



# MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

FIRST YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (PUBLIC HEALTH)

HPH101: HUMAN ANATOMY AND PHYSIOLOGY I

**DATE: 11/8/2021**

**TIME: 8:30 – 10:30 AM**

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**Instructions:**

This paper consists of two sections A and B

**SECTION A**

- This section has one question
- The question is compulsory
- The question is 30 marks

**SECTION A: COMPULSORY**

**QUESTION ONE (30 MARKS)**

- Outline the organization of the nervous system (3 marks)
- Outline four (4) temporary structures in fetal circulation (2 marks)
- Explain the functions of the cytoplasm in a cell. (3 marks)
- Briefly describe functions of connective tissue (2 marks)
- Explain the functions of three (3) interdependent components of homeostatic control. (3 marks)

- f) Differentiate between cardiac muscles cells and skeletal muscle cell (3 marks)
- g) Compare and contrast transmission of a nerve impulse in myelinated and unmyelinated fibres. (3 marks)
- h) Explain the functions of blood (3 marks)
- i) Using a flow chart, illustrate the activation process of renin, angiotensin, aldosterone system (RAAS) in regulation of blood pressure (4 marks)
- j) Explain factors that affect heart rate delay the healing of fractures (4 marks)

### **SECTION B:**

- This section has four (4) questions
- Answer any two (2) questions
- Each question is 20 marks

### **QUESTION TWO (20 MARKS)**

- a) Describe the physiology of sight. (10 marks)
- b) Discuss the cell cycle in reproductive cells. (10 marks)

### **QUESTION THREE (20 MARKS)**

- a) With the aid of a diagram describe the conducting system of the heart. (10 marks)
- b) Describe the process of bone healing. (10 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Using relevant examples, describe movement of substances across the cell membrane. (10 marks)
- b) Describe the circulation of lymph in the human body (10 marks)

### **QUESTION FIVE (20 MARKS)**

- a) With the aid of a well labelled diagram of the skin, describe the layers of the epidermis of the skin. (12 marks)
- b) Describe the main nonspecific body defense mechanisms (8 marks)