



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

**END OF SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE
OF BACHELOR OF MEDICINE AND SURGERY [MBCHB]
THIRD SEMESTER 2021/2022
[JUNE-SEPTEMBER, 2022]**

MEDS 221: IMMUNOLOGY (PAPER 2)

STREAM: Y2S3

TIME: 3 HOURS

DAY: THURSSDAY, 9:00 -12:00 PM

DATE: 08/09/2022

INSTRUCTIONS

1. Do not write anything on this question paper.

- (i) This paper has sections two sections: A and B
- (ii) Answer all questions in section A and any 3 in section B
- (iii) Write the answers to sections: A and B in the answer sheet provided.
- (iv) Write your answers in clear handwriting.

SECTION A: STRUCTURED QUESTION (60 MARKS)

1. What is the main difference between?
 - a) Passive artificial and active natural immunity. **(2 marks each).**
 - b) Primary and secondary lymphoid organs **(2 marks each).**
 - c) Pathogen-associated molecular patterns (PAMPs) and pathogen recognition receptors (PRRs). **(2 marks each).**
 - d) Alternative and lectin complement pathways. **(2 marks each).**
 - e) Cell mediated immunity and humoral immunity **(2 marks each).**
2. Identify the type of Immunoglobulin that best fits the description given. **(1 mark each)**
 - a) Exists in serum in both monomeric and multimeric forms
 - b) Exists predominantly as B cell membrane bound form
 - c) Predominant Immunoglobulin in primary responses
 - d) Has a J and S chain as part of its structure
 - e) Is released in response to helminth infections

3. Explain the events leading to antigen presentation on MHC-II. (4 marks)
4. List the 4 key characteristics of an acquired (adaptive) immune response. (4 marks).
5. Describe primitive hematopoiesis. (5marks)
6. State the functions of macrophages in immunity. (5 marks)
7. What are the principles behind microbial antagonism in immunity? (3marks)
8. List **five** steps in phagocytosis (5marks)
9. State unique features of immunoglobulin gamma (IgG). (5marks)
10. In reference to immune privilege sites,
 - a) State the meaning of term immune privilege (1mark)
 - b) State 3 organs in human body which experience immune privilege. (3 Marks)
11. Antigen-antibody interactions are crucial in immunity.
 - a) State three characteristics of antigen-antibody interactions (3 marks)
 - b) List three outcomes of antigen-antibody interactions in immunity (3 marks)
12. State 4 functions of macrophages in immunity. (4 marks)

SECTION B: ESSAY QUESTION (60 MARKS)

Instructions: This section consists of four questions, answer any THREE questions.

1. Describe inflammation in immune defence under the following.
 - a) Inflammation as a process (15marks)
 - b) Importance of inflammation in defence (5marks)
2. Outline how the classical complement pathway can be termed as.
 - a) Immune cascade pathway (15marks)
 - b) “Results to diversified outcome” in its immune function (5marks).
3. Discuss Thymic function in,
 - a) T cell Maturation and differentiation to different subsets (15 marks)
 - b) Central tolerance (5 marks)
4. Describe the following;
 - a) Properties of antigen antibody reactions (12 marks)
 - b) Types of Antigen-antibody reactions and relate these to consequences in immunity (8marks)