

CHUKA



UNIVERSITY

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**UNIVERSITY EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR  
OF SCIENCE IN NURSING**

**NURS 111: HUMAN ANATOMY I**

**STREAMS: BSC (NURS) Y1T1**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 02/12/2019**

**8.30 A.M. – 10. 30 A.M.**

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**INSTRUCTIONS:**

- Do not write anything on the question paper.
- Mobiles phones and any other reference materials are NOT allowed in the examination room
- The paper has three sections. Answer ALL questions
- All your answers for Section I (MCQs) should be on one page.
- Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.

**SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)**

1. Which of the following is correct concerning the structure of the plasma membrane:
  - (a) Most of the phospholipids are found in the inner leaflet
  - (b) Cholesterol makes the membrane less fluid
  - (c) Glycolipids contribute to the formation of glycocalyx
  - (d) Most of the molecules found in the plasma membrane are hydrophobic
2. Degradation of cellular organelles by lysosomal enzymes after the formation of autophagosome is called:
  - (a) Autophagy
  - (b) Autolysis

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- (c) Homophagy
  - (d) Heterophagy
3. Which of the following occurs during prophase of meiosis I
- (a) Pairing of sister chromatids to form tetrads
  - (b) Alignment of chromosomes at the metaphase plate
  - (c) Disintegration of nucleus and nucleolus
  - (d) Condensation of chromatin into chromosomes
4. Which of the following correctly describes splicing:
- (a) Enzyme induced methylation
  - (b) Removal of superfluous introns
  - (c) Formation of mRNA strand from DNA
  - (d) Fusion of broken end of chromosome after deletion
5. The epithelium lining gastrointestinal tract and duct of many glands is:
- (a) Non-ciliated columnar
  - (b) Simple squamous
  - (c) Pseudostratified ciliated columnar
  - (d) Non keratinized stratified squamous
6. Purines in the Deoxyribonucleic acid (DNA)
- (a) Are smaller than pyrimidines
  - (b) Contain a single ring
  - (c) Alternate with phosphates to form rungs of the DNA chain
  - (d) Adenine pairs with thymine during transcription
7. The organ that occupies most of the left lumber region is:
- (a) Duodenum
  - (b) Spleen
  - (c) Liver
  - (d) Kidney
8. Events that occur during acrosomal phase of spermiogenesis include:
- (a) Formation of the neck and annulus
  - (b) Projection of distal centrioles to form an axoneme

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- (c) Fusion of golgi vesicles to form an acrosomic vesicle
  - (d) Development of a postnuclear cap from manchette microtubules
9. Spinal and cranial nerves develop from embryonic:
- (a) Endoderm
  - (b) Mesoderm
  - (c) Ectoderm
  - (d) Epiblast
10. The part of the primitive heart that forms the right ventricle is:
- (a) Truncus arteriosus
  - (b) Bulbus Cordis
  - (c) Primitive ventricle
  - (d) Sinus venosus
11. The collecting ducts and calyces of the fetal kidney develop from:
- (a) Metanephric mesoderm
  - (b) Urogenital sinus
  - (c) Mesonephric duct
  - (d) Ureteric bud
12. The most stabilizing factor of the acromioclavicular joint is:
- (a) Coracohumeral arch
  - (b) Coracoacromial arch
  - (c) Coracoclavicular ligament
  - (d) Sternoclavicular ligament
13. A young boy with a fracture of the medial epicondyle of the humerus is likely to injure which nerve:
- (a) Circumflex
  - (b) Ulnar
  - (c) Radial
  - (d) Median
14. Carpal bones that articulate with the metacarpal bones include:
- (a) Trapezium
  - (b) Triquetral

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- (c) Scaphoid
  - (d) Lunate
15. A protruding tongue is likely to result from a drug that causes paralysis of:
- (a) Transverse linguae
  - (b) Verticalaris linguae
  - (c) Genioglossus
  - (d) Longitudinalis superior
16. The most distinct features of Axis (C2) is the presence of:
- (a) Odontoid process
  - (b) Lateral masses
  - (c) Superior articular facets
  - (d) Transverse foramen
17. The contents of femoral triangle from medial to lateral are femoral:
- (a) Nerve, artery, vein
  - (b) Artery, nerve, vein
  - (c) Artery, vein, nerve
  - (d) Vein, artery, nerve
18. The skin of the abdomen near the midline is supplied by branches of the superior epigastric artery which arise from:
- (a) Femoral artery
  - (b) External iliac artery
  - (c) Circumflex artery
  - (d) Internal thoracic artery
19. Contents of the inguinal canal include:
- (a) Iliioinguinal nerve, vas deferens
  - (b) Iliioinguinal nerve, deep circumflex artery
  - (c) Iliohypogastric nerve, vas deferens
  - (d) Iliohypogastric nerves, deep circumflex artery

20. The sternal angle is located at the level of which rib:
- (a) 1<sup>st</sup>
  - (b) 2<sup>nd</sup>
  - (c) 4<sup>th</sup>
  - (d) 5<sup>th</sup>

**SECTION B: SHORT ANSWER QUESTIONS (40 MARKS)**

1. Explain three (3) components of the cytoskeleton [6 marks]
2. Explain three (3) types of epithelial membranes [6 marks]
3. State four (4) planes that divide the body into parts [4 marks]
4. Explain two (2) types of point genetic mutations [4 marks]
5. Describe three (3) muscle associated with the anterior aspect of the humerus [6 marks]
6. Describe arterial blood supply from the aorta to the structures of the neck [5 marks]
7. Outline five (5) joints of the thoracic cage [5 marks]
8. Explain two (2) muscles of the abdominal wall including their origin and insertion [4 marks]

**SECTION C: LONG ANSWER QUESTIONS (40 MARKS)**

1. After fertilization the zygote develops through the pre-embryonic and embryonic stages. Eventually it becomes a fetus where the body systems develop
  - (a) Describe the process of fertilization [7 marks]
  - (b) Utilizing a well labeled diagram, describe the temporary structures of the fetal circulation indicating their fate after birth [14 marks]
2. Each lower limb has 30 bones that articulate with each other to form various joints.
  - (a) Draw a well labeled diagram illustrating the parts of a femur [6 marks]
  - (b) Discuss seven (7) joints associated with the lower limb [14 marks]

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