



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
EDUCATION SCIENCE WITH IT
THIRD YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: SBT 303
COURSE TITLE: GENERAL MICROBIOLOGY
EXAM VENUE: STREAM: (BEd. Sc)
DATE: EXAM SESSION:
TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two questions in Section B**
 - 2. Candidates are advised not to write on question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. State three applications of microbiology in agriculture (3 marks)
2. Distinguish between lophotrichous and amphitrichous flagellation in bacteria (3 Marks)
3. Explain the functions of the following components of the bacterial structure
 - i) Pili (1 mark)
 - ii) Fimbriae (1 Mark)
 - iii) Plasmid (1 Mark)
4. Use appropriate diagrams to distinguish between three forms of viral capsids (3 Marks)
5. Outline the procedure for differentiating gram positive from gram negative bacteria (3 Marks)
6. State three adaptations of bacteria to temperature requirements (3 Marks)
7. State three differences between Sarcodina and Ciliophora classes of Protozoa (3 Marks)
8. Explain the following techniques of culturing microbes
 - i) Pour plate (1½ Marks)
 - ii) Streak plate (1½ Marks)
9. State three differences in cell wall structure of Gram positive and Gram negative bacteria (3 Marks)
10. Name the selective agent in the following microbiological culture media
 - i) McConkey agar (1 Mark)
 - ii) Lowenstein-Jensen agar (1 Mark)
 - iii) Sabourauds' agar (1 Mark)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss replication and multiplication in bacteriophage viruses (20 marks)
12. Describe the different classes of microbiological culture media (20 Marks)
13. Discuss the physical and chemical agents of microbial control (20 Marks)
14. Discuss microbial growth in a batch culture of nutrients (20 marks)