

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

STAR ANNEX CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF NURSING**

COURSE CODE: NCN 116

COURSE TITLE: HUMAN PHYSIOLOGY I (SUPPLIMENTARY).

DATE: 4/10/2022

TIME: 3PM-6PM

INSTRUCTIONS TO CANDIDATES

Answer ALL questions

TIME: 3
Hours

- 1) Which of the following characterizes carbohydrate digestion?
 - a. It begins when food comes in contact with gastric juice
 - b. It begins when the food comes in contact with saliva
 - c. It begins with when food comes in contact with pancreatic secretions
 - d. It ends when starch has been converted to maltose
- 2) Which of the following cell types found in the intestinal tract secretes hydrochloric acid?
 - a. Acidic cells
 - b. Parietal cells
 - c. Peptic cells
 - d. Mucus neck cells
- 3) Some absorption occurs in the large intestine, but this is mostly limited to...
 - a. Amino acids
 - b. Water & electrolytes
 - c. Fatty acids
 - d. Buffers and mucous secreted by the large intestinal mucosa T
- 4) Lipids...
 - a. Are broken down by pepsin
 - b. Are absorbed into lacteals
 - c. Become part of micelles in the duodenum
 - d. B & C .
- 5) Intestinal proteolysis is accomplished by all of the following EXCEPT
 - a. Carboxypeptidase
 - b. Chymotrypsin
 - c. Pepsin
 - d. Trypsin
- 6) External respiration refers to
 - a. Pulmonary ventilation
 - b. Ventilation and gas exchange between air and blood
 - c. Ventilation, gas exchange, and gas transport by the blood
 - d. Everything except cellular respiration
- 7) Alveoli are microscopic air sacs branching off the
 - a. Tertiary bronchi
 - b. Bronchioles
 - c. Terminal bronchioles
 - d. Respiratory bronchioles
- 8) Which muscles are involved in quiet inspiration?
 - a. The internal and external intercostal muscles
 - b. The diaphragm
 - c. The abdominal muscles
 - d. The diaphragm and external intercostal muscles
- 9) The amount of air a person takes in during normal, restful breathing is called the _____.

- a. Dead space
 - b. Tidal volume
 - c. Vital capacity
 - d. Ventilation rate
- 10) According to Henry's law, the amount of gas that will dissolve in blood plasma or any other liquid is determined by all of the following factors, except the
- a. Solubility of the gas in the liquid
 - b. Partial pressure of the gas
 - c. PH of the liquid
 - d. Temperature of the liquid
- 11) Regarding partial pressure of respiratory gases
- a. The partial pressure of a given gas is determined by multiplying the percentage of the gas in the atmosphere by with its volume
 - b. The partial pressure of oxygen in the atmosphere is approximately 160 mmhg
 - c. The partial pressure of oxygen in the inspired air is approximately 160 mmhg
 - d. The partial pressure of oxygen in the arterial blood is approximately 160 mmhg
- 12) The action potential of cardiac muscle differs from that of skeletal muscles in:
- a. It is propagated more slowly.
 - b. It is shorter in duration
 - c. It has a higher amplitude
 - d. It has no plateau.
- 13) Which of the following is NOT a part of the specialized conduction system of the heart?
- a. Cells of the SA node.
 - b. Ventricular myocardial cells.
 - c. His bundle.
 - d. Purkinje fibers.
- 14) On an ECG, depolarisation of the ventricles is represented by the:
- a. T wave
 - b. QRS complex
 - c. P wave
 - d. P-Q interval
- 15) Which of the following correctly defines Stroke Volume (SV)?
- a. $SV = \text{End Diastolic Volume} - \text{End Systolic Volume}$
 - b. $SV = \text{Cardiac Output} - \text{End Systolic Volume}$
 - c. $SV = \text{End Diastolic Volume} - \text{Ejection Fraction}$
 - d. $SV = \text{End Systolic Volume} - \text{End Diastolic Volume}$
- 16) Fenestrated capillaries
- a. Are more permeable than continuous capillaries and are found in the skin and muscle
 - b. Are less permeable than continuous capillaries and are found in endocrine glands and intestinal villa
 - c. Have less tight junctions than continuous capillaries and have pores in their endothelial cells
 - d. Are found in bone marrow, liver and spleen

- 17) The liquid portion of the blood with fibrinogen and some of the clotting proteins removed is
- Plasma.
 - Plasma proteins.
 - Formed elements.
 - Serum.
- 18) The process of erythropoiesis
- Takes place in the spleen.
 - Requires vitamin B12 and folate.
 - Is inhibited by erythropoietin.
 - Is stimulated when oxygen increases in the blood.
- 19) These leukocytes produce enzymes that reduce the inflammatory response and are associated with allergies or parasitic infections.
- Basophils
 - Eosinophils
 - Lymphocytes
 - Monocytes
- 20) For the ABO blood group, the antigens are found _____, and the antibodies are found _____.
- On the erythrocytes, on the leukocytes
 - On the erythrocytes, in the plasma
 - On the leukocytes, in the plasma
 - In the plasma, on the erythrocytes

SAQs

- 1) Explain the meaning of the following terms as applied to breathing:- Tidal volume, inspiratory reserve volume, vital capacity, residual volume (2 marks each)
- 2) Describe the production and functions of Hydrochloric acid (8 marks)
- 3) Draw, label and describe the structures involved in generation and propagation of impulse through the heart (8 marks)
- 4) Explain the ABO and rhesus blood grouping (8 marks)
- 5) Outline the functions of the skin. (8 marks)

LEQ

1. Describe in detail the process of hemostasis/blood clotting (20 marks)
2. Define cardiac cycle and describe the phase's involved (20 marks).