



MACHAKOS UNIVERSITY

UNIVERSITY EXAMINATIONS FOR 2018/2019 ACADEMIC YEAR

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

YEAR 2018

FIRST SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN BIOLOGY

CODE 407 **UNIT NAME—ADVANCE IMMUNOLOGY-----**

DATE----- TIME -----

Instructions

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A

Question 1. – What are phagocytes and name any two phagocytes that you know (3marks)

Questions 2. – What are stem cells and Name any two types of committed stem cells (3marks)

Question 3. – Describe briefly a stepwise Mechanisms of helper T cell-mediated activation of B lymphocytes (3marks)

Question 4. Define and state the functions of the helper T cells and the suppressor T cells (3marks)

Question 5. – The the four factors/basis that can help to differentiate the humans immunoglobulins? (3marks)

Question 6. - Draw and label the basic structure of an Immunoglobulin (3marks)

Question 7. - Name the cations and the immunoglobulins required in the classical complement pathway (3marks)

Question 8. – List any SUBSTANCES that can initiate complement activation pathway (3marks)



Question 9. Briefly describe how tumor cells loss antigen presentation capacity (3marks)

Question 10.- Describe at least 6 characteristics of allergens (3marks).

SECTION B

Questions 11.

Discuss with the help of a diagram the steps that leads to the production of the high affinity B cells and the long-lived plasma cells in the germinal center of the human tonsils (20 marks).

Questions 12.

Describe in details the structural characteristics and functions of the following antibodies a) IgM b) IgG and c) IgA (20 marks)

Questions 13.

Leucocyte is one of the cells that is recruited to the site of inflammations with the help of cytokines. Discuss the process in details that lead to the recruitments to the site of injury (20 Marks).