



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICAL
LABORATORY SCIENCES

AML 4240: HUMAN PHYSIOLOGY II

SPECIAL/SUPPLEMENTARY EXAMINATION

FEBRUARY 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **TWO** sections **A** and **B**

Section A –Contains MCQS, any wrong response will be penalised. Answer **ALL** questions in **Section B**.

SECTION A – MCQs – (30marks)

1. The following are components of pancreatic juice, except?
 - a) Amylase
 - b) Chymotrypsinogen
 - c) Mineral salts
 - d) Cholesterol

2. The sinus rhythm fires at the rate of
 - a) 40-50bpm
 - b) 20 – 40 6pm
 - c) 70-80bpm
 - d) 10 – 20 bpm

3. Which of the following is extracellular cation
 - a) Sodium
 - b) Chloride
 - c) Potassium
 - d) Zinc

4. The following substances is secreted by the stomach D-cells when the pH mucosa falls below 3
 - a) Bradykinin
 - b) Enterochromaffin like cells
 - c) Somatostatin
 - d) Bombesin

5. Ductular cells are responsible for production of
 - a) Amylase
 - b) Lipase
 - c) Sodium hydrogen carbonate
 - d) Potassium bicarbonate

6. The major work horse cells of the pancreases are
 - a) Acinar cells
 - b) Parietal cells
 - c) Islets of langerhans
 - d) None of the above

7. The following are major physical prospectus that affect lung function except
- a) Tensile strength
 - b) Surface tension
 - c) Compliance
 - d) Elasticity
8. The following are types of cells that form the bone tissue except
- a) Osteocytes
 - b) Osteoblasts
 - c) Chondroblasts
 - d) Osteoclasts
9. The most abundant human tissue in the body is
- a) Nerve
 - b) Muscle
 - c) Epithelial
 - d) Connective
10. The organelle responsible for manufacture of enzymes and protein synthesis is
- a) Mitochondria
 - b) Endoplasmic reticulum
 - c) Ribosomes
 - d) Lysosomes
11. The following are important for blood glucose control except?
- a) Growth hormone
 - b) Insulin
 - c) Glucagon
 - d) Glycogen

12. The cerebrospinal fluid CSF circulates in the following areas
- a) Subdural space
 - b) Subarachnoid space
 - c) Choroid pleas
 - d) Fourth ventricles
13. Which of the following statements is true about cerebral spinal fluid (CSF)
- a) It is slightly acidic
 - b) It is secreted continuously at the rate of 0.5ml per minute
 - c) It is straw colored
 - d) It contains small amounts of albumin and globulins
14. Mast cells are important in production of the following substances except
- a) Heparin
 - b) Histamine
 - c) Intrinsic factor
 - d) Serotonin
15. The heart muscle is made up of the following layers except
- a) Myocardium
 - b) Myometrium
 - c) Endocardium
 - d) Epicardium
16. Neutrophil count in the blood is elevated in the following states
- a) Tissue damage
 - b) Leukemia
 - c) Microbial infection
 - d) Viral infections

17. The following are likely pacemaker sites for cardiac conduction

- a) SAN node
- b) AV node
- c) Purkinje fibres
- d) Pappas nodes

18. Which of the following is a permanent cell of the central nervous system

- a) Ependymal cells
- b) Oligodendrocytes
- c) Nerve cells
- d) Astrocytes

19. Intercalated discs possess the following

- a) Gap junctions
- b) G-protein
- c) Tight junctions
- d) Zona adherens

20. The following factor affect membrane transport

- a) Size of particles
- b) Pressure of ions
- c) Capillary action
- d) Pressure of channels

21. Myelin sheath is secreted by the following cells

- a) Satellite cells
- b) Osteocytes
- c) Oligodendrocytes
- d) Glial cells

22. Plasma oncotic pressure is as a result of

- a) Albumin
- b) Bilirubin
- c) Plasma cells
- d) Antibodies

23. The stomach protects itself against autolysis through

- a) Production of mucosa coat
- b) Production of inactive enzyme (zymogens)
- c) Resistance of the enterocytes to acid
- d) None of the above

24. The following factors affect the heart rate except

- a) Gender
- b) Age
- c) Body mass
- d) Food

SECTION B – (40marks) Answer ALL questions

1. Breathing is mainly controlled at the level of the brainstem. Describe the main respiratory control centres. **(20marks)**
2. a. Discuss how the Renin-Angiotensin – Aldosterone system functions to restore low blood volume and blood pressure. **(10marks)**
b. Describe the physiology of hearing: **(10marks)**