AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

THE BACHELOR OF SCIENCE IN MIDWIFERY

END OF SEMESTER EXAMINATIONS APRIL 2026

UNIT NAME AND CODE: BSN 112 Human Anatomy I

DATE: **9TH APRIL 2026**

TIME: 2HOURS **Start: 9:00AM** **stop: 11:00AM**

1. The examination paper has **THREE (3)** sections. SECTION I: Multiple Choice Questions (20 Marks), SECTION II: Short Answer Question, (30 Marks) SECTION III: Long Answer Questions, (20 Marks) (Total 70 Marks)
2. Answer **ALL** questions in sections **A, B** and **C**
3. Write your college number on all sheets of paper used

AMIU

SECTION I: Multiple Choice Questions. (20 Marks)

1. A researcher observes a cell under the microscope. Suddenly, the sister chromatids begin to separate and migrate toward opposite poles of the cell. The phase of mitosis being observed:
   A. Prophase
   B. Metaphase
   C. Anaphase
   D. Telophase
2. A lecturer explains to students that in human reproduction, one type of gametogenesis produces a large gamete, while the other produces multiple smaller gametes. The statement that correctly describes this difference:
   A. Both completed within the gonads
   B. Both involve mitotic cell divisions
   C. Both produce the same number of viable gametes
   D. Oogenesis produces a smaller gamete
3. During antenatal care, a doctor explains that a particular hormone secreted by the syncytiotrophoblast is used to confirm pregnancy in laboratory tests. The hormone is:
   A. Oestrogen
   B. Progesterone
   C. Human chorionic gonadotropin (hCG)
   D. Follicle-stimulating hormone (FSH)
4. A couple is expecting twins. The doctor explains that these twins share 100% of their genetic material because they originated from a single fertilized egg. These type of twins are:
   A. Twins that develop from two eggs fertilized by two sperms
   B. Twins that always share the same placenta and amniotic sac
   C. Twins that share 100% of their genetic material
   D. Twins that are always of different sexes
5. In the respiratory tract, a medical student examines a slide of the trachea under the microscope. The lining epithelium appears to have nuclei at different levels, giving the illusion of stratification, but all cells are attached to the basement membrane. The predominant shape of the cells in this pseudostratified epithelium is:
   A. Squamous
   B. Columnar
   C. Cuboidal
   D. Transitional

AMU

6. During a histology practical, digital slides of lung tissue are projected. The instructor asks the students to identify the epithelium lining the alveolar ducts, which are specialized for gas exchange and require a thin barrier. The type of epithelium that lines the alveolar ducts is:
   A. Pseudostratified cuboidal
   B. Simple columnar
   C. Simple cuboidal
   D. Simple squamous
7. A trauma patient presents with a penetrating chest injury. On imaging, the affected bone is seen lying anteriorly in the thoracic cage, providing protection to vital organs such as the heart and lungs. The bones classified as a flat bone is:
   A. Humerus
   B. Sternum
   C. Hamate
   D. Maxilla
8. A medical student is reviewing skeletal development. They learn that during endochondral ossification, the primary ossification center forms first in the cartilage model, and bone tissue gradually replaces it. The part of the bone formed from the primary ossification center is:
   A. Diaphysis
   B. Epiphysis
   C. Metaphysis
   D. Epiphyseal plate
9. A 65-year-old patient presents with cranial trauma. On imaging, the sutures of the skull are clearly visible. The physician explains that these joints are designed for stability and protection, not movement. These type of joints are called:
   A. Synovial
   B. Fibrous
   C. Ball and Socket
   D. Cartilaginous
10. During a cardiac anatomy dissection, a student is asked to identify the structures that open into the right atrium. The structures pointed out are correct EXCEPT:
   A. Coronary sinus, coronary sinus and the venae cavae
   B. Inferior vena cava, coronary sinus and the venae cavae
   C. Pulmonary orifice, coronary sinus and the venae cavae
   D. Right atrioventricular orifice, coronary sinus and the venae cavae

AMU

11. A cardiologist is teaching medical students about the external features of the heart. He explains that the apex lies in the left 5th intercostal space, pointing downward, forward, and to the left. The chamber of the heart that forms the apex is:
    A. Right atrium
    B. Right ventricle
    C. Left atrium
    D. Left ventricle
12. A 40-year-old man sustains a head injury in a road traffic accident. CT imaging shows disruption of the cranial sutures. The type of joint affected is:
    A. Synovial joint
    B. Fibrous joint
    C. Ball and socket joint
    D. Cartilaginous joint
13. A 55-year-old smoker undergoes bronchoscopy. The trachea is lined by epithelium specialized for mucus secretion and ciliary clearance. The epithelium that lines the trachea is:
    A. Simple squamous
    B. Stratified squamous
    C. Pseudostratified columnar ciliated with goblet cells
    D. Transitional
14. During bronchoscopy, the physician notes incomplete cartilaginous rings in the airway. The structure being examined is:
    A. Larynx
    B. Trachea
    C. Bronchioles
    D. Alveoli
15. A patient undergoes surgery for intestinal obstruction. The surgeon explains that the intestinal wall contracts involuntarily to propel food. The type of muscle involved:
    A. Skeletal
    B. Cardiac
    C. Smooth
    D. Myoepiheliocytes
16. A patient is examined for shoulder stability. The doctor explains that certain muscles hold the scapula in place while the arm moves.Which group of muscles acts as fixators here?
    A. Rotator cuff muscles
    B. Quadriceps femoris
    C. Hamstrings

AMU

17. A patient presents with difficulty flexing the elbow and supinating the forearm. MRI shows injury at the radial tuberosity. The muscle that inserts here is:
    A. Biceps brachii
    B. Triceps brachii
    C. Brachialis
    D. Deltoid
18. A boxer sustains trauma to the posterior arm, impairing elbow extension the muscle that inserts into the olecranon process of the ulna is:
    A. Biceps brachii
    B. Triceps brachii
    C. Deltoid
    D. Brachioradialis
19. A patient with shoulder injury cannot abduct the arm beyond 15° the muscle, inserting at the deltoid tuberosity, that is affected is:
    A. Supraspinatus
    B. Deltoid
    C. Latissimus dorsi
    D. Pectoralis major
20. The muscle that inserts into the calcaneus via the Achilles tendon is:
    A. Soleus
    B. Gastrocnemius
    C. Tibialis anterior
    D. Peroneus longus

AMIU

SECTION II: SHORT ANSWER QUESTIONS (SAQs) (30 MARKS)

1. explain the phases of the cell cycle. (6 marks)

2. Name four connective tissues, and give one (1) example for each. (4 marks)

3. Outline the five (5) main types of synovial joints in the body, and state two (2) examples for each. (5 marks)

4. Outline five (5) events of 2nd week of embryological development. (5 marks)

5. Outline Carotid artery branches —and state their area of distribution. (6 marks)

6. Using a well-labeled diagram, illustrate the conducting system of the heart. (4 marks)

SECTION III: LONG ANSWER (LAQs) (20 MARKS)

1. Discuss embryology under the following headings:
   a) Three events of the first week of intra uterine development. (6 marks)

   b) Three events in 3rd week of embryonic development. (6 marks)

   c) Describe one function and one fate of each of the following: (8 marks)

      i. Amniotic membrane
      ii. Yolk sac
      iii. Allantois
      iv. Chorionic cavity

AMIU