



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2023/2024 ACADEMIC YEAR

FIRST YEAR SECOND TRIMESTER

**SCHOOL OF PURE, APPLIED AND HEALTH
SCIENCES**

**BACHELOR OF SCIENCE IN FOODS, NUTRITION,
AND DIETETICS**

COURSE CODE: FND 1213

**COURSE TITLE: FOOD MICROBIOLOGY AND
PARASITOLOGY**

DATE: 15/5/2024

TIME: 0830-1030 HRS

INSTRUCTION TO CANDIDATES

Section A: Multiple Choice Questions. Answer ALL Questions

Section B: Short Answer Questions. Answer ALL Questions

Section C: Long Answer Questions. Answer Question ONE and any other ONE question.

This paper consists of 5 printed pages. Please turn over.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS) SELECT THE CORRECT ANSWER.

1. The approximate size of the bacterial cell is?
 - A. 1mm in diameter
 - B. 0.5 to 1.0 micrometer in diameter
 - C. 2mm in diameter
 - D. 2 micrometers in diameter
2. A bacterium with a cluster of flagella on both poles of a cell is known as
 - A. Monotrichous
 - B. Amphitrichous
 - C. Lophotrichous
 - D. Peritrichous
3. Staphylococcus aureus falls to which type of bacteria?
 - A. Mesophiles and psychrophiles
 - B. Psychrophiles
 - C. Thermophiles
 - D. Mesophiles
4. The substances produced by Microorganisms includes the following-?
 - A. Alcoholic beverages
 - B. Fermented dairy products
 - C. Breads
 - D. All of the above
5. The term bacterial growth of growth of microorganisms refers to-?
 - A. Changes in the total population
 - B. An increase in the number of cells
 - C. an increase in the size of an individual organism
 - D. an increase in the mass of an individual organism
6. Among the following listed bacteria, which one is microaerophilic?
 - A. Treponema
 - B. Borrelia
 - C. Spirochaetee
 - D. Cristispira
7. The cell wall structural components of fungi include?
 - A. Peptidoglycan
 - B. Cellulose
 - C. Chitin
 - D. chitin, cellulose, or hemicellulose
8. Cryptococcosis is a disease of _____
 - A. viral infection
 - B. mycotic infection

- C. parasitic infection
 - D. bacterial infection
9. Protozoa that eat other organisms are known as _____
- A. parasitic
 - B. Mutualistic
 - C. Holozoic
 - D. saprophytic
10. Plasmodium divides by which of the following method most commonly?
- A. Regeneration
 - B. Budding
 - C. Binary fission
 - C. Multiple fission
11. What does a viral DNA become after being associated with the bacterial chromosome?
- A. plasmid
 - B. Plaque
 - C. Prophage
 - D. gene
12. Vaccination was invented by _____
- A. Watson
 - B. Jenner
 - C. Crick
 - D. Pasteur
13. The following is the most accurate method for microbial assay of antibiotics.
- A. Chemical and biological assay
 - B. Biological assay
 - C. Chemical assay
 - D. Physical assay
14. The microorganisms from lakes and rivers can grow at a salt concentration of _____
- A. above 1 percent
 - B. below 1 percent
 - C. 2.5 to 4 percent
 - D. 5 percent
15. In regions of the estuary that are nutritionally poor, it is more likely to find which of the following organisms?
- A. viruses
 - B. Coliforms

- C. fecal streptococci
D. appendaged bacteria
16. In which of the following treatment involve oxidation of organic constituents of the wastewater?
A. Final treatment
B. Advanced treatment
C. Secondary treatment
D. Primary treatment
17. Which among the following group of microorganisms are found in the ducts of cow's mammary glands?
A. Micrococci
B. Microbacteria
C. Lactobacilli
D. Coliforms
18. Some microorganisms can be eliminated in canned foods, which one of the following microorganisms can be eliminated in canned foods?
A. Lactobacillus
B. Clostridium botulinum
C. Mycobacterium tuberculosis
D. Coxiella burnetii
19. The principal microorganism for yogurt is _____
A. Leuconostoc citrovorum
B. Streptococcus lactis
C. Streptococcus thermophilus
D. Lactobacillus acidophilus
20. Which of the following yeast can be used to produce microbial protein?
A. Eremothecium ashbyi
B. Candida utilis
C. Saccharomyces cerevisiae
d. Candida milleri

SECTION B: SHORT ANSWER QUESTIONS (40 MARKS). ANSWER ALL QUESTIONS.

1. Define the following terms as used in food microbiology and parasitology
(8 Marks)
- i.** Lactic and bacteria- **2 marks**
ii. Water activity-**2 marks**
iii. Foodborne and disease outbreak- **2 marks**
iv. Infectivity and pathogenicity- **2 marks**

2. Outline the five main hurdles a pathogen must overcome in order to cause a foodborne illness- **8 marks**
3. Differentiate between taeniasis and cysticercosis-**6 marks**
4. Differentiate between- **6 marks**
 - i. Microbiology and food microbiology (**2 marks**)
 - ii. Bacterial intrinsic and extrinsic factors (**2 marks**)
 - iii. Spoilage detection level and infectious dose of microorganisms (**2marks**)
5. Explain three modes of transmission of microorganisms in humans (**6marks**)
6. With aid of a labelled diagram, describe the exponential phase of a bacterial growth (**6 marks**)

SECTION C: LONG ANSWER QUESTIONS (40 MARKS).QUESTION ONE IS COMPULSORY, THEN CHOOSE EITHER QUESTION 2 OR 3.

1. Food spoilage brings food wastage and loss
 - a) Explain the three main causes of microbial spoilage of canned foods (**10 marks**)
 - b) Describe the flat sour spoilage in canned foods (**10 marks**)
2. Discuss any four reasons why we do not sample for pathogens but indicator microorganisms (**20 marks**)
3. Control and prevention of microorganisms contributes to food preservation and safety.
 - a) Discuss the nutrition prevention and control measures for making food safe for use (**10 marks**)
 - b) Describe microorganisms in food technology (**10 marks**)

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