



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF BIOLOGICAL, PHYSICAL, MATHEMATICS AND ACTUARIAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
SCIENCE
3rdYEAR 1st SEMESTER 2022/2023 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: SPB9301
COURSE TITLE: GENERAL MICROBIOLOGY
EXAM VENUE: LAB 11/12 STREAM: (BED.SC)
DATE: 15/12/2022 EXAM SESSION: 9.00-11.00AM
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 the contribution of the following to the field of microbiology (3marks)
 - i. Theodore Schwann
 - ii. Francisco Redi
 - iii. Lazaro Spallanzi
2. Outline the germ theory of disease occurrence as outlined by Robert Koch (3marks)
3. Use examples to explain the application of microbiology in the following fields (3 marks)
 - i. Bioremediation
 - ii. Biomining
 - iii. Biobased products
4. Classify bacteria based on their temperature requirements (3marks)
5. State three functions of viral capsids (3marks)
6. Use diagrams to distinguish between three types of ascocarps in fungi (3 marks)
7. List six distinguishing characteristics of division *Rhodophyta* algae (3 marks)
8. State three differences between *Ciliophora* and *Sarcodina* classes of protozoa (3marks)
9. Distinguish between simple and differential staining (3marks)
10. Compare and contrast agar with gelatin as solidifying agents of microbiological culture media (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss the economic importance of microorganisms (20 marks)
12. Discuss chemical agents of microbial control (20 marks)
13. Describe different stages of growth of a bacterial batch culture (20 marks)
14. Discuss the techniques for cultivating viruses (20 marks)