



# **MACHAKOS UNIVERSITY**

**University Examinations 2019/2020 Academic year**

**SCHOOL OF HEALTH SCIENCES**

**DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH**

**SECOND YEAR SPECIAL /SUPPLEMENTARY EXAMINATION FOR**

**BACHELOR OF SCIENCE IN POPULATION HEALTH.**

**PPH 221: IMMUNOLOGY OF ENVIRONMENTAL HEALTH DISEASES**

**DATE: 19/01/2021**

**TIME: 8.30-10.30 AM**

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## **INSTRUCTIONS**

This paper consists of two sections A and B

### **Section A**

#### **Specific instructions**

- **This section has one question**
- **This question is COMPULSORY**
- **The question is 30 marks**

### **QUESTION ONE (30 MARKS)**

- a) Define the following terminologies (3 marks)
- Immunology
  - Immune system
  - Antibody
- b) Identify three (3) types of granular leukocytes and their functions (3 marks)
- c) Identify three characteristics of inflammation during injury (3 marks)
- d) Briefly explain the functions of the Dendritic cells (3 marks)
- e) Explain Complement activation of C1 during an immune response (3 marks)
- f) Differentiate between Innate (natural) and Acquired (Adoptive) immunity (3 marks)
- g) Briefly describe the environmental factors effects on hypersensitivity (3 marks)
- h) Explain the importance of Active Phase Protein (APP) during an infection (3 marks)

- i) Explain how rhesus incompatibility occurs during blood transfusion (3 marks)
- j) State ways in which one can boost immunity of children and the aged (3 marks)

## **SECTION B:**

### **Specific instructions**

**This section has four (4) questions**

**Answer any two (2) questions**

**Each question is 20 marks**

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

- a) Discuss the cell mediated and humoral immunity (10 marks)
- b) Describe the steps in phagocytosis process (10 marks)

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

- a) Mike was attacked by a swarm of bees and developed severe swelling on his face. Giving examples of describe the four (4) types of hypersensitivity (10 marks)
- b) Describe in details functions of the organs of the immune system (10 marks)

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

- a) Mr.Manasse has been diagnosed with Systemic Lupus Erythromatosus
  - i. Describe the signs and symptoms which Mr.Manasse will present with (6 marks)
  - ii. Briefly explain how you would manage Mr. Manasse's condition (4 marks)
- b) Describe the causes of secondary immune deficiencies (10 marks)

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

- a) Mary a public health officer noted that some unvaccinated children living in Kwao Estate were not suffering Measles infection despite not having been vaccinated. In reference to this statement explain how you would conduct a mass vaccination exercise and the importance of herd immunity to the government and the community (10 marks)
- b) Describe the characteristics of reticulo-endothelial cells (10 marks)