



# MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS**

**2020/2021 ACADEMIC YEAR**

**SECOND YEAR THIRD TRIMESTER**

**SCHOOL OF HEALTH SCIENCE**

**DIPLOMA IN NUTTION AND DIATETICS**

**COURSE CODE: DND 1302**

**COURSE TITLE: FOOD, WATER MICROBIOLOGY AND PARASITOLOGY**

**DATE: 9<sup>th</sup> December, 2021                      TIME: 0830-1030HRS**

**INSTRUCTIONS TO CANDIDATES**

- THERE ARE **THREE** SECTIONS : SECTIONS **A, B AND C**
- ANSWER **ALL** MULTIPLE QUESTIONS IN **SECTION A** AND ALL SHORT ESSAYS IN **SECTION B** AND **ANY TWO** QUESTIONS IN **SECTION C**

**SECTION A: MULTIPLE CHOICE QUESTIONS**

**ANSWER ALL QUESTIONS**

**(20MARKS)**

1. The father of microbiology is called?
  - A. Robert Koch
  - B. Antonie van Leeuwenhoek
  - C. Francesco Redi
  - D. Louis Pasteur
2. The best ways of preserving meat from germs is?
  - A. Canning
  - B. Grinding
  - C. Boiling
  - D. Room Temperature
3. Which of the following are NOT parasites?
  - A. Entamoeba histolytica
  - B. Vibrios
  - C. Ascaris lumbricoides
  - D. Plasmodium
4. Microorganisms which can utilize inorganic nutrients or light as a source of their energy are called?
  - A. phototrophic
  - B. Autotrophs
  - C. heterotrophs
  - D. Chemoheterotrophs
5. Microorganisms that grow only at temperatures about as hot as the human hand or below body temperature are called?
  - A. Mesophiles
  - B. Psychrotrophs
  - C. Thermophiles
  - D. Psychrophies

6. Which one is NOT a blood parasite?
  - A. Plasmodium malariae
  - B. Leshimania species
  - C. Gardia lamblia
  - D. Trypanosoma species
7. Which of the following is NOT used in identification of micro-organisms?
  - A. Immunological differences
  - B. Staining reactions
  - C. The nature of disease they produce
  - D. Biochemical reactions
8. Preventing cooked food from spoilage involves the following process
  - A. Refrigeration
  - B. Temperatures between 30-40 oC
  - C. Cabinet
  - D. At room temperature
9. The following bacteria is heat resistant
  - A. Staphylococcus
  - B. Klebsiella
  - C. Bacillus
  - D. Pseudomonas
10. Sometimes food deteriorates to the point in which it is not edible to humans or its quality of edibility becomes reduced and this is due to various external forces.  
Which word best describes this process.
  - A. Rotten
  - B. Contamination
  - C. Spoilage
  - D. Bacterial growth
11. Below is the process in which a liquid (such as milk or cream) is heated to a temperature that kills harmful germs and then cooled quickly
  - A. Pasteurization
  - B. Sterilization

- C. Cultivation
  - D. Canning
12. Which of the following does not support the growth and Quick spread of microorganisms?
- A. food
  - B. air
  - C. treated water
  - D. blood.
13. Food poisoning can be caused by bacteria, viruses and parasites. Which among the bacteria causes food poisoning?
- A. Shigella spp
  - B. Mycobacterium spp.
  - C. Salmonella
  - D. Corneybacterium
14. Growth of many microorganisms in food can result in improving overall quality of food and in some cases they can deteriorate the quality also. What does growth of harmful microorganisms especially bacteria and fungi in food cause?
- A. Food spoilage
  - B. Food preservation
  - C. Food reduction
  - D. Bacteria multiplication
15. Which of the following is the most important structure related to microbial attachment to cells?
- A. DNase
  - B. Plasmid
  - C. Peptidoglucon
  - D. Glycocalix
16. Intrinsic internal factors affecting the growth of microorganisms in food includes
- A. relative humidity
  - B. atmospheric gases
  - C. Hydrogen ion concentration(pH)

- D. Other microbes
17. Cholera causes dehydration, shock and sometimes death. Which of the following is **NOT** a preventive method of cholera?
- A. frequently wash hands with soap and safe water;
  - B. use chemical, toilets or bury feces
  - C. Defecate in any stagnant water and do not cook food thoroughly.
  - D. Supplying proper and safe water
18. The best term used when an object is contaminated with pathogenic microorganisms include?
- A. Fomites
  - B. Sterilizes objects
  - C. Incubated objects
  - D. Instruments
19. The hand washing procedure involves the following components
- A. Liquid paraffin and water
  - B. Spirit and alcohol
  - C. Water and sanitizer
  - D. Soap and water
20. Immunization is very important in mother Health. The common vaccine given to a pregnant mother includes?
- A. Yellow Fever
  - B. Tentanus toxoid
  - C. Measles
  - D. Influenza

## **SECTION B: SHORT ANSWER QUESTIONS (40 MARKS)**

### **ANSWER ALL QUESTIONS**

1. Define the following terms (5marks each)
  - a. Sterilization
  - b. Parasitology
  - c. Sanitation
  - d. Microbiology
  - e. Obligate Parasites
2. Outline 5 (five) methods for prevention of food contamination (**5marks**)
3. Explain bacteria as a microorganism (**4 marks**)
4. State four (4) common parasites that affect children (**4 marks**)
5. Define culture medium? (**2marks**)
6. Give the different sources of microorganisms in food. (**5 marks**)
7. Explain sources of food contamination ` (**5 marks**)
8. Explain “Gram Staining”. (**5 marks**)
9. List 5 types of vaccines givens to infants (**5marks**)

## **SECTION C: LONG ANSWERS OR ESSAY (40 MARKS)**

### **ANSWER ONLY TWO (2) QUESTIONS FROM THIS SECTION**

1. Fungi, bacteria, viruses, spores, unicellular eukaryotic organisms such as Plasmodium and other biological agents like prions are present in a specific surface, object or fluid.

- a. Differentiate between sterilization and Pastuerization. (**10 marks**)
- b. Describe spoilage of meat and vegetables. (**10marks**)
2. When bacteria are inoculated into broth medium with a small bacterial inoculum, the population size of the bacteria increases. If this can be plotted on a graph, a distinct curve is obtained referred to as the bacterial growth curve.
  - a. Explain bacterial growth curve. (**10 marks**)
  - b. Describe advantages and disadvantages of using pesticides (**10 marks**)
3. The growth of microorganisms in food may be affected by several factors like physical, chemical and biological.
  - a). List and explain the intrinsic factors that affect the growth of microorganisms in food (**10marks**)
  - b) Classify bacteria according to their temperature requirements (**10marks**)

**End//**