



# **MACHAKOS UNIVERSITY**

**University Examinations 2019/2020 Academic year**

**SCHOOL OF HEALTH SCIENCES**

**DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH**

**FIRST YEAR SPECIAL /SUPPLEMENTARY EXAMINATION FOR**

**BACHELOR OF SCIENCE IN POPULATION HEALTH.**

**PPH 116: HUMAN ANATOMY AND PHYSIOLOGY**

**DATE:19/01/2021**

**TIME: 2.00-4.00 PM**

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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)**

- Explain the roles of three hormones from the adrenal cortex (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)
- Differentiate between cardiac muscles cells and skeletal muscle cell (3 marks)
- Compare and contrast transmission of a nerve impulse in myelinated and unmyelinated fibres. (3 marks)
- Explain the functions of kidneys (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 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 hearing (8 marks)
- b) Discuss the cell cycle in reproductive cells (12 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 urine formation (10 marks)

**QUESTION FOUR (20 MARKS)**

- a) Using relevant examples, describe movement of substances across the cell membrane. (10 marks)
- b) Describe the menstrual cycle. (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)