

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2019/2020**

**THIRD YEAR THIRD SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN PHYSIOTHERAPY**

**IPH 2304: PRINCIPLES OF IMMUNOLOGY**

**DATE: DECEMBER, 2019 TIME: 2 HOURS**

INSTRUCTION: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

**QUESTION ONE: 30 MARKS**

a. Define the following terminologies:-

 i. Apoptosis. (2 marks)

 ii. Phagocytosis. (2 marks)

 iii. Immunity. (2 marks)

b. Using an illustration, describe the structure of immunoglobulins.

(6 marks)

c. Describe the various factors that influence immunogenicity. (6 marks)

d. Outline the characteristics of innate immunity. (6 marks)

e. Briefly describe the four main types of vaccines. (6 marks)

**QUESTION TWO: 20 MARKS**

Discuss the secondary lymphoid organs.

**QUESTION THREE: 20 MARKS**

Discuss the components of innate and adaptive immunity.

**QUESTION FOUR: 20 MARKS**

Discuss the various types of antibodies.