



MERU UNIVERSITY OF SCIENCE & TECHNOLOGY

Foundation of innovations

MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O Box 972-60200 –Meru-Kenya.

Tel: 020-2069349, 061-2309217, 064-30320 Cell phone: +254 712524293, +254 789151411

Fax: 064-30321

Website: www.must.ac.ke Email: info@must.ac.ke

University Examination 2016/2017

THIRD YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY AND BACHELOR OF SCIENCE IN FOOD SCIENCE AND MANAGEMENT, BACHELOR OF SCIENCE IN FOOD SCIENCE AND NUTRITION AND BACHELOR OF SCIENCE IN FOOD SCIENCE IN HUMAN NUTRITION & DIETETICS

AFT 3252: FOOD PROCESSING AND PRESERVATION

DATE: APRIL 2016

TIME: 2 HOURS

INSTRUCTIONS: Answer question **one** and any other **two** questions.

QUESTION ONE (30 MARKS)

- a) Define the following terms as used in food processing and preservation (5 marks)
- i) Water activity
 - ii) Case hardening
 - iii) Cold point
 - iv) Commercial sterilization
 - v) Ultrasound
- b) Briefly explain the effects of drying on various products and state appropriate examples
- c)
- i) Explain major causes of food spoilage in food industries and state two examples in each category (3 marks)
 - ii) Explain the role of plate heat exchange in heat preservation and cold preservation techniques separately. (3 marks)
 - iii) List four chemical preservation techniques commonly used in food. (2 marks)
 - iv) Describe how microwave is used in food processing (cooking). (2 marks)

- d)
- i) Explain the role of irradiation during water treatment in the sewerage companies (2 marks)
 - ii) Cured meat stored under refrigeration keeps for longer period as compared to raw meat. Explain. (3 marks)
 - iii) Canning is a form of commercial sterilization technique. Explain. (2 marks)
 - iv) Briefly describe the difference between food processing and food preservation. Give 3 examples in each category. (3 marks)

QUESTION TWO (20 MARKS)

- a) Discuss in detail the difference between chilling and freezing as form of food preservation techniques. Give specific foods stored in each category and justify reason for the examples given. (10 marks)
- b) Explain the heat processing regimes that should be put in consideration during the pasteurization of milk. (10 marks)

QUESTION THREE (20 MARKS)

- a) With an illustration, explain in detail processing of canning of fish in a given fish industry. State the role for each stage and how it can be achieved. (10 marks)
- b) Discuss various chemical preservation techniques that are commonly applied in various food industries. Give roles for each and specific food being used for. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Write short notes on the following
 - i) Hurdle technology (4 marks)
 - ii) Dehydration/ drying (4 marks)
 - iii) High pressure processing (4 marks)
 - iv) Evaporation (4 marks)
 - v) Pulsed electric field. (4 marks)