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MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)
SCHOOL OF AGRICULTURE, VETERINARY SCIENCES AND TECHNOLOGY (SAVET)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
THIRD YEAR FIRST SEMESTER 2023/2024 ACADEMIC YEAR

MAIN EXAM
OF
BACHELOR OF SCIENCE IN ANIMAL PRODUCTION

COURSE CODE: AAH 303

COURSE TITLE: PRINCIPLES OF EPIDEMIOLOGY AND IMMUNOLOGY

DATE: 5.12.23 **TIME: 12-2PM**

INSTRUCTIONS TO CANDIDATES

This paper is divided into two sections, **A and B**. Answer ALL Questions in SECTION A and any Two in SECTION B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over

SECTION A (Answer ALL questions in this section)

Q1. Measures of disease burden typically describe illness and death outcomes as morbidity and mortality respectively. Explain these terms

i) Morbidity **(2mks)**
ii) Mortality **(2mks)**
iii) Case fatality rate **(2mks)**

Q2. Different between passive surveillance and active surveillance **(6mks)**

Q3. Define the term **bias** and describe the **two main** types of bias in descriptive epidemiology **(6mks)**

Q4. Explain the following epidemiological terminologies;

a) Case reports **(2mks)**
b) Case series **(2mks)**
c) Cross-sectional studies **(2mks)**

Q5. Explain the term cell-mediated immunity **(4mks)**

Q6. Distinguish between natural active acquired immunity and artificial active acquired immunity **(6mks)**

Q7. Define the following terms **(6mks)**

i) Antibody
ii) Antigen
iii) Seroconversion

SECTIN B (Answer ANY two questions)

Q8. A veterinary practice in Kakamega county frequently sees calves with colibacillosis. The practice diagnosed 542 clinical cases in a particular year, 83 of which died from the disease in the course of that year. The month in which the most cases were diagnosed was July, in which 97 cases were diagnosed. Further, at a single point in time (perhaps based on the results of a serosurvey of calves in the practice area), 237 calves of 6,821 calves with active records in the practice had the disease. In this scenario, determine;

i) The prevalence of colibacillosis at the time of the serosurvey **(5mks)**

ii) The incidence count in July **(5mks)**

iii) The incidence rate **(5mks)**

iv) The annual mortality rate observed in that practice due to colibacillosis **(5mks)**

v) The case fatality rate. **(5mks)**

Q9. Discuss cohort studies **(15mks)**

Q10. Write notes on adjuvants **(15mks)**

Q11. Discuss the four principal characteristics of the immune system **(15mks)**