



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN AND CAMPUSES

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

MAIN EXAM

**SECOND YEAR SECOND TRIMESTER EXAMINATIONS
FOR THE DEGREE
OF
BSC HUMAN NUTRITION AND DIETETICS**

COURSE CODE: HND 214
COURSE TITLE: FOOD PROCESSING AND PRESERVATION

DATE: 22nd APRIL 2022

TIME: 3.00 - 5.00 PM

INSTRUCTIONS TO CANDIDATES

Answer all questions in SECTIONS A,B and C
Read additional instructions under various sections

MMUST observes ZERO tolerance to examination cheating
This Paper Consists of 4 Printed Pages. Please Turn Over.

SECTION A: ANSWER ALL QUESTIONS (10 MARKS)

1. Low-temperature _____ evaporators are used for heat-sensitive foods.
 - A. Ultrafiltration
 - B. Vacuum
 - C. Osmosis
 - D. Drum

2. Aseptic canning is also known as:
 - A. High Temperature Short Time
 - B. Ultra Heat Treatment
 - C. Batch pasteurization
 - D. In- package sterilization

3. Sun-dried _____ are the best known of all dried foods.
 - A. Tomatoes
 - B. Raisins
 - C. Peppers
 - D. Mushrooms

4. To dry fruits out-of-doors, humidity below _____ percent is best.
 - A. 60
 - B. 80
 - C. 70
 - D. 90

5. Dehydration methods are the following **EXCEPT**:
 - A. Freeze drying
 - B. Intermediate moisture technology
 - C. Sun drying
 - D. Kiln drying

6. _____ are used in medical research and therapy in many hospitals and universities.
 - A. Radioisotopes
 - B. Satellites
 - C. Microwaves
 - D. Mice

7. The following gives the best option to preserve spices:
 - A. Irradiation
 - B. Pasteurization

- C. Chemical preservation
 - D. Appertization
8. Foods that are sterilized by irradiation can be stored for _____ without refrigeration.
- A. Years
 - B. Weeks
 - C. Months
 - D. Days
9. _____ is the moderate dose of food irradiation.
- A. Radurization
 - B. Radicidation
 - C. Radappertization
 - D. None of the above
10. Microwave radiation is often called _____ radiation.
- A. Ionizing
 - B. Electrical
 - C. Nonionizing
 - D. Magnetic

SECTION B: Answer ALL Questions (30 marks)

- 11. Highlight **THREE** changes that can take place during refrigerated storage (6mks)
- 12. Differentiate between LTLT and HTST as used in pasteurization of milk (6 marks)
- 13. Differentiate between the terms “direct” and” indirect” UHT as used in milk preservation technology (6 marks)
- 14. Explain Cleaning, Sorting and Grading as pre-processing steps in food preservation (6 marks)
- 15. Jam making is a method of preserving fruits using heat treatment.
 - a) Which method of heat treatment is used in jam making? (3mks)
 - b) Explain how this method is applied to achieve preservation (3mks)

SECTION C: Answer ANY TWO questions (30 Marks)

- 16.(a) Describe freezing as a food preservation technology detailing why fast freezing is preferred and how to practically achieve it in home kitchen set up (5 marks)
 - (b) Discuss fermentation as a method of processing foods. (10 marks)
- 17. Using examples, discuss any **FIVE** food grade chemicals mentioning the foods they are applied in preserving and the merits and demerits of using the same (15 marks)

18. Using a flow diagram, discuss the industrial production of a cereal flour e.g. wheat giving the disadvantages of extraction (bran removal) in relation to nutritional quality of the final product (15 marks)