



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS
FIRST YEAR EXAMINATION FOR THE AWARD OF THE
DIPLOMA IN ANIMAL HEALTH /ANIMAL SCIENCE
FIRST SEMESTER 2022/2023
(SEPTEMBER - DECEMBER, 2022)

ANHE 0212 MICROBIOLOGY

STREAM: Y1 S1

TIME: 2 HOURS

DAY: THURSDAY, 9:00 A.M – 11:00 A.M

DATE: 15/12/2022

INSTRUCTIONS:

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Questions in section A (Compulsory) and any other TWO Questions in section B.***

SECTION A

1. a) Define the following terms:

- | | |
|------------------------|----------|
| i. Exotoxin | (1marks) |
| ii. Endotoxin | (1marks) |
| iii. Bacteria culture | (1marks) |
| iv. Mordant | (1marks) |
| v. Enrichment media | (1marks) |
| vi. Differential media | (1marks) |

b) With the aid of a diagram draw the morphological structure of the following bacteria:

- | | |
|-----------------------------------|------------|
| i. <i>Streptococcus agalactae</i> | (2 marks) |
| ii. <i>Bacillus anthracis</i> | (2 marks) |
| iii. <i>Clostridium tetani</i> | (2 marks) |
| iv. <i>Staphylococcus aureus</i> | (2marks) |

c) State two bacteria that produce a capsule. (2 marks)

d) State three cases where a dark field microscopy may be used. (3 marks)

2. a) Differentiate between Gram positive and Gram negative bacteria. (2marks)
- b) Bacteria occur in different groups according to the position of their flagella. Name the six groups. (6 marks)
- c) State five bacteria that produce spores. (5 marks)
3. a) State four family of viruses. (2 marks)
- b) Give two examples of fungi. (2 marks)
- c) State the importance of fungal and bacterial endospores (2 marks)
4. Describe the viable counting technique as a method of counting bacteria. (8 marks)

SECTION B

4. A case of a cow producing yellowish milk that is blood tinged, you as the laboratory technologist, state your general tentative diagnosis and explain in detail how you would come up with your definitive diagnosis and specific treatment for the case. (15 marks)
5. Describe the acid fast staining technique and its interpretation (15 marks)
6. Classify viruses and state the diseases caused by the different viruses of veterinary importance. (15 marks)