QP CODE 202012090 Reg.No

DMI-ST. EUGENE UNIVERSITY

Zambia

DIPLOMA IN REGISTERED NURSING

End Semester Examination – DEC, 2022

Semester: II **PGY 012 – ANATOMY AND PHYSIOLOGY**

Time: 3:00 Hours **Max. Marks: 100**

Part - A (50 x 1 = 50 Marks)
Answer All the Questions

01. What is the name of a tough membrane that surrounds each bone

a) Pericardium
b) Periosteum
c) Diaphysis
d) Osteocytes

02. There are two types of bone tissue namely:

a) Red bone marrow and Yellow bone marrow
b) Articular cartilage and fibrous cartilage
c) Compact bone and spongy bone
d) Epiphysis and diaphysis

03. What is the name of a connective tissue that is tough but flexible and does not contain blood vessels

a) Cartilage
b) Capillaries
c) Endosperm
d) Cell

04. The following are types of bones **EXCEPT**

a) Long bones
b) Short bones
c) Oval shaped bones
d) Sesamoid bones

05. The following are examples of long bones **EXCEPT**

a) Arms
b) Legs
c) Wrist
d) Feet

06. The human skeleton system consist of .....

a) 207 bones
b) 203 bones
c) 206 bones
d) 95 bones

07. Compact bone is composed of cylinders or tubes of mineral crystals and protein fibers called.....

a) Lamella
b) Nerves
c) Cells
d) None of the above

08. The two types of bone marrow found in most bones are .....

a) WBC and WBC
b) Yellow bone marrow and Red bone marrow
c) Red bone marrow and white blood cells
d) Red bone marrow and white blood cells

09. What is the name given to a mature bone cell?

a) Osteoblast
b) Osteoclast
c) Osteocytes
d) Osteobone

10. Red bone marrow produces .....

a) RBC,WBC and platelets
b) RBC,WBC and blood vessels
c) RBC
d) WHB

11. Which one of the following is a function of a skeleton?

a) Storage of calcium, phosphorus, sodium and magnesium
b) For sensation
c) Transmission of impulses
d) Secretion of hormones

12. What holds the joint formed between the frontal bone and parietal bone?

a) Coronal suture
b) Frontal suture
c) Sagittal suture
d) Lambdoidal suture

13. What consists the Axial skeleton

a) Skull, sternum and scapula
b) Vertebral column, cranium and sternum(and the ribs)
c) Skull, vertebral column and sternum(and the ribs)
d) Scapula, skull and vertebral column

14. The following are bones of the skeleton of the face **EXCEPT**

a) Zygomatic bones
b) Maxilla bone
c) Lacrimal bone
d) Occipital bone

15. Name the two major divisions of the skeleton

a) Axial and skull
b) Axial and vertebral column
c) Appendicular and Axial

d) Appendicular and thoracic cage

16. Which one of the following is the only movable bone of the skull

a) Palatine bone
b) Mandible bone
c) Zygomatic bone
d) Maxilla bone

17. Which one of the following blood groups is considered as universal donor?

a) O
b) A
c) B
d) AB

18. The thickening and hardening of arteries is called

a) Arteriosclerosis
b) Infarction
c) Arthritis
d) Calcification

19. Which one of the following is a function of the seminal vesicles of the male reproductive system?

a) Secrets an alkaline fluid that nourishes the sperms
b) Secrets a lubricant
c) Secret testosterone
d) None of the above

20 ..... is the shedding of the endometrium which occurs once a month

a) Ovulation
b) Menstruation
c) Fertilization
d) Conception.

21. The anterior pituitary gland secrets the hormone ..... which initiates the development of follicles in the ovary.

a) Oestrogen
b) Progesterone
c) Follicle stimulating hormone
d) Luteinizing hormone

22. The left lung is divided into .....

a) 2 Lobes
b) 3 Lobes
c) Lobules
d) 3 Lobules.

23. Measure of stretchabilty of the lungs is known as .....

a) Compliance
b) Airway resistance
c) Elasticity
d) Vita capacity

24. The amount of air inspired during normal, relaxed breathing is called .....

a) Inspiratory reserve volume
b) Residual volume
c) Vital capacity
d) Functional residual capacity

25. The respiratory centre is present in the .....

a) Cerebellum
b) Cerebrum
c) Hypothalamus
d) Medulla oblongata

26. Which of the following statements is true about pulmonary circulation?

a) Blood in the pulmonary circulation need to be pumped far as compared to systemic circulation.

b) Pulmonary arteries have smaller diameters, thinner walls and less elastic tissue.

c) Resistance to pulmonary blood flow is high

d) Pulmonary arteries have larger diameters, thinner walls and less elastic tissue.

27. Divisions of the aorta are:

a) Ascending aorta, arch of the aorta, descending aorta and abdominal aorta.

b) Ascending aorta, arch of the aorta, thoracic aorta and the abdominal aorta

c) Ascending aorta, descending aorta, thoracic aorta and abdominal aorta

d) Ascending aorta, thoracic aorta, descending aorta and abdominal aorta.

28. The three systemic veins that return deoxygenated blood to the heart are:

a) Superior vena cava, Inferior vena cava and the thoracic vein

b) Superior vena, Inferior vena cava and the Cephalic vein

c) Superior vena cava, Inferior vena cava Coronary vein

d) Superior vena cava, Inferior vena cava and the Coronary sinus

29. The veins of the hepatic portal circulation draining the digestive organs, spleen, and pancreas deliver blood to the liver via the:

a) hepatic portal vein.

b) Hepatic vein

c) Splenic vein

d) Mesenteric vein

30. Which vein contributes the greater volume of blood & most of the nutrients to the liver?

a) Hepatic Portal vein

b) Splenic vein

c) Superior mesenteric vein

d) Inferior mesenteric vein

31. Sequence of pulmonary circulation is:

a) Pulmonary veins, lungs then pulmonary arteries

b) Pulmonary artery, pulmonary veins then heart

c) Lungs, pulmonary artery, pulmonary veins then heart

d) Pulmonary trunk, pulmonary arteries, lungs then pulmonary veins

32. The following are functions of the Lymphatic system except:

a) Drain excess interstitial fluid
b) Transporting dietary lipids
c) Carrying out immune responses
d) Digestive functions

33. Lymph formed in the digestive system is called

a) Chyle
b) Lacteal
c) Villi
d) Interstitial fluid

34. Formation of Interstitial fluid takes place;

a) At the arterial end of capillaries .

b) In the venules

c) In the lymphatic capillaries

d) In the GIT

35. The two Primary Lymphatic Organs are:

a) Lymph nodes and Spleena

b) Thymus and lymph nodes

c) Thymus and bone marrow

d) Bone marrow and Tonsils

36. The largest bone of the face

a) The maxilla
b) Mandible
c) Sphenoid bone

d) The facial

37. Which of the following bones houses the pituitary

a) Mandible
b) Sphenoid
c) Ethmoid
d) Nasal

38.The only movable bone of the facial skeleton is the

a) Maxilla
b) Parietal
c) Zygomatic
d) Mandible

39. Ribosomes are the small organelles where .....occurs

a) Protein synthesis
b) Transportation of molecules out of the cell
c) Cellular respiration
d) Chromosomes formation

40. The cell cycle has two major phases namely interphase and .....

a) Prophase
b) Mitotic
c) G1 phase
d) Meiosis

41. The endocrine system acts together with the .....to coordinate the body's activities.

a) The gastrointestinal tract
b) The nervous system
c) The urinary system
d) The integumentary system

42. A..... is a biochemical secreted by one cell that affects a specific target cell with appropriate cell surface receptors.

a) Stem cell

b) Hormone
c) Fibroblast
d) Lipocyte

43. The Vagus nerve is cranial nerve number .....

a) One
b) Six
c) Two
d) Ten

44. Which of the following is the large bone found superior to the patellar and inferior to the ischium

a) Calcaneus
b) Femur
c) Syphysis pubis
d) Tibia

45. ATP production primarily occurs in which one of the following organells

a) Nucleus
b) Endoplasmic reticulum
c) Microvilli
d) Mitochondria

46. The skeletal muscle cells are also known as striated muscles because:

a) Their contraction is under conscious control
b) They contain several nuclei situated just under the sarcolemma
c) Alternating light and dark bands
d) Their contraction is under conscious control

47. There are two types of alveolar ..... which are type I and type II

a) Tissues
b) Spaces
c) Cells
d) None of the above

48. The acronyms **ATP** stands for.....

a) Adenosin Tryphosphate.
b) Adenosine triphosphate.
c) Adensinin trysulphite
d) Adensity triphosphide.

49. ..... cells help in the coagulation of blood

a) Leukocytes
b) Erythrocytes
c) Thrombocytes
d) Lymphocytes

50. The ..... are the only organs directly connected to both chambers of the heart.

a) Lungs
b) Liver
c) Kidneys
d) Uterus

Part - B (20 x 1 = 20 Marks)
Answer All the Questions

MATCHING ITEMS

MATCH THE ORGANS IN COLUMN I WITH THE CORRESPONDING EPITHELIAL TISSUES THAT LINE THEM IN COLUMN II

COLUMN I	COLUMN II
51. Kidneys	A. Endometrium
52. Blood vessels	B. Mesothelium
53. Uterus	C. Non keratinized
54. Mouth.....	D. Endothelium
55. Fallopian tubes.....	E. Urothelium
	F. Pseudo-ciliated epithelium
	G. Keratinized epithelium

MATCH THE TYPE OF THE BLOOD CELLS IN COLUMN I WITH THEIR RESPONSE TO REACTION IN COLUMN II

COLUMN I

56. Neutrophils .....

57. Monocytes .....

58. Lymphocytes .....

59. Basophils .....

60. Eosinophils .....

COLUMN II

A. Histamine Source (E.G Heparin).

B. Phagocytic Macrophages

C. Parasitic Infections

D. Acute Inflammation

E. Viral Infections (Immune Response)

F. Diarrhoeas

G. Aseptic shock

MATCH THE SECTION OF LARGE INTESTINE IN COLUMN I WITH THE CORRECT DESCRIPTION IN COLUMN II

COLUMN I

61. Descending colon.....
62. Transverse colon .....
63. Ascending colon .....
64. Sigmoid colon .....
65. Caecum .....

COLUMN II

A. Movable last portion of the descending colon
B. Vermiform appendix
C. Pass down ward in the left lumber region
D. Has ileocecal valve
E. Pass across the abdominal cavity
F. It forms the hepatic flexure
G. It is about 13 cm long

MATCH THE FOLLOWING CELLS OF THE GIT IN COLUMN I WITH THEIR SECRETIONS N COLUMN II

COLUMN I

66. Goblet cells .....
67. Parietal cells .....
68. Principal cells.....
69. Argentaffin cells .....
70. Endocrine cells .....

COLUMN II

A. Serotonin, histamine
B. The hormone gastrin
C. Pepsinogen
D. Protective mucous.
E. Hydrochloric acid
G. Cholecystokinin
F. Bile

Part – C (30 x 1 = 30Marks)

Answer All the Questions

71. .....bones are cube-shaped and nearly equal in length and width

72. Cranial bones, sternum, ribs and scapulae are examples of.....bones

73. The cells that make up cartilage are scattered in a network of fibers composed of an elastic protein called.....

74. .....is the process of bone formation

75.....is the upper most section of the sternum and articulates with the clavicles at the sternoclavicular joints and with the first two pairs of ribs

76. .....protects the thoracic organs such as the heart, lungs and large blood vessels

77. The.....suture forms a junction between the two parietal bones

78..... is the second (2^{nd}) cervical vertebral

79.....found only in bacteria, typically have a cell wall outside the plasma lemma, and lack a nuclear envelope.

80. The outer most component separating cytoplasm from extracellular environment is.....

81. Cytoplasm is composed of.....

82.....is composed of a phospholipid bilayer, cholesterol, proteins, and chains of oligosaccharides covalently linked to phospholipids and protein molecules.

83. Each phospholipid molecule of the lipid bilayer is composed of a ..... located at the surface of the membrane, and.....

84. Because the phospholipid molecule is composed of a hydrophilic head and a hydrophobic tail, the molecule is said to be.....

85.....are metabolically active structures that may be membranous or non-membranous protein complexes.

86..... And.....motile processes, covered by cell membrane, with a highly organized microtubule core.

87.The reference position used to describe the location of anatomical parts and to describe and explain human movement is called.....

88.The..... is an imaginary vertical line that divides the body into equal left and right sides.

89.....are imaginary flat surfaces that are used to divide the body or organs into definite areas.

90.....are flat surfaces resulting from cuts through body structures.

91.The nose is lined by highly vasculrised ciliated epithelium cells called .....

92. ..... is the mechanism in which oxygen is exchange with carbon dioxide.

93.The other layer of Schwann cell plasma membrane is called .....

94.The ..... is the mechanical pump that propels the blood.

95.The system which secrete secretions child pour them into the blood stream is called .....

96. Small intestines Leal from the stomach to the large intestine and is about 6 to 7metres long.

97.The difference between diastolic and systolic blood pressure is known as .....

98.The pituitary gland lies in a small depression in the sphenoid bone known as .....

99..... is the first and shortest part of the small intestine.

100 ..... are the fine projections in the acumen of the small intestine, increasing the surface area.

Part - D (100 x 2= 200Marks)
Answer only two Questions

THERE ARE THREE(3)QUESTIONS IN SECTION D.ANSWER TWO (2)QUESTIONS ONLY.QUESTON NUMBER(1) IS COMPULSORY.EACH QUESTION CARRIES 100 MARKS

101.

(a) Draw a well labelled diagram of the respiratory system showing in details structures of the right lung (20 Marks).

(b) Explain the mechanism of breathing (20 Marks).

(c) Outline 5 functions of the larynx (10 Marks).

(d) Explain five functions of the pharynx (30 Marks).

(e) Explain the following processes

i. External respiration (10 Marks).

ii. Internal respiration (10 Marks).

102.

a) Draw a well labeled diagram of a typical synovial joint (10 Marks).

b) State the four (4) structural characteristics of synovial joints (10 Marks)..

c) Explain the process of bone formation (20 Marks).

d) Describe the following terms

a. Axial skeleton (10 Marks).

b. Appendicular skeleton (10 Marks).

e) Outline five (5) classifications of bones (20 Marks).

a. Mention five functions of bones (10 Marks).

f) Draw a well labelled diagram of the femur (10 Marks).

103.

a) Draw a well labeled diagram of a nerve cell (10 Marks).
b) List five characteristics of the nerve cell (10 Marks).
c) Describe two types of neurons (10 Marks).
d) Describe other four cells found in the nervous system and state their functions (40 Marks).
e) Draw a well labeled the diagram of the brain showing the flow of CSF (20 Marks).
f) List five functions of the nervous system (10 Marks).