



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SPECIAL EXAMINATIONS
FIRST YEAR EXAMINATION FOR THE AWARD OF THE
CERTIFICATE IN COMMUNITY HEALTHY AND DEVELOPMENT
THIRD SEMESTER, 2021/2022
(FEBRUARY - JUNE, 2022)

CCOH 0111: HUMAN ANATOMY AND PHYSIOLOGY

STREAM: Y1 S3

TIME: 2 HOURS

DAY:

DATE: 00/07/2022

INSTRUCTIONS:

1. Do not write anything on this question paper.

Section A: Multiple Choice

Answer all Questions in this section

1. A section that divides the body on the longitudinal plane into equal right and left parts is called:
 - A. median (midsagittal)
 - B. oblique
 - C. transverse
 - D. frontal
 - E. coronal
2. Which of the following is the correct sequence, going from simplest to most complex, in the levels of structural organization of the human body:
 - A. chemical level, tissue level, cellular level, organ system level, organ level, organismal level
 - B. cellular level, chemical level, tissue level, organ system level, organismal level, organ level
 - C. chemical level, cellular level, tissue level, organ level, organ system level, organismal level

- D. cellular level, chemical level, tissue level, organ level, organ system level, organismal level
 - E. cellular level, tissue level, chemical level, organ level, organ system level, organismal level
3. The lymphatic system:
- A. Synthesizes vitamin D
 - B. Responds to internal and external changes by activating appropriate muscles and glands
 - C. Secretes hormones that regulate processes such as growth, reproduction, and nutrient use (metabolism) by body cells
 - D. Picks up fluid leaked from blood vessels and returns it to the blood
 - E. Produces heat
4. Which of these regions in the abdominopelvic cavity are medial:
- A. epigastric, umbilical, and hypogastric regions
 - B. umbilical, right lumbar, and left lumbar regions
 - C. epigastric, right, and left hypochondriac regions
 - D. iliac (inguinal), lumbar, and hypogastric regions
 - E. right and left iliac (inguinal), and hypogastric regions
5. Which type of section could be used to separate the thoracic cavity from the abdominopelvic cavity:
- A. dorsal
 - B. transverse
 - C. sagittal
 - D. coronal
 - E. ventral
6. Which type of tissue conducts electrochemical impulses:
- A. nervous tissue
 - B. connective tissue
 - C. muscle tissue
 - D. dense tissue
 - E. epithelial tissue
7. Which type of epithelial tissue is found lining kidney tubules:
- A. simple columnar
 - B. simple cuboidal
 - C. simple squamous
 - D. pseudostratified columnar
 - E. stratified squamous
8. Perform transcription on this partial sequence of DNA into mRNA:
TTA-GCT-ACT
- A. GGC-TAG-TAG
 - B. AAT-CGA-TGA
 - C. UUT-CGU-TGU
 - D. UUA-CGU-AGU
 - E. AAU-CGA-UGA
9. The last step in the process of tissue regeneration is:
- A. scab formation
 - B. surface epithelium regenerates
 - C. granulation tissue forms
 - D. blood clot forms

- E. capillaries become very permeable
10. Looking into a microscope, you notice cells swimming, propelled by a long tail. What cell structure must these cells have in order to be mobile:
- A. smooth ER
 - B. flagella
 - C. ribosomes
 - D. cytoplasm
 - E. peroxisomes
11. Which one of the following is NOT true about the cell membrane:
- A. it allows water soluble molecules to pass through easily
 - B. its lipid components are primarily phospholipids and cholesterol
 - C. it consists of two lipid layers
 - D. it regulates the entry and exit of cell materials
 - E. it contains proteins for specialized functions
12. Facilitated diffusion requires the use of:
- A. lysosomes
 - B. protein channels or molecules
 - C. Golgi apparatus
 - D. ATP
 - E. vacuoles
13. The correct order of phases of the cell cycle is:
- A. telophase, metaphase, anaphase, prophase
 - B. prophase, metaphase, anaphase, telophase
 - C. prophase, interphase, metaphase, anaphase, telophase
 - D. metaphase, anaphase, prophase, telophase
 - E. interphase, prophase, metaphase, anaphase, telophase
14. The epithelial tissue found in areas subject to considerable friction and abuse, such as the esophagus, is:
- A. transitional
 - B. simple squamous epithelium
 - C. pseudostratified columnar epithelium
 - D. simple columnar epithelium
 - E. stratified squamous epithelium
15. Which organelle uses molecular oxygen to convert and detoxify harmful substances such as alcohol and free radicals:
- A. secretory vesicles
 - B. lysosomes
 - C. ribosomes
 - D. peroxisomes
 - E. Golgi apparatus
16. The "tanning" effect (darkening of the skin) that occurs when a person is exposed to the sun is due to:
- A. melanin
 - B. keratin
 - C. oil
 - D. sweat
 - E. Langerhans cells

17. Which of the following is NOT a true statement about the papillary layer of the dermis:
- it is the deepest layer of the skin
 - it is highly vascular
 - it contains nerve endings that respond to touch and temperature stimuli
 - it produces the pattern for fingerprints
 - it is located immediately beneath the epidermis
18. The secretions of the eccrine glands are:
- solely metabolic wastes
 - basic
 - 99% water, sodium chloride, and trace amounts of wastes, lactic acid, and
 - fatty substances, proteins, antibodies, and trace amounts of minerals and vitamins
 - primarily uric acid
19. Although you get wet while swimming, a tough protein within the skin prevents it from soaking up moisture like a sponge. This substance is:
- carotene
 - mucus
 - keratin
 - melanin
 - serous fluid
20. A needle would pierce the epidermal layers of the forearm in which order:
- stratum basale
 - stratum corneum
 - stratum granulosum
 - stratum lucidum
 - stratum spinosum
- 1, 3, 5, 2, 4
 - 2, 4, 3, 5, 1
 - 2, 3, 5, 1
 - 1, 5, 3, 4, 2
 - 2, 3, 4, 1, 5

Section B: Short Answer Questions (20 Points)

Answer all questions in this section

- Explain how the skin functions to protect deeper tissues. **(4 Marks)**
- Since epithelial tissues are avascular, explain how these tissues receive nourishment. **(4 Marks)**

3. Identify four changes that occur to the skin and subcutaneous connective tissue as a result of aging, and state how these changes can be delayed. **(4 Marks)**

4. Differentiate between the two types of endoplasmic reticulum.

(4 Marks)

5. Explain the difference between homeostatis and metabolism.**(4 Marks)**

Section C: Long Essay Questions (40 points)

Answer TWO questions from this section

1. Explain the differences among the three types of muscle tissue.

(20 Marks)

2. List and explain the eight necessary human life functions.

(20 Marks)

3. Discuss the four stages of mitosis.

(20 Marks)