



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF
BACHELOR OF SCIENCE IN LABORATORY SCIENCE TECHNOLOGY
FIRST SEMESTER 2022/2023
[SEPTEMBER-DECEMBER, 2022]**

BMIC 305: BACTERIOLOGY

STREAM: Y3S1

TIME: 2 HOURS

DAY: TUESDAY, 9:00 – 11:00 AM

DATE: 13/12/2022

INSTRUCTIONS

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Question in Section A and any TWO Questions in Section B.***

SECTION A:

Answer ALL questions (40 Marks)

1. a) Describe the 4 stages of a bacterial growth curve of a population of bacterial with an aid of a diagram. (5 Marks)

b) State and explain two factors governing growth of bacteria. (2 Marks)
2. A stagnant pond has a putrid odor because hydrogen sulfide has accumulated in the water. A microbiologist suggests adding tons of green sulfur bacteria to remove the smell. What chemical process does the microbiologist have in mind? do you think it will work? (3 Marks)
3. Write short on transformation. (3 Marks)
4. Differentiate between gram positive and gram negative bacteria. (3 Marks)
5. a) Define Botulism and identify the causative agent. (3 Marks)

b) Why is the botulism toxin considered so powerful than one pint of the pure material could eliminate the entire population? (3 Marks)

6. a) Urinary tract infection are more common in women. State the 4 bacterial pathogens responsible for UTIs. (2 Marks)
- b) Which class of antibiotics should be administered for treatment and why. (3 Marks)
7. a) Differentiate between endotoxins and Exotoxins with suitable examples. (6 Marks)
8. a) What's the significance of bacterial endospores? (3 Marks)
- b) Which method would you use to eliminate them and why. (2 Marks)
- c) Is boiling of water effective? if so how long and at what temperature should boiling be effective? (2 Marks)