



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

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

**2<sup>nd</sup> YEAR 2<sup>nd</sup> SEMESTER 2016/2017 ACADEMIC YEAR**

**KISII CAMPUS – PART TIME**

---

**COURSE CODE: HCD 3226**

**COURSE TITLE: MEDICAL BACTERIOLOGY**

**EXAM VENUE:LR 18                      STREAM: (BSc. P. Health / Comm Hlth & Dev)**

**DATE: 16/12/16                      EXAM SESSION: 2.00 – 4.00 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 (30 marks) Answer all questions in this section**

1. Explain any six adaptive features of a bacterial capsule (3mks)
2. Briefly explain the process and application of Ziehl - Neelsen technique of staining. (3mks)
3. a) Briefly explain the activities during lag and log phase of bacterial growth. (2mks)  
b). Explain the role of bacterial biofilm in medical bacteriology (1mk)
4. Illustrate bacterial flagella arrangement stating their medical importance (3mks)
5. Explain the role of bacterial plasmids and how their mobility is effected . (3mks)
6. Identify and describe the three forms of culture media. (3mks)
7. Briefly describe three factors that contribute to bacterial virulence (3mks)
8. Identify six antigenic structures of bacteria. (3mks)
9. Explain six ways of bacteria classification based on their morphology (3mks)
10. Distinguish between the following terms as used in medical bacteriology:
  - a)Pathogenicity and infectivity (1mks)
  - b)Sterilization and disinfection (1mks)
  - c)Explain the difference between gram positive and gram negative bacteria (1mk)

**SECTION B (40 Marks)**

**Answer any two Questions**

1. Discuss five possible mechanisms of antibiotic resistance in bacterial survival (20mks)
2. Discuss five ways of reducing virulence in bacteria (20mks)
3. Discuss five factors influencing bacterial growth in vitro. (20mks)
4. Describe any five Mechanisms of bacterial pathogenesis (20mks)