



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER**

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT
BACHELOR OF SCIENCE IN ANIMAL HEALTH
AND PRODUCTION**

**COURSE CODE: AHP 3102
COURSE TITLE: IMMUNOLOGY**

DATE: 11TH DECEMBER 2018

TIME: 0830 - 1030 HRS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions

This paper consists of 2 printed pages. Please turn over

VETERINARY IMMUNOLOGY [100 MARKS]

1. The Immune system is functionally divided into the Acquired/Adaptive and Innate Immune system.
 - a. Outline five characteristics of the innate immune system. **[10 Marks]**
 - b. Describe five characteristics of the adaptive immune system. **[10 Marks]**

2.
 - a. Outline five physical barriers to infection. **[10 Marks]**
 - b. Describe five soluble factors that play a role in the innate immune system. **[10 Marks]**

3.
 - a. State five factors that determine the magnitude of immune response to a foreign substance. **[5 Marks]**
 - b. Explain '*Tolerance*' in the context of immune response. **[5 Marks]**

4.
 - a. Outline three immunopathological events that may lead to an autoimmune disease. **[6 Marks]**
 - b. Give the four types of hypersensitivity reactions. **[4 Marks]**

5.
 - a. State five white blood cells [leukocytes] involved in the innate immune response. **[5 Marks]**
 - b. Explain five functions of Complements. **[10 Marks]**

6.
 - a. Name five types of vaccines. **[5 Marks]**
 - b. Highlight five benefits of vaccinating animals. **[10 Marks]**
 - c. Name ten animal diseases that are commonly vaccinated against. **[10 Marks]**

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VETERINARY IMMUNOLOGY [100 MARKS]

1. Explain the components of the innate immune system. **[20 Marks]**
2. Discuss the components of the adaptive immune system. **[20 Marks]**
3. Describe how a T- cell meets its antigen. **[20 Marks]**
4. Highlight the properties of an ideal vaccine. **[20 Marks]**
5. Discuss the importance of veterinary vaccines. **[20 Marks]**