



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

UNIVERSITY EXAMINATIONS 2012/2013

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR
THE DEGREE OF BACHELOR OF SCIENCE IN COMMUNITY
HEALTH AND DEVELOPMENT & BACHELOR OF SCIENCE
IN PUBLIC HEALTH**

(BUSIA LEARNING CENTRE)

COURSE CODE: HCD 3226

COURSE TITLE: INTRODUCTION TO MEDICAL BACTERIOLOGY.

DATE: 20/4/2013

TIME: 9.00-11.00AM

INSTRUCTIONS

1. This paper contains TWO sections.
2. Answer ALL questions in section A (Compulsory) and ANY other Two questions in section B.
3. Write all answers in the booklet provided.

Answer ALL questions in Section A and ANY TWO questions in Section B

1. List at least three basic functions of the Bacteria cell-wall (**3 marks**).
2. Define fever. What is its functions in relation to a bacterial infection (**3 marks**)
3. *Escherichia coli* are generally found as commensals in the intestine of ruminants. The disease causing variant is O157:H7 serotype. (a) What is the meaning of O and H. (b) Name the specific antigen involved (c) Why is it that the toxin does not cause disease in ruminants? (**3 marks**).
4. Cholera is a dilapidating disease that is strongly associated with brackish salty water. Name the specific etiological agent and the two sero-groups, which cause outbreaks of cholera (**3 marks**).
5. *Helicobacter pylori* is a bacterium generally found in the acidic mammalian stomachs. Individuals harboring the bacteria can develop peptic ulcers. What is the mode of transmission of *H.pylori*, and how is the infection treated (**3 marks**).
6. Describe the causal agent of tetanus. What is the mode of transmission and prevention of tetanus? (**3 marks**).
7. Fluoride is a general microbial agent used in dentistry against. Name the bacteria that are commonly associated with dental caries. List two functions of fluoride in the mouth that help in the control of oral cavities. (**3 marks**).
8. *Streptomyces/Streptomyces* are characterized by complex secondary metabolism and are used in the production of antibiotics. Name one specific bacterium found in this genus and the specific antibiotic it produces (**3 marks**).
9. Name three mechanisms by which bacteria exhibit resistance to antibiotics (**3 marks**)
10. List three ways in which beta lactam antibiotics causes damage to bacterial cell (**3 marks**).

SECTION 2. ANSWER ANY TWO QUESTIONS (40 marks)

1. Define Brucellosis. How is this infection transmitted to man? Describe the signs and symptoms of brucellosis and the treatment.(**20 marks**)
2. Write short notes explaining the following terms in relation to bacteria. (a) obligate intracellular parasites (**4 marks**), (b) obligate halophiles (**4 marks**), (c) Pasteurization (**4 marks**), (d) Transport media (**4 marks**), e) Mesophiles (**4 marks**)
3. Describe 4 ways in which pathogenic bacteria causes damage to the host cell (**20 marks**)
4. Describe the basic functions of the body's compliment system in response against invading pathogenic bacteria (**20 marks**).