



*(University of Choice)*

**UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR  
FIRST YEAR, SECOND TRIMESTER EXAMINATIONS  
FOR THE DIPLOMA  
OF**

**DIPLOMA OF MEDICAL BIOTECHNOLOGY/LABORATORY SCIENCES  
COURSE CODE: BMD 124  
COURSE TITLE: GENERAL PHYSIOLOGY  
MAIN EXAMINATION**

**DATE: 30<sup>TH</sup> MAY 2019**

**TIME: 3.00 - 5.00 PM**

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**INSTRUCTIONS TO CANDIDATES**

This paper is divided into three sections; **A**, **B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**).  
**ANSWER ALL QUESTIONS.**

**TIME: 2 HOURS**

MMUST observes **ZERO** tolerance to examination cheating

This Paper Consists of 5 Printed Pages. Please Turn Over.

### SECTION A.

1. Which one of the following **is not** a neurotransmitter?
  - A. GABA
  - B. Acetylcholine
  - C. Sodium
  - D. Histamine
  
2. One of the following is **not** a cell organelle
  - A. Secretory Vesicles
  - B. Peroxisomes
  - C. nuclear membrane
  - D. Golgi Apparatus
  
3. **Not** a component of the heart conduction system
  - A. Sinoatrial node
  - B. Atrioventricular node
  - C. Bundle branches
  - D. Mitral valve
  
4. Which of the following **is not** an ECG wave?
  - A. P wave
  - B. S wave
  - C. V wave
  - D. T wave
  
5. **True** about double circulation
  - A. Blood passes once through the heart during one complete cycle
  - B. Blood passes twice through the heart during one complete cycle
  - C. Blood passes twice through the lungs during one complete cycle
  - D. Blood passes once through the lungs during one complete cycle
  
6. **True** concerning pulmonary circulation
  - A. Deoxygenated blood is pumped from right ventricle into the lungs through pulmonary arteries
  - B. Deoxygenated blood is pumped from left ventricle into the lungs through pulmonary arteries
  - C. Oxygenated blood is pumped from right ventricle into the lungs through pulmonary arteries
  - D. Deoxygenated blood is pumped from right ventricle into the lungs through pulmonary vein

7. Which of the following **is not** an erythropoietic organ?
- A. Liver
  - B. Yolk sac
  - C. Bone marrow
  - D. Kidney
8. All of the following **are true** about the heart except
- A. SA node is located in the left atria
  - B. SA node is located in the right ventricle
  - C. SA node is located in the right atria
  - D. SA node is located in the left ventricle
9. One of the following is an agranulocyte?
- A. Neutrophil
  - B. Lymphocyte
  - C. Basophil
  - D. Eosinophil
10. **TRUE** about positive feedback mechanism
- A. Childbirth is not an instance in which positive feedback plays a role
  - B. End product of the process reduces the original stimulus
  - C. The output enhances the effect of the stimulus.
  - D. All of the above
11. Which One of the following is part of the central nervous system?
- A. Peripheral nerves
  - B. Spinal cord
  - C. Sympathetic nervous system
  - D. parasympathetic nervous system
12. All of the following are parts of the cell membrane **except**?
- A. Lipid bilayer
  - B. Integral proteins
  - C. Peripheral proteins
  - D. Nucleoplasm
13. Which one **is true** about tidal volume?
- A. is the extra volume of air that can be inspired
  - B. is the maximum extra volume of air that can be expired by forceful expiration

- C. is the volume of air inspired or expired with each normal breath
- D. is the volume of air remaining in the lungs after the most forceful expiration

14. All of the following are parts of a nerve cell **except**?

- A. Axon
- B. Cell body
- C. Dendrites
- D. Ganglia

15. Which of the following statements **is true**?

- A. Pulmonary artery has no valve
- B. Pulmonary vein has a valve
- C. Pulmonary vein carries deoxygenated blood
- D. Pulmonary artery carries oxygenated blood

16. Which one of the following **is true** about voltage gated channel?

- A. responds to the chemical signal across the cell membrane
- B. responds to the electrical potential across the cell membrane
- C. also called ligand gated channel
- D. acetyl choline channel is an example

17. Which one of the following organs **is** the maturation site of lymphocytes?

- A. Bone marrow
- B. Spleen
- C. Thymus
- D. Lymph nodes

18. Hemoglobin is made up of?

- A. Two alpha and one beta chains
- B. Two alpha and two beta chains
- C. One alpha and two beta chains
- D. One alpha and one beta chains

19. Which one of the following is **not true** about extracellular fluid?

- A. The extracellular fluid contains large amounts of sodium ions than intracellular fluid
- B. The extracellular fluid contains large amounts of potassium ions than intracellular fluid
- C. The extracellular fluid is also called the internal environment of the body
- D. The extracellular fluid contains large amounts of chloride ions than intracellular fluid

20. Which one of the following **is** part of the respiratory system?

- A. Trachea
- B. Lungs

- C. Alveoli
- D. All of the above

### **SECTION B.**

1. a) Describe the process of phagocytosis? (5mks)  
b) Describe the events of the QRS complex on an ECG? (5mks)
2. a) Define homeostasis? (2mks)  
b) State the four components of the negative feedback mechanism giving one example in each case. (8mks)
3. Describe the structure and function of the skin? (10mks)
4. Describe the functional and morphological characteristics of the following leucocytes (10mks)
  - I. Neutrophils
  - II. Eosinophils
  - III. Basophils

### **SECTION C**

1. a) Name the vitamin k depended factors (4mks)  
b) Using a diagram describe the intrinsic, extrinsic and common pathway of coagulation cascade (16mks)
2. Differentiate between central and peripheral nervous system? (4mks)  
Describe various components of a nerve cell (16mks)

