MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

SECOND YEAR SECOND TRIMESTER

SCHOOL OF PURE, APPLIED AND HEALTH SCIENCES

DIPLOMA IN FOOD, NUTRITION AND DIETETICS

COURSE CODE: DND 2202

COURSE TITLE: HUMAN ANATOMY AND PHYSIOLOGY II

DATE: 20/4/ 2023 **TIME: 0830-1030 HRS**

INSTRUCTION TO CANDIDATES

Section A: Multiple Choice Questions. Answer ALL Questions

Section B: Short Answer Questions. Answer ALL Questions

Section C: Long Answer Questions. Answer Question ONE and any other question.

This paper consists of 6 printed pages. Please turn over.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. When antigens (unwanted substances) enter the body, lymphocytes increase the production of?
   A. Antibodies
   B. Phagocytes
   C. B cells
   D. T cells
2. What is the name for the entry point to the kidney for nerves, blood vessels, ureters and lymphatics?
   A. calyx
   B. hilus
   C. pelvis
   D. pyramid
3. Which material is secreted into the filtrate in the kidney tubule?
   A. H 2 O
   B. urea
   C. Na +
   D. albumin
4. What is the name of the tube that connects the bladder to the kidney?
   A. renal tubule
   B. ureter
   C. urethra
   D. collecting duct
5. The kidneys produce all of the following EXCEPT one. Which one?
   A. erythropoietin
   B. angiotensinogen
   C. hydronium ions
   D. bicarbonate ions
6. By what name is the condition where nitrogenous wastes accumulate in the blood known?
   A. anuria
   B. uremia
   C. polyuria
   D. oliguria
7. What effect does aldosterone have?
   A. increases the absorption of Na + from the kidney tubules.
   B. makes the kidney tubules more permeable to water.
   C. catalyses the formation of angiotensin I.

D. blocks the release of ADH

8. The hormone that increases the conversion of glycogen to glucose and the use of amino acids and fats for energy is?
   A. Insulin
   B. Glucagon
   C. Growth hormone
   D. Thyroxine
9. The end product of metabolism in amino acid metabolism is?
   A. Uric acid
   B. Creatinine
   C. Bilirubin
   D. Urea
10. A variety of hormones regulate metabolism. Which of the following DOES NOT?
   A. Thyroxine
   B. Insulin
   C. Cortisol
   D. Melatonin
11. The nutrition student knows that the metabolic rate of an individual is affected by several factors. Which one is FALSE?
   A. Exercise increases energy expenditure and raises metabolic rate
   B. Metabolic rate decreases with age
   C. Tall, thin people usually have higher metabolic rates than short, stocky people of the same weight
   D. Estrogen increases metabolic activity to a greater degree than does testosterone
12. Select the INCORRECT statement. The urinary bladder
   A. In women, is superior to the uterus
   B. In men, the bladder is superior to the prostate gland
   C. Is lined by transitional epithelium
   D. When empty, the mucosa appears wrinkled; these folds are rugae
13. Which of the following nutrients is NOT absorbed by the lymph capillaries in the villi of the small intestine (lacteals)?
   A. Fatty acids
   B. Vitamin K
   C. Vitamin C
   D. Vitamin D
14. The lymphatic structure contains fixed macrophages (Reticuloendothelial cells) that phagocytize pathogens or other foreign material in the blood; as well as old red blood cells and form bilirubin is?

A. Tonsils
B. Spleen
C. Lymph nodes
D. Thymus

15. Which of the following antibodies is present in breast milk to provide passive immunity for breastfed infants?
A. IgG
B. IgM
C. IgA
D. IgE

16. Which of the following statements about antidiuretic hormone is FALSE?
A. Also called vasopressin
B. It increases the reabsorption of water by the kidney tubules
C. The stimulus for secretion of ADH is decreased water content of the body
D. ADH also increases sweating

17. Select the statement that is FALSE. Oxytocin,
A. Stimulates contraction of the uterus at the end of pregnancy
B. Stimulates production of milk from the mammary glands
C. Stimulates contraction of the smooth muscle cells around the mammary ducts
D. Is secreted by the posterior pituitary gland

18. Atrial natriuretic peptide is secreted by the?
A. Heart
B. Brain
C. Kidneys
D. Placenta

19. Endocrine disorder may be due to the hyperactivity or hypoactivity of the concerned gland. What is the term for the combination of signs and symptoms (associated with a disease), which occur together and suggest the presence of a certain disease or the possibility of developing the disease?
A. Subjective data
B. Objective data
C. Syndrome
D. Clinical infection

20. What is the role of oxytocin in males?
A. It facilitates release of sperm into urethra by causing contraction of smooth muscle fibers in reproductive tract, particularly vas deferens
B. Causes somnolence
C. Increases libido (sexual drive)

D. Responsible for the maintenance of spermatogenesis.

SECTION B: SHORT ANSWER QUESTION (40 MARKS)

1. State two differences between the male and female urethra. (4 Marks)
2. Describe the structure and function of the ureters. (4 Marks)
3. Name and state the functions of any three (3) hormones that affect the kidneys. (6 Marks)
4. Describe the mechanism of phagocytosis. (5 Marks)
5. Outline the clinical features of inflammation. (5 Marks)
6. Describe your role as a nutrition student in enhancing immunity among patients admitted to the wards. (8 Marks)
7. Explain how negative feedback and positive feedback mechanisms work. Give two examples of each. (4 Marks)
8. Distinguish between vaccination and Immunization. Give an example of each. (4 Marks)

SECTION C: LONG ANSWER QUESTIONS (40 MARKS)

ANSWER ANY TWO QUESTIONS.

1. The kidneys are a major organ of the human body.
   a) Explain any four (4) functions of the kidneys, apart from urine formation. (8 Marks)
   b) With the aid of a well-labeled diagram, discuss the structure and function of the kidney nephron. (12 Marks)

2. Immunity may be defined as the ability to destroy pathogens or other foreign material and to prevent further cases of certain infectious diseases.
   a) Distinguish between innate and adaptive immunity. (4 Marks)
   b) Describe the mechanisms of innate immunity. (8 Marks)
   c) Discuss adaptive immunity. (8 Marks)

3. A major regulating system of the body is the endocrine system, which consists of endocrine glands that secrete chemicals called hormones.
   a) Describe the Location of any five (5) endocrine glands, apart from the pituitary gland. Include the hormones secreted by each. (10 Marks)
   b) State the functions of the hormones of the anterior pituitary gland, and state the stimulus for secretion of each. (10 Marks)

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