



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

MAIN EXAM

2021 / 2022 ACADEMIC YEAR

**SECOND YEAR SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN HUMAN NUTRITION AND
DIETETICS**

COURSE CODE: DND 073

COURSE TITLE: HUMAN ANATOMY AND PHYSIOLOGY

DATE: 20/4/2022

TIME: 8:00-10:00 AM

INSTRUCTIONS TO CANDIDATES:

Answer all questions in Section A and Section B

Answer ANY TWO questions in Section C

Read additional instructions under each section

MMUST observes ZERO tolerance to examination cheating

Paper Consists of 4 Printed Pages. Please Turn Over.



SECTION A: This section consists of TEN Multiple Choice Questions (MCQs) of One Mark each. Answer all questions in this section. (Total = 10 Marks)

1. Which of the following holds the walls of the trachea open?
 - A. Nerve impulses
 - B. Rings of cartilage
 - C. Fine bones
 - D. Smooth muscle contractions
2. The mitral valve of the heart is located between the _____ and _____
 - A. Right atrium and right ventricle
 - B. Left ventricle and the aorta
 - C. Right ventricle and the pulmonary trunk
 - D. Left atrium and left ventricle
3. What feature of the small intestine enhances its ability to absorb digested food?
 - A. Its large surface area
 - B. The gaps between adjacent epithelial cells
 - C. Secretion of the hormone absorption
 - D. Its longer length compared to the large intestine
4. Which of the following refers to the tissue level of structural organization?
 - A. Atoms, ions, molecules and electrolytes
 - B. Mitochondria, ribosomes, nucleus, endoplasmic reticulum
 - C. Nephron, alveolus, villus, lobule
 - D. Muscle, nervous, connective, epithelial
5. Which of the following is **NOT** a component of the cell plasma membrane?
 - A. Cholesterol
 - B. Proteins
 - C. Microfilaments
 - D. Phospholipids
6. The human body's ability to maintain a relatively constant internal temperature is called?
 - A. Respiratory heat loss
 - B. Homeostasis
 - C. Vasodilation and evaporative heat loss
 - D. Positive feedback

7. In the glomerulus, what is the method by which solutes are transferred from the blood to the Bowman's capsule?
 - A. Diffusion
 - B. Active transport
 - C. Secretion
 - D. Filtration
8. What name is given to the cells in the nervous system that produce nerve impulses?
 - A. Neurotransmitters
 - B. Nerves
 - C. Neurons
 - D. Neuroglia
9. Where are sperms produced in the male reproductive tract?
 - A. Seminiferous tubules.
 - B. Epididymis.
 - C. Sertoli cells of the testes.
 - D. Leydig cells of the testes.
10. The major role of mitochondria is to _____
 - A. Synthesise fatty acids, phospholipids & steroids.
 - B. Deliver lipids and proteins to plasma membrane for secretion.
 - C. Synthesise proteins from amino acids.
 - D. Produce energy in the form of ATP.

SECTION B: This section consists of FIVE Short Answer Questions of Six Marks each.

Answer all questions (Total = 30 Marks)

11. a. Define the term tissue as used in human anatomy and physiology. (2 Marks)
b. State the functions of the **FOUR** major tissues found in the human body. (4 Marks)
12. State any **SIX** changes in the human respiratory system during inhalation. (6 marks)
13. Draw a well-labelled diagram of the female reproductive system. (6 marks)
14. Describe the process of nutrient absorption by active transport. (6 marks)
15. Explain how the lungs of human beings are adapted to their function? (6 marks)

SECTION C: This section consists of THREE Long Answer Questions of Fifteen Marks each. Answer ANY TWO questions (Total = 30 Marks)

16. a. Draw a well labelled structure of an animal cell. (5 Marks)

b. State the function of any FIVE organelles of an animal cell. (10 Marks)

17. Discuss the digestion and absorption of carbohydrates in the human body. (15 Marks)

18. a. Name FIVE organs that make up the circulatory system. (5 marks)

b. Explain the process of blood flow in the human body. (10 Marks)