



**AMREF INTERNATIONAL UNIVERSITY**  
**SCHOOL OF MEDICAL SCIENCES**  
**DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES**  
**KENYA REGISTERED COMMUNITY HEALTH NURSING**  
**END OF JANUARY-APRIL 2026 SEMESTER EXAMINATIONS**

**7<sup>TH</sup> APRIL 2026**

**DNS 112: Anatomy and Physiology**

**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 A- Multiple Choice Questions, Section B: Short Answer Questions, Section C: 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 CHOICES QUESTIONS**

**(20 MARKS)**

1. During transmission of a nerve impulse, depolarization occurs primarily due to:-
  - a) Efflux of potassium ions
  - b) Influx of calcium ions
  - c) Rapid influx of sodium ions across the neuronal membrane
  - d) Efflux of chloride ions
2. The events that occur first during normal inspiration is: -
  - a) Increase in intrapulmonary pressure
  - b) Passive relaxation of diaphragm
  - c) Contraction of diaphragm leading to increased thoracic volume
  - d) Compression of alveoli
3. The lung volume that represents the maximum amount of air that can be expelled after a maximal inspiration is: -
  - a) Tidal volume
  - b) Residual volume
  - c) Vital capacity
  - d) Inspiratory reserve volume
4. Protein digestion begins primarily in the:-
  - a) Mouth
  - b) Stomach
  - c) Small intestine
  - d) Large intestine
5. The majority of nutrient absorption occurs in the:-
  - a) Stomach
  - b) Ileum
  - c) Jejunum
  - d) Colon

6. The functional unit of the kidney responsible for filtration and urine formation is the:-
  - a) Renal pyramid
  - b) Nephron
  - c) Renal pelvis
  - d) Loop of Henle
7. The retinal structure that contains the highest concentration of cone photoreceptors and provides the sharpest vision is: -
  - a) Optic disc
  - b) Peripheral retina
  - c) Fovea centralis
  - d) Choroid
8. The structure in the inner ear that converts mechanical vibrations into nerve impulses is: -
  - a) Semicircular canals
  - b) Tympanic membrane
  - c) Organ of Corti
  - d) Eustachian tube
9. Olfactory receptors responsible for the sense of smell are located in the:-
  - a) Nasal vestibule
  - b) Olfactory epithelium of the superior nasal cavity
  - c) Nasopharynx
  - d) Hard palate
10. The that structure connects the liver to the gallbladder is: -
  - a) Common bile duct
  - b) Hepatic duct
  - c) Cystic duct
  - d) Pancreatic duct
11. The lung volume that cannot be measured by spirometry is:
  - a) Vital capacity
  - b) Tidal volume
  - c) Inspiratory reserve volume
  - d) Residual volume

12. The part of the adrenal gland secretes adrenaline is: -
- a) Adrenal cortex
  - b) Zona glomerulosa
  - c) Zona fasciculata
  - d) Adrenal medulla
13. The mechanism that primarily regulates aldosterone secretion is: -
- a) ACTH from the pituitary
  - b) Plasma glucose levels
  - c) Renin–angiotensin–aldosterone system
  - d) Thyroid hormone feedback
14. The number of lobes found in the left lung are: -
- a) 1
  - b) 2
  - c) 3
  - d) 5
15. One of the following bones is a metacarpal: -
- a) Talus
  - b) Navicular
  - c) Pisiform
  - d) Cuneiform
16. The hormone responsible for the onset of ovulation is: -
- a) Gonadotrophin releasing hormone
  - b) Follicle stimulating hormone
  - c) Luteinizing hormone
  - d) Estrogen
17. B cells lymphocytes mature in the: -
- a) Brain
  - b) Bone marrow
  - c) Thymus
  - d) Blood

18. The 'p' wave on the electrocardiogram corresponds to: -

- a) Atrial depolarization
- b) Atrial repolarization
- c) Ventricular depolarization
- d) Ventricular repolarization

19. The purpose of lymph node is to: -

- a) Trap macrophages
- b) Trap antigens
- c) Trap antibodies
- d) Trap hormones

20. Phagocytosis takes place in the: -

- a) Red blood cells
- b) Lymphocytes
- c) Neutrophils
- d) Platelets

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**SECTION B: SHORT ANSWER QUESTIONS**

**(30 MARKS)**

1. State five (5) regulatory functions of the endocrine system. (5 marks)
2. State Five (5) functions of the Larynx. (5 marks)
3. Explain four (4) factors affecting venous return. (4 marks)
4. A patient comes to the facility and upon taking his vital signs his blood pressure is 120/90mmhg, pulse of 80beats/minute, respirations of 24 breaths/min and a heart rate of 70beats/ minute, stroke volume 75mls
  - a) Calculate his mean arterial pressure, show your working. (3marks)
  - b) Calculate his cardiac output, show your working. (3marks)
5. Draw a well labelled diagram of a neuron. (6marks)
6. Giving examples outline four (4) type of joints found in the body. (4marks)

**SECTION C: LONG ANSWER QUESTIONS**

**(20MARKS)**

1. The skin is a very vital organ in the body and has a high significance to our survival.
  - a) Draw a well labelled diagram of the skin. (6 marks)
  - b) State seven (7) functions of parts of the skin. (7 marks)
  - c) Explain the physiology of temperature regulation of the skin. (7 marks)