



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES
KENYA REGISTERED COMMUNITY HEALTH NURSING
End Semester April 2025 Examinations

COURSE CODE AND TITLE: DNS 112: Anatomy and Physiology

DATE: 7-4-2025

TIME: 2 HOURS

Start: 0900 HOURS

Finish 1100 HOURS

INSTRUCTIONS

- 1. This exam will be marked out of 70 Marks**
- 2. ALL Questions are compulsory.**
- 3. The Examination has Three Sections: Section I- Multiple Choice Questions, Section II: Short Answer Questions, Section III: Long Essay Questions**
- 4. Answer all Questions in the ANSWER BOOKLET provided**
- 5. Do not write anything on the question paper**
- 6. Use the back of your booklet for rough work if need be.**

SECTION I: MULTIPLE CHOICE QUESTIONS (20 MARKS)

- The correct sequence of levels of organization in the human body is:-
 - Tissue → Cell → Chemical → Organ → Organ System → Organism
 - Chemical → Cell → Tissue → Organ → Organ System → Organism
 - Chemical → Tissue → Cell → Organ System → Organ → Organism
 - Organ System → Organ → Cell → Chemical → Tissue → Organism
- The gluteal region is _____ to the sacral region and _____ to the pectoral region.
 - Superior, distal
 - Inferior, lateral
 - Inferior, posterior
 - Inferior, superior
- The following is an effect of angiotensin II that helps regulate blood volume and pressure:-
 - Decrease glomerular filtration rate
 - Decrease aldosterone release
 - Increase aldosterone release
 - Reduce systemic vasoconstriction
- Malabsorption of vitamin B12 results in:-
 - Megaloblastic anemia
 - Pernicious anemia
 - Polycythemia
 - Iron deficiency anemia
- The following is a feature of the femur:-
 - Articulates with the radius
 - Attach ligaments
 - Head articulates with tibia
 - Neck is distal to trochanters
- Failure of the ductus arteriosus to close results in:-
 - Patent foramen ovale
 - Coarctation of the aorta
 - Patent ductus arteriosus
 - Tetralogy of Fallot

7. The amount of air entering the lungs during normal quiet breathing is known as:-
- A. Expiratory reserve volume
 - B. Residual volume
 - C. Tidal volume
 - D. Inspiratory reserve volume
8. The valve located between the left atrium and left ventricle is known as:-
- A. Pulmonic valve
 - B. Mitral valve
 - C. Tricuspid valve
 - D. Aortic valve
9. The following pressures drives pulmonary ventilation:-
- A. Pulmonary pressure
 - B. Intrapleural pressure
 - C. Alveolar pressure
 - D. Atmospheric pressure
10. At what point does the respiratory zone begin in the bronchial tree?
- A. Terminal bronchioles
 - B. Alveoli bronchi
 - C. Respiratory bronchioles
 - D. Secondary bronchi
11. The region of the pharynx that serves as an airway only is:-
- A. Oropharynx
 - B. Laryngopharynx
 - C. Nasopharynx
 - D. Hypopharynx
12. The primary function of the lamina propria in the alimentary canal is:-
- A. Produces digestive enzymes
 - B. Nutrient transport and immunity
 - C. Supports nerve endings
 - D. Stores excess nutrients and macrophages
13. The hormone produced in the duodenum that stimulates release of bile from the gallbladder is:-
- A. Secretin
 - B. Gastric inhibitory peptide
 - C. Cholecystokinin
 - D. Insulin

14. The chief cells primarily secrete :-
A. Hydrochloric acid
B. Intrinsic factor
C. Pepsinogen
D. Gastric inhibitory peptide
15. The type of glial cells forms the myelin sheath in the central nervous system?
A. Microglial
B. Ependymal
C. Oligodendrocytes
D. Astrocytes
16. The cranial nerve is primarily responsible for motor impulses to the tongue muscle is:-
A. Glossopharyngeal
B. Vagus
C. Hypoglossal
D. Facial
17. The primary function of luteinizing hormone (LH) in reproduction is:-
A. Stimulates milk production in mammary glands
B. Triggers ovulation and testosterone production
C. Enhances calcium absorption in bones
D. Increases heart rate and blood pressure
18. The following symptoms are associated with hyperglycemia in diabetes:-
A. Increased appetite and weight gain
B. Excretion of glucose in the urine
C. Severe headaches and dizziness
D. Decreased blood pressure
19. The following structure contains hearing receptors:-
A. Utricle
B. Cochlear duct
C. Saccule duct
D. Semicircular canals
20. The primary function of aqueous and vitreous humour in the eye is:-
A. Provide nutrients to the cornea
B. Prevent collapse by maintaining pressure
C. Assist in pupil dilation
D. Control the movement of the iris

SECTION II: SHORT ANSWER QUESTIONS (30 MARKS.)

1. Draw a well- labelled diagram of the human heart (5 Marks)
2. State the major Five (5) functions of the kidneys (5 Marks)
3. State Two (2) functions of each of the following parts of the Digestive system (6 Marks)
- a. Small Intestine (2mks)
 - b. Pancreas (2mks)

c. Liver (2mks)

4. Outline Four (4) physiological functions of the Skin (4 Marks)
5. State Two (2) functions of each of the following parts of the brain (4 Marks)
- a. Occipital lobe (1mk)
 - b. Cerebellum (1mk)
 - c. Parietal lobe (1mk)
 - d. Broca's area (1mk)
6. Match the Cranial Nerve in Column A to the appropriate function in column B (6 Marks)

A	B
A. Ophthalmic	1. Facial expressions and Taste
B. Facial	2. Smell Perception
C. Glossopharyngeal	3. Vision
D. Trigeminal	4. Facial Sensations
E. Abducens	5. Tongue Movement
F. Vestibulocochlear	6. Taste
G. Oculomotor	7. Speech
H. Trochlear	8. Hearing
I. Hypoglossal	9. Facial expression and eye movement
J. Vagus	10. Neck Movement
K. Olfactory	11. Controls Viscera
L. Accesory	12. Eye Movement

SECTION III : LONG ANSWER QUESTION (20 MARKS)

1. The cardiovascular and hematologic systems are vital in the human body:
- a) Describe the heart's normal electrical conduction pathway (9 Marks)
 - b) Explain Five (5) differences between arteries and veins. (5 marks)
 - c) Identify Three (3) types of granulocytes and explain their functions. (6 marks)