



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
2ND YEAR 1ST SEMESTER 2024/2025 ACADEMIC YEAR
MAIN CAMPUS

COURSE CODE: HBB 9201

COURSE TITLE: MEDICAL MICROBIOLOGY

EXAM VENUE: STREAM: BSc Public/ Comm. Hlth & Dev

DATE: **EXAM SESSION:**

TIME: 2.00 HOURS

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. Which of these bacterial components is least likely to contain useful antigens (1 mark)
 - a. Cell wall
 - b. Flagella
 - c. Ribosomes
 - d. Capsule
2. Which of the following contains structures composed of N-acetylmuramic acid and N-acetylglucosamine (1 mark)
 - a. Mycoplasma
 - b. Amoeba
 - c. E. coli
 - d. Spheroplast
3. The prokaryotic cell membrane (1 mark)
 - a. Contains metabolic enzymes
 - b. Is selectively permeable
 - c. Regulates the entry and exit of materials
 - d. Contains proteins and phospholipids
4. Prokaryotic cells are more resistant to osmotic shock than eukaryotic cells because(1 mark)
 - a. Their cell wall is composed of peptidoglycan
 - b. They are selectively permeable
 - c. They contain osmoregulating porins
 - d. They block water molecules from entering the cell
5. What is the colour coding of the bag used in hospitals to dispose of human anatomical waste such as body parts? (1 mark)
 - a. Yellow
 - b. Black
 - c. Red
 - d. Blue
6. Which containers should be used to dispose of contaminated waste like plastic bags, bottles, pipes and containers (1 mark)
 - a. Red containers
 - b. Sharp containers
 - c. Containers lined with yellow bags

- d. Containers lined with black bags
- 7. Which body part contains the largest microbial population (1 mark)
 - a. Stomach
 - b. Small intestines
 - c. Large intestines
 - d. Mouth
- 8. Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed (1 mark)
 - a. Condenser lens
 - b. Magnifying lens
 - c. Objective lens
 - d. Eyepiece lens
- 9. Which of the following are produced by microorganisms (1 mark)
 - a. Alcoholic beverages
 - b. Fermented dairy products
 - c. Breads
 - d. All of the above
- 10. The bacterium *Staphylococcus aureus* is which type of bacteria (1 mark)
 - a. Mesophile
 - b. Mesophile and Psychrophile
 - c. Psychrophile
 - d. Thermophile
- 11. What are the cell wall structural components of fungi (1 mark)
 - a. Peptidoglycan
 - b. Cellulose
 - c. Chitin
 - d. Chitin, Cellulose or hemicellulose
- 12. Growth of microorganisms refer to- (1 mark)
 - a. Changes in the total population
 - b. Increase in number of cells
 - c. An increase in the size of an individual organism
 - d. An increase in the mass of an individual organism
- 13. Protozoa that eat other organisms are known as (1 mark)
 - a. Parasitic

- b. Mutualistic
 - c. Holozoic
 - d. Saprophytic
14. Which of the following is true for cytoplasmic membrane (1 mark)
- a. Site of generation of protonmotive force
 - b. Hydrophilic barrier
 - c. Hydrophobic barrier
 - d. Hydrophobic barrier and site of generation of protonmotive force
15. Yeast divides by which of the following method most commonly (1 mark)
- a. Regeneration
 - b. Budding
 - c. Binary fission
 - d. Multiple fission
16. Highlight 3 cardinal temperature points in microbial survival (3 marks)
17. Differentiate between Prokaryotes and Eukaryotes (4 marks)
18. Illustrate flagellation of a bacterial cell (8 marks)

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

19. Illustrate the growth cycle of a microbial population (20marks)
20. Explain the environmental factors that affect growth of microbes (20 marks)
21. Describe any 4 common sterilization methods used in community or facility setting
(20 marks)
22. Discuss any five ways in which microorganisms may be useful to man (20 marks)