



*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATIONS 2021/2022**

**ACADEMIC YEAR**

**FIRST YEAR FIRST TRIMESTER**

**SUPPLEMENTARY EXAMINATION**

**FOR BACHELOR OF SCIENCE IN  
NURSING DEGREE**

**COURSE CODE: NUR 111**

**COURSE TITLE: HUMAN ANATOMY 1**

**DATE: 19/09/22**

**TIME: 9am-12pm**

**INSTRUCTIONS TO CANDIDATES**

Answer ALL Section one (1) MULTIPLE CHOICE QUESTIONS and ALL Section two (2) SHORT ANSWER QUESTIONS and any one (1) section THREE (3) LONG ANSWER QUESTION.

TIME: 3 Hours

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**PART ONE: MULTIPLE CHOICE QUESTIONS (50 MARKS)**

1. Anatomical position
  - (A). Is a term which means facing backward.
  - (B). Means the person is standing erect, with the upper limbs by the sides and the face and palms of the hands directed forward.
  - (C). A descriptive term referring to imaginary planes.
  - (D). Means the person is standing erect with upper limbs raised and palms of the hands directed backward.
2. A vertical plane passing through the center of the body, dividing it into equal right and left halves is called
  - (A). Median sagittal plane.
  - (B). Paramedian plane.
  - (C). Coronal plane.
  - (D). Horizontal plane.
3. A 30 year old man presented to a hospital with a subcutaneous mass on the anterior part of his sternum. Where is the mass located?
  - (A). The back of his chest.
  - (B). The front of his heart.
  - (C). Superior to his neck.
  - (D). The front of his chest.
4. On the hand palmar surface refers to
  - (A). Posterior side of the hand.
  - (B). The lateral side of the hand.
  - (C). Anterior side of the hand.
  - (D). The medial side of the hand.
5. Right arm and left thigh are contralateral. What does contralateral refer to?
  - (A). The same side of the body.
  - (B). Relative distance of a structure from the center of an organ or cavity.
  - (C). The relative distance of a structure from the surface of the body.
  - (D). The opposite side of the body.
6. Flexion
  - (A). Is a movement that takes place in a sagittal plane.
  - (B). It is usually a lateral movement.
  - (C). In the case of the knee joint , it is an anterior movement.
  - (D). It is not possible in the elbow joint.
7. Which of the following is not a skin appendage?
  - (A). Nail.
  - (B). Hair follicle.
  - (C). Dermis.
  - (D). Sebaceous gland.
8. Which of the following is false about skin burns?
  - (A). The depth of a burn determines the method and rate of healing.
  - (B). A partial-skin-thickness burn heals from the cells of the hair follicles, sebaceous glands and sweat glands.
  - (C). A partial-skin-thickness burn heals from the cells at the edge of the burn.
  - (D). A deep burn heals quickly with no need for grafting.
9. Concerning fasciae:
  - (A). It only consist of superficial part.
  - (B). It lies between the skin and the underlying muscles and bones.

- (C). Subcutaneous tissue is a mixture of loose areolar and adipose tissue that unites the epidermis of the skin to the underlying muscles.
- (D). In the eyelids and scrotum it has abundant adipose tissue.
10. Smooth muscle in the walls of the intestine causes peristalsis which is necessary for moving its contents distally. Which of the statements below is not true of smooth muscle?
- (A). It consists of long, spindle-shaped cells.
- (B). It is an involuntary muscle.
- (C). Its cells are closely arranged in bundles or sheets.
- (D). It is a voluntary muscle.
11. The following statements are true of joints except
- (A). A site where two or more bones come together, with movement always occurring between them.
- (B). A site where two or more bones come together, whether or not movement occurs between them.
- (C). They are classified according to the tissues that lie between the bones.
- (D). Hip joint is an example of a synovial joint.
12. Cartilaginous joints
- (A). Are also known as fibrous joints.
- (B). In primary cartilaginous joint, the bones are united by a plate or bar of hyaline cartilage.
- (C). Extension is possible at the joint between the first rib and the sternum.
- (D). Elbow joint is a good example of these joints.
13. The following diseases or conditions can affect the knee joint except
- (A). Dislocation.
- (B). Fractures.
- (C). Arthritis.
- (D). Fasciitis.
14. A 30 year old lady presented with pain around the patella of the right knee. A diagnosis of prepatellar bursitis was made. Which of the following statements is true of a bursa?
- (A). They are found within bones.
- (B). It is another name for tendon.
- (C). It is found wherever tendons rub against bones, ligaments or other tendons.
- (D). All the above.
15. Synovial sheath
- (A). Is a tubular bursa that surrounds a muscle.
- (B). It occurs where tendons pass over ligaments.
- (C). Surround joint cavities.
- (D). Is not found on the flexor tendons of fingers and toes.
16. Which of the following statements is true of arteries?
- (A). They transport blood from the heart and distribute it to the various tissues of the body.
- (B). They do have valves.
- (C). They transport blood back to the heart.
- (D). They carry deoxygenated blood except pulmonary artery.
17. Lymphatic tissue is organized into the following organs or structures except
- (A). The thymus.
- (B). The lymph nodes.
- (C). The thyroid gland.
- (D). The spleen.
18. The nervous system

- (A). Consists of the brain and spinal cord only.  
 (B). Is divided into the central nervous system and the peripheral nervous system.  
 (C). Peripheral nervous system consists of ten pairs of cranial nerves and twenty one pairs of spinal nerves.  
 (D). Somatic nervous system controls involuntary activities.
19. The following are true of autonomic nervous system except  
 (A). Concerned with the innervation of involuntary structures such as the heart.  
 (B). Does not innervate the smooth muscle.  
 (C). It is divided into the sympathetic and the parasympathetic.  
 (D). The sympathetic part prepares the body for an emergency.
20. Mucous membranes line organs or passages that communicate with the surface of the body. Which of the following statements concerning mucous membranes is false?  
 (A). Consists of a layer of epithelium supported by the lamina propria.  
 (B). Smooth muscle is sometimes present in the connective tissue.  
 (C). It may or may not secrete mucus on its surface.  
 (D). It is absent in the nasal cavity.
21. Serous membranes line the cavities of the trunk such as chest and abdomen. The statements below are true of serous membranes except  
 (A). They are reflected onto the mobile viscera lying within the cavities.  
 (B). They consists of a smooth layer of mesothelium supported by a thin layer of connective tissue.  
 (C). Parietal layer of the membrane covers the viscera.  
 (D). Serous exudate lubricates the surfaces of the membranes and allows the two layers to slide readily on each other.
22. Concerning bone which of the statements below is not true  
 (A). It is a living tissue capable of changing its structure as a result of the stresses subjected to it.  
 (B). It is a connective tissue.  
 (C). Consists of cells, fibers and matrix.  
 (D). It consists of cells and matrix only.
23. Which of the following is not a type of microscope?  
 (A). Multifocal microscope.  
 (B). Scanning electron microscope  
 (C). Light microscope.  
 (D). Transmission electron microscope.
24. The following are stages of tissue preparation for examination under the light microscope except  
 (A). Fixation.  
 (B). Emulsion.  
 (C). Dehydration.  
 (D). Staining.
25. Which of the following statements about Haematoxylin and Eosin (H &E ) is false?  
 (A). Haematoxylin is a basic dye.  
 (B). Eosin is an acidic dye.  
 (C). Eosin stains basic structures a purplish blue.  
 (D). Haematoxylin stains acidic structures blue.  
 (E). In this staining technique, the cytoplasm stains pink or red.
26. All the following are means of cell to cell communication except  
 (A). Endocrine.  
 (B). Paracrine.

- (C). Autocrine.  
(D). Facilitated diffusion.
27. The nucleus
- (A). Is the smallest organelle in the cell.
  - (B). It is a dense non-membrane-bound structure in the cell.
  - (C). Is involved mainly in energy production.
  - (D). It contains the genetic blueprint for every protein in the body.
28. Which of the following organelles is associated with rough endoplasmic reticulum?
- (A). Nucleus.
  - (B). Ribosomes.
  - (C). Mitochondria.
  - (D). Lysosomes.
29. Concerning cytoskeleton, which statement is incorrect?
- (A). It consists of microfilaments, intermediate filaments and microtubules.
  - (B). It maintains cell shape and orientation.
  - (C). It is not involved during cell division.
  - (D). It is involved in movement of organelles around the cell.
30. Which of the statements below is true of the cell cycle?
- (A). Synthesis phase (S phase) occurs during interphase.
  - (B). Mitotic phase is not part of it.
  - (C). Epithelial cells of the intestine are terminally differentiated cells.
  - (D). A neuron retains the ability to continuously divide.
31. Mitosis
- (A). Involves division of germ cells.
  - (B). Always results in grossly unequal amounts of cytoplasm in the daughter cells.
  - (C). Cytokinesis never occurs during this process.
  - (D). Only somatic cells are involved in it.
32. Concerning stem cells, the following are true except
- (A). Found in tissues with a regular turnover of cells.
  - (B). The dividing cells are relatively undifferentiated.
  - (C). It is classified as either embryonic or adult stem cells.
  - (D). Many stem cells found in adults are totipotent.
33. Which of the statements below is correct regarding prophase in mitosis?
- (A). The chromosomes first become visible within the nucleus.
  - (B). It is the third stage of mitosis.
  - (C). In this stage the nucleolus reappear.
  - (D). Chromosomes duplicate in this stage.
34. Mitosis and meiosis are both forms of cell division. Which of the following only occurs in meiosis?
- (A). Crossing over.
  - (B). Duplication of chromosomes.
  - (C). Cytokinesis.
  - (D). Apoptosis.
35. Which of the following is not a stage of mitosis?
- (A). Prophase.
  - (B). Interphase.
  - (C). Metaphase.
  - (D). Anaphase.
36. Blood consists of a variety of cells suspended in plasma, Which of the following statements concerning plasma is false?

- (A). It is 55% of blood.
  - (B). Composed of 90% water.
  - (C). Consists of 20% proteins.
  - (D). Constitute 1% inorganic salts.
37. Which of the blood type is primarily involved in the transport of oxygen and carbon dioxide?
- (A). Leucocytes.
  - (B). Thrombocytes.
  - (C). Albumin.
  - (D). Erythrocytes.
38. Leucocytes
- (A). Are concerned only with immunity.
  - (B). Act mainly inside blood vessels.
  - (C). Contain large amounts of haemoglobin.
  - (D). Constitute an important part of the defence and immune systems of the body.
39. Lack of platelets or low platelets in the blood (thrombocytopenia) results in
- (A). Thrombosis.
  - (B). A bleeding tendency.
  - (C). Thrombocytosis.
  - (D). Immune deficiency.
40. Which of the following is not a function of connective tissues?
- (A). Provides structural and metabolic support for other tissues and organs.
  - (B). Involved in oxygen transport throughout the body.
  - (C). Mediate the exchange of nutrients between tissues and the circulatory system.
  - (D). Involved in tissue repair after damage.
41. The following are types of supportive tissue except
- (A). Connective tissue proper.
  - (B). Cartilage.
  - (C). Bone.
  - (D). Epithelium.
42. Which of the following is not true of cartilage?
- (A). It provides support and attachment.
  - (B). It protects underlying tissues.
  - (C). It has a direct blood supply.
  - (D). It has chondrocytes located in lacunae.
43. Epithelium covers organs or form glands. Which of the following is not a function of epithelium?
- (A). Bind structures together.
  - (B). It provide protection as on skin.
  - (C). It has secretory function.
  - (D). Some participate in absorption as in the gastrointestinal system.
44. Regarding the structure of epithelium which of the statements below is false
- (A). Cells are in close contact.
  - (B). It is rigid.
  - (C). It is avascular.
  - (D). It is innervated.
45. Skeletal muscle is a contractile tissue with elongated cells and involved in movement. Which of the statements below concerning skeletal muscle is not true?
- (A). It is a voluntary muscle.
  - (B). Attached to and pull on bones.

- (C). It is striated.  
 (D). Consists of intercalated discs.
46. The testis  
 (A). Is the female primary sex organ.  
 (B). Secretes estrogen.  
 (C). Lies in the abdomen.  
 (D). Produces sperms and secretes testosterone hormone.
47. Which of the following is true about the ovary?  
 (A). It is the female primary sex organ and produces ova and secretes estrogen hormone.  
 (B). It consists of medulla only.  
 (C). It lies in the upper abdomen.  
 (D). Cortex consists of a vascular connective tissue.
48. Which of the statements below is not true of gametogenesis?  
 (A). It is the process of production of mature gametes( sperms and ova).  
 (B). It occurs in the testes and ovaries.  
 (C). The cytoplasm is greatly increased in the sperm.  
 (D). The cytoplasm is greatly decreased in the sperm.
49. A mature sperm  
 (A). Is formed of the head and tail only.  
 (B). Is about 60mm long.  
 (C). Its head is formed mainly of nucleolus of the spermatid.  
 (D). Its tail is concerned with motility of the sperm.
50. Regarding fertilization, which of the following statements is false  
 (A). It is the fusion of male and female gametes.  
 (B). It occurs in the uterus.  
 (C). Only one sperm fertilizes the ovum.  
 (D). Occurs in the oviduct

### **PART TWO SHORT ANSWER QUESTIONS (SAQs) (30 MARKS)**

1. Name two (2) synovial joints and list three (3) factors that stabilizes a joint (5 marks)
2. Name four (4) skin appendages and the type of epithelium found in skin.(5 marks)
3. Enumerate five (5) imaging modalities used to investigate human anatomy in clinical practice.(5 marks)
4. Draw and clearly label the cell cycle.(5 marks)
5. Outline the differences between a light microscope and an electron microscope.(5 marks)
6. Write short notes on different types of stem cells.(5 marks)

### **PART THREE: LONG ANSWER QUESTION (SAQs) (20 MARKS)**

1. Compare and contrast mitosis and meiosis.(20 marks)
2. Describe seminal fluid (semen) in regard to its nature, character, volume, number of sperms in each ejaculate; sperm motility; sperm abnormalities and factors affecting production of sperms. (20 marks).