomical name for the big toe is known as:
74. \_\_\_\_\_ The resultant cell from the union between male and female gametes is known as this:
75. \_\_\_\_\_ The site of maximum auscultation of the apex beat of the heart in typically developing individuals is located at:
76. \_\_\_\_\_ The name of the piece of cartilage at the most inferior tip of the breast bone (sternum).
77. \_\_\_\_\_ This named vein in the midclavicular region receives all deoxygenated blood from the entire upper limb.
78. \_\_\_\_\_ This is the anatomical name given to the fluid and solute part of blood which does NOT play a role in clotting.
79. \_\_\_\_\_ This is a type of white blood cell with a non-granular cytoplasm, unilobed nucleus which typically resembles a bean or kidney.
80. \_\_\_\_\_ These foetal cells secrete the hormone which forms the assay for the urine-based pregnancy test.

**SECTION C: CLINICAL REASONING/APPLIED ANATOMY**

**INSTRUCTION: PROVIDE YOUR RESPONSES IN THE SPACES PROVIDED BELOW OR BY EACH STATEMENT**

*Supply the correct anatomical terms or phrases that suits the following observations or scenarios:*

**CASE I**

*An X-ray film of a young boy who was run over by a motorcycle revealed that the boy had a mid-shaft fracture of the lateral bone of the leg.*

81. The lateral bone of the leg is: \_\_\_\_\_

82. The biggest, longest and strongest bone in the lower limb is known as:

\_\_\_\_\_

83. The anatomical name for the knee cap is:

\_\_\_\_\_

84. The bump (bony prominence) found on the lateral side at the junction between the leg and foot is known as:

\_\_\_\_\_

85. The name of the vein found deep to the depression found at the back of the knee is known as:

\_\_\_\_\_

**CASE II**

*A Level 200 student of the Physician Assistantship programme is a known sickle cell patient.*

86-87. What do you understand by the term **sickle cell disease**? (use your knowledge on the anatomy of blood to explain this) – 2 marks.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CANDIDATE'S ID: ..... SIGN: .....

88. Which components of the formed elements of blood is/are involved in this condition/disease (CASE II above)?

.....

89 – 90. How do these cells (formed elements) identified with this condition differ from those of normal or typically developing individuals? (2 marks)

.....

.....

.....

.....

**CASE III**

91 – 100. A 28-year old radio presenter was on a certain medication that negatively affects her oogenesis and thus interrupts her female secondary sexual cycles. List five hormones involved in the female secondary sexual cycles and for that matter her process oogenesis and match these hormones with their source or organs that secrete each of them [10 marks].

HORMONE

SOURCE

91. ....

92. ....

93. ....

94. ....

95. ....

96. ....

97. ....

98. ....

99. ....

100. ....