



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF HEALTH SCIENCES**

**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE
PUBLIC HEALTH / COMMUNITY HEALTH AND DEVELOPMENT**

2ND YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR

KISII

COURSE CODE: SBI 3211

COURSE TITLE: BASIC MICROBIOLOGY

EXAM VENUE: STREAM: (BSc. P. Health / Comm Hlth & Dev)

DATE: EXAM SESSION: AUGUST 2016

TIME: 2.00 HOURS

Instructions:

- 1. Answer all the 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: ANSWER ALL QUESTIONS

1. Explain the main distinguishing feature of Eukaryotic and Prokaryotic cells and give examples of microorganisms that fall into the two categories (3 marks)
2. Compare and contrast flagella, fimbriae and pili (3 marks)
3. Briefly explain the following ecological relationships
 - a.) Commensalism (1 mark)
 - b.) Mutualism (1 mark)
 - c.) Parasitism (1 mark)
4. State four Koch's postulates about disease agents in relation to diseases (4 marks)
5. Briefly describe four functional categories of culture media used in microbiology (4 marks)
6. Explain briefly three defining characteristics of fungi (3 marks)
7. Explain the difference in mechanism of killing microorganisms using dry heat and moist heat and give an example of each method (4 marks)
8. Contrast normal flora and transient flora with opportunistic microorganisms (3 marks)
9. Classify microbes into three groups on the basis of preferred temperature range (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS

1. Using the bacterial growth curve, describe the phases of microbial growth (20 marks)
2. a. Contrast between the gram positive and the gram negative bacteria cell walls (4 marks)
b. State the principle of the gram staining procedure outlining the process and the expected results (16 marks)
3. Discuss five modes of action of antimicrobial drugs, citing examples (20 marks)
4. a. Using a well labelled diagram, illustrate the structure of a bacteriophage.(5 marks)
b. Discuss the process of viral replication (15 marks)