JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL, PHYSICAL, MATHEMATICS AND ACTURIAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

3rd YEAR 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**

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 theapplication 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*in 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. Discusschemical agents of microbial control   (20 marks)

13. Describe different stages of growth of a bacterial batch culture   (20 marks)

14. Discussthe techniques for cultivating viruses   (20 marks)