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

STAR ANNEX CAMPUS

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF NURSING**

COURSE CODE: NCN 123

COURSE TITLE: HUMAN PHYSIOLOGY II (MAIN EXAM).

DATE: 13TH APRIL, 2023

TIME: 8AM-11AM

INSTRUCTIONS TO CANDIDATES

Answer ALL questions

TIME: 3 Hours

MCQS

1. Action potential
 - a. Is a graded potential.
 - b. Is produced by sub threshold stimulus.
 - c. Starts with repolarization caused by outward movement of Cl⁻
 - d. Is conducted slower in thin nerve fibers.
2. Which of the following nerve should have the slowest conduction velocity?
 - a. An unmyelinated, small-diameter nerve
 - b. An unmyelinated, large-diameter nerve
 - c. A myelinated, small-diameter nerve
 - d. A myelinated, large-diameter nerve
3. The axon of ganglion cells from the -----region of retina of left eye and those of -----region of retina of right eye proceed into the left optic tract
 - a. Temporal, temporal
 - b. Nasal, nasal
 - c. Nasal, temporal
 - d. Temporal, nasal
4. Transmission of sound wave through the inner ear occurs through
 - a. Ossicles
 - b. Air
 - c. Fluid
 - d. Nerves
5. The idea of a voluntary movement is thought to originate in the
 - a. Primary sensory cortex
 - b. Primary motor cortex
 - c. Motor association cortex
 - d. cerebellum
6. Concerning cerebellar disorders
 - a. Tone increases
 - b. Reflexes are exaggerated
 - c. The gait becomes wide-base
 - d. Consciousness is lost
7. Pain sensation
 - a. It's a perception occurs in the hypothalamic nuclei
 - b. Fast pain is carried by the C-Fibers
 - c. Referred pain is usually from somatic to visceral receptors
 - d. Its receptors are free nerve endings
8. The following is true about frontal lobe
 - a. Controls gait
 - b. Is the center for intelligence b)
 - c. Is the center for memory
 - d. Is one of the centers for sensation of smell
9. Which of the following hormones is not bound to plasma proteins?

- a. Cortisol
 - b. Thyroxine (T4)
 - c. Antidiuretic hormone
 - d. estradiol
10. If a woman hears her baby cry, she may experience milk ejection from the nipples even before the baby is placed to the breast. What is the explanation for this?
- a. The sound of the hungry baby's cry elicits secretion of oxytocin from the posterior pituitary, which reaches the breast and causes contraction of the myoepithelial cells.
 - b. The sound of the hungry baby's cry causes a reflex relaxation of the myoepithelial cells, allowing the milk to flow.
 - c. The sound of the hungry baby's cry elicits a surge of prolactin from the anterior pituitary, which promptly stimulates milk production from the breast.
 - d. The sound of the hungry baby's cry elicits sympathetic nervous system discharge that causes contraction of the myoepithelial cells.
11. Thyroid hormones belong to which class of hormones
- a. Steroids
 - b. Proteins
 - c. Polypeptides
 - d. Amino acid derivatives
12. For calcium metabolism all are required except
- a. Vitamin D
 - b. Calcitonin
 - c. Parathyroid hormone
 - d. Thyronine
13. Insulin released from Beta cells in the pancreas affects secretion of glucagon by Alpha cells. What type of signaling is this?
- a. Endocrine
 - b. Paracrine
 - c. Autocrine
 - d. Juxtacrine
14. In which zones is cortisol produced ?
- a. Zona glomerulosa
 - b. Zona fasciculata
 - c. Zona reticularis
 - d. Zona medulla
15. What part of the nephron reabsorbs/removes close to 100% of filtered glucose ?
- a. Ascending Loop of henle
 - b. Vasa recta
 - c. Peritubular capillaries
 - d. Proximal convoluted tubule
16. Which of the following is not a result of menopause
- a. Loss of hormones

- b. Reduction in breast mass
 - c. Increased calcium deposits in bones
 - d. Psychological changes.
17. Which cells are present in a male age five?
- a. spermatocytes
 - b. spermatozoa
 - c. spermatogonia
 - d. spermatid
18. Which of the following is the MOST permeable to water?
- a. Distal convoluted tubule (DCT)
 - b. Cortical portion of collecting tubule
 - c. Thin descending loop of Henle
 - d. Thick ascending limb of the loop of Henle
19. M.T. is a 27-year-old white woman who has been attempting pregnancy for 15 months. She is monitoring her ovulation with LH testing. Her test today indicated that she will ovulate tomorrow. In what phase will the ovulated germ cell be arrested?
- a. Prophase of the first mitotic division
 - b. Anaphase of the first meiotic division
 - c. Metaphase of the second meiotic division
 - d. Zygotic phase
20. S.D. is a 25-year-old woman who has been attempting to conceive for 1 year. She presented to an infertility doctor, as her efforts have been unsuccessful. She reported that she has been timing intercourse based on the change in her vaginal discharge. She noted that midcycle, her discharge becomes thin and watery. High levels of which hormone account for this change along with softening of the cervical stroma?
- a. Estrogen
 - b. Progesterone
 - c. Prolactin
 - d. ADH

SAQs

1. With aid well labelled diagram describe how impulse is transferred across a synapse
2. Describe source, synthesis , chemical structure, stimuli and effects insulin hormone (8marks)
3. Outline the different areas of the frontal lobe and their functions (8 marks)
4. Describe the stages of sleep
5. Describe the effects of testosterone to developing male fetus , at puberty and in elderly male

LAQS

1. Describe the physiology of vision (20 marks)
2. Discuss in detail the functions of the kidneys (20marks)