

CHUKA



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UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF CERTIFICATE IN ANIMAL HEALTH AND PRODUCTION

ANHE 00124: BASIC IMMUNOLOGY & VACCINES

STREAMS:

TIME:2 HOURS

DAY/DATE: THURSDAY 13/04/2023

11.30 A.M. –1.30 P.M.

INSTRUCTIONS

Answer ALL Questions in Section A and any TWO in Section B
DO NOT WRITE anything on the question paper

SECTION A: ATTEMPT ALL QUESTIONS (40 MARKS)

QUESTION ONE

- a) Define the following terms
 - i. Antibody (2 marks)
 - ii. Antigen (2 marks)
 - iii. Adjuvant (2 marks)
 - iv. Vaccine (2 marks)
- b) List three types of antigen-antibody reactions (3 marks)
- c) State (4) benefits of vaccinating animals (4 marks)
- d) Highlight five (5) functions of immune system (5 marks)
- e) List three (3) types of phagocytic cells of the immune system (3 marks)
- f) Highlight ways on how passive acquired immunity is achieved in the host (4 marks)
- g) List five (5) major types of antibodies involved in humoral immunity (5 marks)
- h) Classify vaccines according to method of storage (3 marks)
- i) Outline three (3) characteristics of adaptive/acquired immunity (3 marks)
- j) State the primary lymphoid organs in animals (2 marks)

SECTION B: ATTEMPT ANY 2 QUESTIONS (30 MARKS)

QUESTION TWO

- a) Describe the mechanisms of the first line of defence in animals (7 marks)
- b) Discuss four (4) factors affecting immunity (8 marks)

QUESTION THREE

You are deployed as the senior animal health officer in Chuka South subcounty in Tharaka Nithi County. In January this year, you conducted mass vaccination of livestock against foot and mouth disease. Vaccination coverage was over 90%. Two months later, over 20 farms reports outbreak of foot and mouth disease, this is despite having vaccinated their animals. As the officer in charge, you have been summoned by the Sub-county administrator to give a brief report addressing;

- a) Three (3) types of vaccination practices (3 marks)
- b) Possible causes of vaccine failure under the following sub-headings.
 - i. Vaccine factors (4 marks)
 - ii. Animal factors (4 marks)
 - iii. Factors associated with handling of vaccine (vaccinator factors) (4 marks)

QUESTION FOUR

- a) Discuss the following humoral response during infection;
 - i. Primary immune response (4 marks)
 - ii. Secondary immune response (4 marks)
 - b) Discuss the mechanisms of the second line of defence (7 marks)
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