



**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**  
**1<sup>ST</sup> YEAR 1<sup>ST</sup> SEMESTER 2024/2025 ACADEMIC YEAR**  
**MAIN/KISUMU CAMPUS**

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**COURSE CODE:** HBB 9205  
**COURSE TITLE:** MEDICAL BACTERIOLOGY  
**EXAM VENUE:** LAB 6 **STREAM:** BSc Public/ Comm. Hlth & Dev  
**DATE:** 14/1/25 **EXAM SESSION:** 14-16.00 HRS  
**TIME:** 2.00 HOURS

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**Instructions:**

- 1. Answer all the questions in Section A and 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 (30 MARKS)**

1. Water chlorination is effective against all of the following organisms except(1 mark)
  - a. *Escherichia coli*
  - b. *Vibrio cholerae*
  - c. Cryptosporidium
  - d. Schistosomiasis cercariae
2. The bacterium that infects other gram-negative bacteria is (1mark)
  - a. *Proteus mirabilis*
  - b. *Haemophilus influenza*
  - c. Bdellovibrio
  - d. *Pseudomonas putida*
3. The bacterial genus where sterols are present in the cell membrane (1 mark)
  - a. Vibrio
  - b. Mycoplasma
  - c. Escherichia
  - d. Chlamydia
4. An outbreak of sepsis caused by staphylococcus aureus has occurred in the newborn nursery. You are called upon to investigate. According to your knowledge of the normal flora, what is the most likely source of the organism(1 mark)
  - a. Nose
  - b. Colon
  - c. Hand
  - d. Throat
5. Throat culture is not useful to diagnose(1 mark)
  - a. Streptococcal sore throat
  - b. Diphtheria
  - c. Thrush
  - d. Pneumonia
6. Lactobacillus is a human pathogen that is also part of the normal flora found in (1 mark)
  - a. Colon
  - b. Mouth
  - c. Genital tract of female
  - d. All of the above

7. *M. tuberculosis* initial site for infection is (1 mark)
- Skin
  - Lungs
  - Mucous
  - Nucleic Acid
8. Bacteria having clusters of flagella at both poles of cells are known as (1 mark)
- Amphitrichous
  - Monotrichous
  - Peritrichous
  - Lophotrichous
9. Lipopolysaccharide in cell walls is characteristic of (1 mark)
- Algae
  - Fungi
  - Gram negative bacteria
  - Gram positive bacteria
10. Natural reservoirs host for *Yersinia pestis* is (1 mark)
- Ticks
  - Housefly
  - Wild rodents
  - Man
11. Which of this is not a pyogenic infection (1 mark)
- Food poisoning
  - Boils
  - Abscesses
  - Pneumonia
12. Highlight FIVE major functions of a cell membrane (5marks)
13. Differentiate between Broad and Narrow spectrum antibiotics (6 marks)
14. Distinguish between exotoxins and endotoxins (8 marks)

**SECTION B- ANSWER ANY TWO QUESTIONS FROM THIS SECTION (40 MARKS)**

15. Outline
- FIVE ways bacteria can be classified (15 marks)
  - FIVE properties of bacteria (5marks)
16. Discuss FOUR toxins of *Bordetella pertussis* and their contribution to symptoms in whooping cough (20 marks)
17. Discuss the etiology of botulism (20 marks)
18. Tuberculosis is a major community health problem. Discuss (20 marks)