

UNIVERSITY OF SWAZILAND
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES
FINAL EXAMINATION
MAY 2015

COURSE CODE: EHM 108
TITLE OF PAPER: PRINCIPLES OF ANATOMY AND PHYSIOLOGY
DURATION: 2 HOURS
MARKS: 75

INSTRUCTIONS

1. THIS PAPER CONSISTS OF TWO (2) SECTIONS: SECTION 1 –OBJECTIVE QUESTIONS AND SECTION 2 – ESSAY QUESTIONS.
2. ANSWER ALL QUESTIONS
3. READ QUESTIONS AND INSTRUCTIONS CAREFULLY.

THIS PAPER IS NOT TO BE OPENED UNTIL THE INVIGILATOR HAS GRANTED PERMISSION.

SECTION 1

Instructions: For each question, choose the most appropriate response and write the question number and the corresponding letter in your answer sheet, in **capital letters**, e.g. **26. B**. Each correct response carries 1 mark.

1. Which of the following types of solutions has the same osmotic pressure as the body fluid?
 - A. Osmosis
 - B. Isotonic
 - C. Hypertonic
 - D. Hypotonic

2. An Oral Rehydration Solution (ORS) is an example of which of the following solutions?
 - A. Osmosis
 - B. Isotonic
 - C. Hypertonic
 - D. Hypotonic

3. A molecular signature that enables cells to recognize one another is called -----
 - A. Glycoprotein
 - B. Glycocalyx
 - C. Glucose
 - D. Glycerimine

4. Which of the following membrane junctions are present in the electrical excitability of the heart?
 - A. Tight junctions
 - B. Desmosomes junctions
 - C. Gap junctions
 - D. Anchoring junctions

5. A neoplasm that does not metastasize such as a wart is called a (n) -----
 - A. Benign tumor
 - B. Malignant tumor
 - C. Anaplasia
 - D. Hyperplasia

6. Which of the following connective tissue cells contain chemicals that mediate an inflammatory response during severe allergies?
- A. Macrophages
 - B. Mast cells
 - C. Adipose cells
 - D. Plasma cells
7. An epidermal cell that function as a sensation of touch is called -----
- A. Keratinocyte
 - B. Melanocyte
 - C. Langerhans cell
 - D. Merkel cell
8. Which of the following cells produce a pigment that contributes to the skin color?
- A. Keratinocytes
 - B. Melanocytes
 - C. Langerhans cells
 - D. Merkel cells
9. An increase in the size of cells without cell division is -----
- A. Metaplasia
 - B. Dysplasia
 - C. Hyperplasia
 - D. Hypertrophy
10. A loss of melanocytes in the epidermis, producing whitened areas of the skin is ----
- A. Vitiligo
 - A. Eczema
 - B. Pruritis
 - C. Keloid
11. Healing of ligaments after an injury is very slow because -----
- A. They are very stiff
 - B. They are innervated
 - C. They have a poor blood supply
 - D. They are located deep down in between joints

12. Which one of the following blood cells is shaped like a biconcave disc and appears lighter in color?

- A. Leukocytes
- B. Erythrocytes
- C. Platelets
- D. Fibrin

13. Which of the following enzymes is **NOT** an intestinal enzyme?

- A. Trypsin
- B. Sucrase
- C. Peptidase
- D. Lactase

Match each of the following hormones with their correct corresponding function e.g 16.A.

NOTE: There is only **one (1)** answer for each question.

Hormone	Function
14 Luteinizing hormone (LH)	A. Contracts muscle in uterine wall during childbirth
15. Oxytocin	B. Stimulates production of sperm cells in males
16. Prolactin	C. Controls secretion of adrenal cortex hormones
17. Growth hormone (GH)	D. Plays a role in releasing an egg cell in females
18. Adrenocorticotrophic hormone (ACTH)	E. Controls metabolism
19. Follicle-stimulating hormone (FSH)	F. Stimulates an increase in size and cell division
20. Thyroid stimulating hormone (TSH)	G. Sustains milk production after birth

Fill in the blanks. In your answer sheet write the correct missing word e.g. 21. Skeletal tissue.

- 21. The -----cartilage looks like a frosted glass when freshly exposed.
- 22. A glittering white, doubled layered covering of a bone is ----- membrane.
- 23. A shaft that forms the long axis of a bone is -----
- 24. A part of a neuron that receives electrochemical messages is-----

25. ----- is a straw colored sticky fluid found in the blood.
26. The pulmonary and aortic valves are known as -----valves.
27. A lymphoid organ that provides a site for lymphocyte proliferation and immune surveillance and response is the -----
28. The teeth that are best adapted for grasping and tearing foods are -----
29. A structural and functional unit of a kidney is -----
30. The type of epithelial cell that is examined during a Pap smear test is ----- epithelium.

Total: 30 Marks

Section 2

Instructions: Each point carries 1 mark

Question 1

- A. Define plasma membrane and explain its two major functions. (4)
- B. Differentiate with the aid of examples between apoptosis and necrosis. (4)
- C. Discuss any three (3) survival needs of a body system. (6)

Question 2

- A. State the three (3) layers of the adrenal cortex and explain their functions. (6)
- B. Describe the mechanism of mastication (chewing) and deglutition (swallowing). (10)

Question 3

- A. Describe the events that happen when a chemical synapse transmits a signal/information from one neuron to another using neurotransmitters. (15)

Total: 45 Marks