



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2020 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMMUNITY HEALTH AND DEVELOPMENT**

**REGULAR PROGRAMME**

**CHD 121: HUMAN ANATOMY AND PHYSIOLOGY**

**Date: April 2020**

**Duration: 3 Hours**

**INSTRUCTIONS: Answer ALL Questions in Part I and II, and any TWO in Part III**

## **PART I: MULTIPLE CHOICE QUESTIONS**

**(20 Marks)**

- Q1. When a baby suckles at its mother's breast the stimulus at the breast is sent to the mother's brain (hypothalamus). The brain responds by releasing hormones to stimulate the production and ejection of milk from the breast. This helps the newborn to receive nourishment and encourages more suckling. This example is best described as a
- Negative feedback
  - Positive feedback
  - Necessary life function
  - Loss of homeostasis
- Q2. Tendons and ligaments are composed primarily of
- Adipose tissue
  - Dense connective tissue
  - Muscle tissue
  - Loose connective tissue
- Q3. A fracture that breaks the surface of the skin is called a
- Compound
  - Simple
  - Gross
  - Superficial

- Q4. A forensic scientist wants to identify the gender of a skeleton based on the pelvic structure. Which of the following characteristics would be found in a male pelvis?
- A wide, rounded pelvic opening
  - A long, curved sacrum
  - Wide, flared ilia
  - A wide pubic arch
- Q5. The majority of sensory information is relayed to the cerebrum by the
- Medulla oblongata
  - Hypothalamus
  - Pons
  - Thalamus
- Q6. A deficiency of \_\_\_\_\_ can cause pernicious anemia
- Vitamin B12
  - Iron
  - Folic acid
  - Vitamin C
  - Erythropoietin secretion
- Q7. A person with type B blood can safely donate red blood cells to someone of type \_\_\_\_\_ and can receive red blood cells from someone of type \_\_\_\_\_
- A; B
  - O; O
  - AB; AB
  - O; AB
  - B; O
- Q8. Hypertension is commonly considered to be a chronic resting blood pressure higher than
- 180/90
  - 140/90
  - 200/90
  - 130/60
  - 120/75
- Q9. The part of the heart capable of generating the largest force is the
- Right atrium
  - Left atrium
  - Right ventricle
  - Left ventricle

- Q10. Which of the following is a function of the lymphatic system?
- a) Oxygen delivery to tissues
  - b) Absorption of digested fats
  - c) Transport of absorbed amino acids from the intestine to the liver
  - d) Thermoregulation
- Q11. The \_\_\_\_\_ secretes peptidases and disaccharidases, whereas the \_\_\_\_\_ secretes trypsin, chymotrypsin, amylase, lipase, and nucleases.
- a) Stomach/ liver
  - b) Stomach/ small intestine
  - c) Liver/ small intestine
  - d) Liver/ pancreas
- Q12. Which of the following best describes the difference in the way B cells and cytotoxic T cells respond to invaders? B cells \_\_\_\_\_
- a) Kills viruses directly; cytotoxic T cells kills virus infected cells
  - b) Secrete antibodies against a virus; cytotoxic T cells kill virus-infected cells
  - c) Accomplish cell-mediated immunity; cytotoxic T cells accomplish humoral immunity
  - d) Respond the first time the invader is present; cytotoxic T cells respond subsequent times
- Q13. Which antibody class can fix complement?
- a) IgA
  - b) IgD
  - c) IgG
  - d) IgM
- Q14. At the lungs:
- a) Both oxygen and carbon dioxide diffuse from the blood into the alveoli
  - b) Both oxygen and carbon dioxide diffuse from the alveoli into the blood
  - c) Oxygen diffuses into the blood and carbon dioxide diffuses into the alveoli
  - d) Carbon dioxide diffuses into the blood and oxygen diffuses into the alveoli
- Q15. Which of the following is not part of the gastrointestinal tract?
- a) Small intestine
  - b) Pharynx
  - c) Esophagus
  - d) Liver

- Q16. James has just consumed a half stick of butter. Most of the nutrients in the butter will be absorbed in the form of?
- a) Amino acids
  - b) Sugars
  - c) Glycerol and fatty acids
  - d) nucleotides
- Q17. Urine passes through the:
- a) Bladder to ureter to pelvis of kidney
  - b) Pelvis of kidney to ureter to bladder to urethra
  - c) Glomerulus to ureter to renal tubule
  - d) Urethra to bladder to ureter
- Q18. An active process that moves substances from the blood into the nephron is
- a) Tubular reabsorption
  - b) Tubular filtration
  - c) Tubular secretion
  - d) Osmosis
- Q19. Diabetes insipidus results from a lack of:
- a) Glucagon
  - b) Aldosterone
  - c) Calcitonin
  - d) Antidiuretic hormone
- Q20. Progesterone levels are highest during?
- a) Follicular phase
  - b) Proliferative phase
  - c) Ovulation
  - d) Secretory phase

**PART II: SHORT ANSWER QUESTIONS**

**(20 Marks)**

- Q1. State four functions of the skin **(4 Marks)**
- Q2. Outline different body fluid compartments and their ionic compositions **(4 Marks)**
- Q3. Outline the surface anatomy of the respiratory system **(5 Marks)**
- Q4. Draw a well labelled diagram of a nephron **(3 Marks)**

Q5. With specific examples list 2 types of joints found in the human body  
(2 Marks)

Q6. List 5 endocrine glands and 2 hormones that each of the glands produce  
(2 Marks)

**PART III: LONG ANSWER QUESTIONS** (40 Marks)

Q1. About the reproductive cycle:  
a) Beginning with the first day of menstruation, describe the events of one complete cycle, including the role of hormones involved. (10 Marks)  
b) Discuss 6 different contraception methods (6 Marks)  
c) List 4 disadvantages of contraceptives (4 Marks)

Q2. Discuss  
a) Digestion of carbohydrates (10 Marks)  
b) Digestion of proteins (10 Marks)

**\*END\***