



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE
AND TECHNOLOGY**

UNIVERSITY EXAMINATION 2012/2013

**1ST YEAR 2ND SEMESTER EXAMINATION FOR THE
DEGREE OF BACHELOR OF EDUCATION SCIENCE WITH
IT (SCHOOL BASED)**

MAIN

COURSE CODE: SBT 303

TITLE: GENERAL MICROBIOLOGY

DATE: 29/4/2013

TIME: 14.00-16.00PM

DURATION: 2HOURS

INSTRUCTIONS

- 1) This paper contains FIVE [5] questions.**
- 2) Answer question ONE [1] COMPULSORY and ANY other TWO [2] questions.**
- 3) Write ALL answers in the booklet provided.**

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION(30MARKS.)

- 1) Define the following terms in microscopy:
 - a) Refraction
 - b) refractive index
 - c) focal point (3marks)
- 2) Plasmids are important elements to bacteria, briefly discuss this statement. (3marks)
- 3) Give an account on a continuous culture of microorganisms. (3marks)
- 4) Outline the effect of temperature on the growth of microorganisms. (3marks)
- 5) Describe the following transport processes:
 - a) active transport
 - b) group translocation. (3marks)
- 6) Describe sporogenesis in spore forming bacteria. (3marks)
- 7) Write short notes on the following ecological terms:
 - a) Competition
 - b) commensalism
 - c) mutualism.
- 8) Outline a procedure for gram staining in bacteriology. (3marks)
- 9) Write short notes on proteo-bacteria. (3marks)
- 10) Give an account of lytic life cycle of coli-phages T2. (3marks)

SECTION B: ESSAYS , ANSWER ANY TWO QUESTIONS IN THIS SECTION (40MARKS)

- 11) Write an essay on the amino-glycoside antibiotics. (20marks)
- 12) Discuss the role of genetics in bacterial classification. (20marks)
- 13) Write an essay on the plasma membrane. (20marks)
- 14) Biological Nitrogen Fixation (BNF) in legumes is important for their establishment in the environment. Discuss this statement. (20marks)