



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
(SCIENCE)
2ND YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR
MAIN

COURSE CODE: SBI 3211

COURSE TITLE: BASIC MICRO BIOLOGY

EXAM VENUE: LR 4

STREAM: (Biological Sciences)

DATE: 17/04/14

EXAM SESSION: 11.30 – 1.30 PM

TIME: 2.00 HOURS

Instructions:

- 1. Answer ALL Questions in Section A and ANY other 2 questions in Section B**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A

- 1) Describe the nucleoid with respect to structure and function . (3 Marks)
- 2) With the help of a labeled diagram, describe a bacterial endospore . (3 Marks)
- 3) Explain how a pure culture can be prepared directly from a mixed broth or a mixed agar slant culture. (3 Marks)
- 4) Which is the most crucial step in a gram staining procedure? Explain. (3 Marks).
- 5) Explain how binding protein transport systems and membrane bound transport systems differ in terms of energy sources. (3 Marks)
- 6) Describe lysogeny and its significance. (3 Marks)
- 7) Define phylogenetic tree. Distinguish between rooted and unrooted tree. (3 Marks)
- 8) With specific examples, describe three major ways in which bacteria become resistant to antibiotics. (3 Marks)
- 9) Classify bacteria according to oxygen demand. Explain its effect in each group. (3 Marks)
- 10) Explain the following microbial processes: (3 Marks)
 - a) Competition exclusion principle
 - b) Proto-cooperation
 - c) Continuous culture

SECTION B ESSAYS (40 MARKS) 70 MINUTES

- 11) Write an essay on bacterial cell walls . (20 Marks)
- 12) Chemical methods can be used to control microorganisms, discuss this statement. (20 Marks)
- 13) With a specific example write an essay on the replication and transcription in RNA viruses . (20 Marks)
- 14) Discuss the effect of temperature on bacterial survival in the environment. (20 Marks)