



UNIVERSITY OF ESWATINI
Faculty of Health Sciences
Department of Environmental Health Science

BSc IN ENVIRONMENTAL HEALTH SCIENCE
FINAL EXAMINATION PAPER MAY 2019

TITLE OF PAPER: FOOD PRESERVATION

COURSE CODE: EHS 348

DURATION: 2 HOURS

MARKS: 100

INSTRUCTIONS: READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
ANSWER **QUESTION ONE** AND **ANY OTHER THREE**
QUESTIONS
EACH QUESTION **CARRIES 25 MARKS**
BEGIN EACH QUESTION ON A SEPARATE SHEET OF
PAPER
WRITE NEATLY AND CLEARLY

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED
BY THE INVIGILATOR**

QUESTION ONE

- a) What factors are necessary to consider, when using or choosing chemical preservatives in food, and why? (10 Marks)
 - b) The use of nitrate as a preservative has both advantages and disadvantages. Discuss these advantages and disadvantages and explain why the benefits outweigh the disadvantages. (10 Marks)
 - c) Why is it necessary to preserve food? Give **five** reasons. (5 Marks)
- (25 Total Marks)

QUESTION TWO

- a) Explain the following food classification and give examples of the foods. (6 Marks)
 - i) Stable foods[durable]
 - ii) Semi-perishable foods
 - iii) Perishable foods
 - b) Name **three** dangerous microorganisms that may affect cured meat, if it is not handled well. (6 Marks)
 - c) Name **two** food items in which the following preservatives are used and **one** microorganism they inhibit in the food. (8 Marks)
 - i) Sodium benzoate
 - ii) Sorbic acid and its salts
 - iii) Carbon dioxide
 - iv) Sulphur dioxide
 - d) How does smoke preserve food? (5 Marks)
- (25 Total Marks)

QUESTION THREE

- a) Select **two** of the following agents and explain how they enhance food spoilage. (10 Marks)
 - i) Enzymatic (autolysis)
 - ii) Microbial
 - iii) Physical activity and Pests
 - iv) Chemical
 - b) Discuss the effects of freezing temperature on microorganisms. (10 Marks)
 - c) Briefly discuss food pasteurization. (5 Marks)
- (25 Total Marks)

QUESTION FOUR

- a) Differentiate between deterioration and spoilage of food. (4 Marks)
 - b) Briefly discuss the three types of acid preservation and give examples of each type. (6 Marks)
 - c) What are the effects of freezing temperature on food? (10 Marks)
 - d) Briefly discuss blanching as a thermal food treatment method. (5 Marks)
- (25 Total Marks)

QUESTION FIVE

- a) Name **three** friendly bacteria and state their function in food. (6 Marks)
 - b) Explain the antimicrobial activity of organic acids in food. (10 Marks)
 - c) What is the measurement of the availability of water in food? (1 Mark)
 - d) Discuss the principles of drying in food preservation. (8 Marks)
- (25 Total Marks)