**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya.**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@mucst.ac.ke**

**University Examinations 2015/2016**

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN PUBLIC HEALTH

**HPP 3302: PRINCIPLES OF IMMUNOLOGY**

 **DATE: NOVEMBER 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Give a brief description of the following terms used in immunological studies:
2. Antigen. (2 Marks)
3. Immunoglobulin. (2 Marks)
4. Immunization. (2 Marks)
5. Immunogenesity. (2 Marks)
6. Antigenesity. (2 Marks)
7. Briefly describe three types of Autoimmune diseases. (6 Marks)
8. Describe three factors that make an antigen immunogenic. (6 Marks)
9. Using a sketch give a brief description of the general structure of an antibody. (8 Marks)

**QUESTION TWO (20 MARKS)**

Discuss the full process of phagocytosis from phagocyte encountering the antigen to the killing of the antigen. (20 Marks)

**QUESTION THREE (20 MARKS)**

Discuss the innate immune response in reference to the following sub-headings:

1. The physical/mechanical factors. (5 Marks)
2. The chemical factors. (5 Marks)
3. The genetic factors. (5 Marks)
4. The cellular factors. (5 Marks)

**QUESTION FOUR (20 MARKS)**

Dorothy is blood group A negative (A-ve). She got married to Dick whose blood group is AB positive (AB +ve). The two had their first born child without any problems.

Trouble came during the second pregnancy and the other subsequent pregnancies since Dorothy’s pregnancies always resulted in still births. Discuss. (20 Marks)