

**UNIVERSITY OF SWAZILAND**  
**FACULTY OF HEALTH SCIENCES**  
**GENERAL NURSING SCIENCE DEPARTMENT**  
**FINAL EXAMINATION: DECEMBER 2012**

<b>COURSE TITLE:</b>	<b>HUMAN ANATOMY AND PHYSIOLOGY I</b>
<b>COURSE CODE:</b>	<b>HSC 116</b>
<b>MARKS ALLOCATED</b>	<b>75</b>
<b>TIME ALLOWED</b>	<b>TWO (2) HOURS</b>

**INSTRUCTIONS:**

- 1. THERE ARE TWO SECTIONS IN THIS PAPER.**
  - i) SECTION 1A IS MULTIPLE CHOICE**
  - ii) SECTION 1B IS MATCHING**
  - iii) SECTION 2 IS SHORT ANSWERS**
  
- 2. PLEASE ANSWER ALL SECTIONS**
  - i) SECTION 1 CARRIES 35 MARKS**
  - ii) SECTION 2 CARRIES 40 MARKS**
  
- 3. USE ANSWER BOOK FOR ALL YOUR ANSWERS.**

**NB: PLEASE DO NOT OPEN YOUR QUESTION PAPER UNTIL  
PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.**

## Section 1A

### MULTIPLE CHOICES

For each of the following questions, choose the most correct response and write it in your answer book. e.g. 1=D

1. Which layer of the skin forms fingerprints?
  - A. Stratum lucidum
  - B. Reticular layer
  - C. Basal layer
  - D. Papillary layer
  
2. Apocrine glands are found in which area of the human body?
  - A. Forehead
  - B. Palms
  - C. Axilla
  - D. Ear
  
3. The skin holds how many percent of the body's blood?
  - A. 5%
  - B. 10%
  - C. 20%
  - D. 30%
  
4. The mitochondria are cytoplasmic organelles responsible for the production of.
  - A. Proteins
  - B. Energy
  - C. Phagocytes
  - D. None of the above
  
5. Hydrophilic polar heads are structural parts of which part of the cell?
  - A. Nucleus
  - B. Lysosomes
  - C. Cytoplasm
  - D. Cell membrane
  
6. The sagittal plane divides the body into:-
  - A. Right and left side
  - B. Superior and inferior
  - C. Anterior and posterior
  - D. None of the above

7. What is inflammation of the peritoneum membrane is called?
- A. Peritonitis
  - B. Gastritis
  - C. Pleurisy
  - D. Iritis
8. Which cell protects the body against invasion by microorganisms?
- A. Smooth muscle cells
  - B. Fat cells
  - C. Macrophage cells
  - D. Nerve cells
9. What would happen to a body cell when immersed in a hypertonic solution?
- A. It will shrink
  - B. It will burst
  - C. It will swell
  - D. It will remain the same
10. The following are major regions of the cell except the \_\_\_\_\_
- A. Phospholipids
  - B. Plasma membrane
  - C. Cytoplasm
  - D. Nucleus
11. Sodium dominates in which body fluids?
- A. Both intracellular and extracellular fluid.
  - B. Intracellular fluid
  - C. Extracellular fluid
  - D. urine
12. The sodium potassium pump helps to \_\_\_\_\_
- A. Restore the membrane potential
  - B. Bring the membrane potential to  $-70\text{mV}$
  - C. Eject  $3\text{Na}^+$  and inject  $2\text{K}^-$  into the cell.
  - D. Remove all of the above from the cell
13. The functioning of sodium potassium pump depends on \_\_\_\_\_
- A. Osmosis
  - B. Adenosine triphosphate (ATP)
  - C. Diffusion
  - D. Filtration

14. The following are determinants of skin colour except :-

- A. Melanin
- B. Carotene
- C. Hemoglobin
- D. Jaundice

15. What is the function of the Golgi apparatus?

- A. Demotion crew of the cell
- B. Manufacture the cell membrane
- C. Director of cellular protein traffic
- D. All of the above.

16. Which fiber forms connective tissue?

- A. Elastic fiber
- B. Reticular fiber
- C. Collagen fiber
- D. All of the above

17. Osteoblast are \_\_\_\_\_

- A. Bone forming cells
- B. Cartilage forming cells
- C. Stem cells
- D. Bone destroyers

18. Which of the following tissues has poor regenerative capacity?

- A. Skeletal muscle
- B. Nervous tissue
- C. Cardiac muscle
- D. Epithelial tissue

19. The squamous suture joins which of the b-following bones?

- A. Occipital and parietal bones
- B. Two parietal bones
- C. Temporal and parietal bones
- D. Frontal and parietal bones

20. Second degree burns are \_\_\_\_\_

- A. Less painful than third degree burns
- B. Less painful than first degree burns
- C. The most painful burns
- D. More harmful than third degree burns.

21. The rule of nine is clinically helpful in \_\_\_\_\_
- A. Estimating the seriousness of a fracture
  - B. Estimating the depth of burns
  - C. Estimation the extend of burns
  - D. Estimating fluid lost from burns
22. The epimysium is a membrane that covers the \_\_\_\_\_
- A. muscles
  - B. Bones
  - C. nerves
  - D. Blood vessels
23. The proximal end of the femur forms the \_\_\_\_\_
- A. Shaft
  - B. Diaphysis
  - C. Coxal joint
  - D. Knee joint
24. Which of the following is joined by cartilage and lacks a cavity?
- A. Symphysis
  - B. Suture
  - C. Synchondroses
  - D. Gomphoses
25. Which of the following joints is prone to weeping lubrication?
- A. Elbow joint
  - B. Coxal joint
  - C. Symphysis
  - D. Knee joint

**SECTION 1 B**

**MATCHING:** Choose the most appropriate response in column 2 to the statements in column 1

**COLUMN 1**

1. This bone forms the chin
2. This bone contains the mastoid sinuses
3. The bone we sit on
4. The calcaneus is the largest bone of which group
5. This muscle helps raises eyebrows
6. This muscle extend the elbow
7. This muscle flex the elbow
8. Sight for intracellular digestion
9. Sight for protein synthesis
10. Sight for ATP synthesis

**COLUMN 2**

- A. Triceps brachii
- B. Epicraneum
- C. biceps brachii
- D. Mitochondria
- E. Lysosome
- F. Ribosomes
- G. Ischium
- H. Ethmoid bone
- I. Mandible
- j. Tarsals

## **SECTION 2**

### **SHORT ANSWERS**

#### **QUESTION1**

**Briefly state and describe ten [10] movements allowed by synovial joints?**

**(10 Marks)**

#### **QUESTION 2.**

**Describe the five [5] cardinal signs of the most dangerous skin cancer, melanoma.**

**(10 Marks)**

#### **QUESTION 3.**

**Mr. Zwane was drinking with friends when an argument started over a bottle of beer. Sandile, his quiet friend pulled a knife and stabbed Mr. Zwane on the forearm, he sustained a deep wound and blood was oozing down the arm. Using information learned in your Anatomy and Physiology class; state two {2} types of tissue repair and describe three [3] steps of tissue repair that will occur to heal Mr. Zwane's wound.**

**(10 Marks)**

#### **QUESTION 4.**

**State the tissue or cord responsible for the following.**

- a. Attaching bone to bone**
- b. Attaching muscle to muscle**
- c. Attaching muscle to bone**
- d. Covering blood vessels**
- e. Covering bones**

**(5 Marks)**

#### **QUESTION 5.**

**Briefly discuss the cells responsible for forming structural elements of the connective tissues.**

**(5 Marks)**