



(University of Choice)

**MASINDEMULIROUNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)
MAIN CAMPUS
UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR
MAIN EXAM
FIRST YEAR SECOND SEMESTER EXAMINATIONS
FOR
DIPLOMA OF MEDICAL BIOTECHNOLOGY**

COURSE CODE BBD 124

COURSE TITLE: GENERAL PHYSIOLOGY

DATE: 20/04/2022

TIME: 12.00 – 2.00 PM

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.
- Write your answers on the provided university examination booklet.

TIME: 2 Hours

1. What is Human Physiology?

- a) Human physiology is the scientific study of the mind and behavior
- b) Human physiology is the study of the internal and external structures of the human body
- c) Human physiology is the study of the functions of body parts
- d) Human physiology is the study of microscopic organisms

2. Which of the following type of cartilage is present at the joints of long bones in humans?

- a) Fibrous
- b) Hyaline
- c) Elastic
- d) Calcified

3. Which of the following structures keep blood flowing unidirectionally in humans?

- a) Bronchiole
- b) Neuron
- c) Septum
- d) Valves

4. Which of the following is the structural and functional unit of the human nervous system?

- a) Brain
- b) Axon
- c) Dendron
- d) Neuron

5. Which of the following part of the human brain has a center for controlling breathing?

- a) Medulla oblongata
- b) Diencephalon
- c) Cerebrum
- d) Cerebellum

6. What is a human heart made up of?

- a) Tissues
- b) Muscle
- c) Skin
- d) Bone

7. Which of the following is the largest gland in human body?

- a) Thymus
- b) Kidneys
- c) Liver
- d) Pancreases

8. The normal blood pressure of an adult is _____

- a) 100/80 mm Hg
- b) 100/60 mm Hg
- c) 120/80 mm Hg
- d) 80/120 mm Hg

9. The brain area that most directly controls the activity of the autonomic nervous system is the _____

- a) Pituitary gland
- b) Medulla oblongata
- c) Cerebellum
- d) Hypothalamus

10. The normal pacemaker of the heart is located in the

- A. Sino atrial node
- B. Purkinje fibers
- C. Atrioventricular Node
- D. Walls of the left ventricles

11. Which of the following is released by Parasympathetic nervous system?

- a) Serotonin
- b) Acetylcholine
- c) Epinephrine

- d) Nor epinephrine
12. Blood is stained with _____ stain.
- a) Methylene blue
 b) Safranin
 c) Leishman stain
 d) Carbol fuchsin
13. The aorta distributes _____ type blood.
- a) Oxygenated blood
 b) Deoxygenated blood
 c) Mixed blood
 d) Cannot be determined
14. The brain and spinal cord together make up _____
- a) CNS
 b) ANS
 c) PNS
 d) Reflex actions
15. Reflex action is controlled by _____
- a) Spinal cord
 b) ANS
 c) PNS
 d) Sympathetic nervous system
16. Homeostasis

- A refers to the unwavering control of a physiological setpoint.
 B refers to maintaining a stable internal environment.
 C refers to maintaining a stable external environment.
 D B and c

17. Blood flows from the right atrium into the right ventricle via

- A the mitral valve
 B the semilunar valves
 C the tricuspid valve
 D the AV node

18. Most cell membranes are composed principally of

- A DNA and ATP
 B proteins and lipids
 C chitin and starch
 D nucleotides and amino acids

19. The aortic valve

- A prevents the backflow of blood into the aorta during ventricular diastole
 B prevents the backflow of blood into the left ventricle during ventricular diastole
 C prevents the backflow of blood into the left ventricle during ventricular systole
 D prevents the backflow of blood into the aorta during ventricular systole

20. Blood flows from the right ventricle of the heart into which of the following structures?

- (A) Inferior vena cava
 (B) Left ventricle
 (C) Pulmonary arteries
 (D) Pulmonary veins

SECTION B (40MKS)

1 Using a well labeled diagram, discuss the sigmoid oxygen dissociation curve (8 MKS)

2. Discuss eight differences of veins and arteries (8MKS)

3. Describe the following and give an example of each

(a) Positive feedback mechanism

(b) Negative feedback mechanism

4. Explain the following and how it regulates temperature

(a). Thermoregulation(4mks)

(b) Osmoregulation (4mks)

5 (a). Define the following

(i) Motor neuron (2mks)

(ii) Sensory neuron (2mks)

(iii) Interneurons (2mks)

(b) State the function of nervous system (4mks)

SECTION C (60MKS)

1. Discuss intrinsic and extrinsic pathways of blood coagulation (20mks)

2. Discuss the difference and similarities between PNS and ANS (20mks)

3. Discuss the skin and how it regulates temperature (20mks)