

CHUKA



UNIVERSITY

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**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
FOST 341: CEREALS AND ROOT CROPS TECHNOLOGY**

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 30/03/2021

8.30 A.M – 10.30 A.M

INSTRUCTIONS:

Answer all questions in section A and any two questions in section B

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Briefly explain the following terminologies as used in cereals technology. [4 marks]
 - (a) Wet milling
 - (b) Starch retrogradation
 - (c) Resistant starch
 - (d) Pearling as used in barley processing
2. Explain the advantages of the chorleywood bread process as compared to other bread making processes.
3. Describe parboiling and explain how it affects rice quality. [5 marks]
4. Explain the significance of damaged starch in the making of biscuits. [4 marks]
5. Briefly explain the nixtamalization process in maize processing. [4 marks]
6. Describe the significance of alpha-and beta-amylases in wheat products processing. [4 marks]

7. Briefly, explain the term mycotoxins and how their presence in cereals can be prevented. [4 marks]

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

8. (a) As a part of an outreach programme to educate farmers on sweet potato value addition, explain to farmers some of the ways through which sweet potato utilization and value addition may be achieved. [10 marks]

- (b) Discuss the harmful health effects of consuming cereals and root crops products. [10 marks]

9. (a) Discuss the sponge dough fermentation processes, identifying the ingredients used in making bread and their purpose. [12 marks]

- (b) Discuss the process of tempering highlighting its importance in wheat milling and the factors to consider during this operation. [8 marks]

10. (a) Discuss the manufacture of high fructose corn syrup from maize grains and the applications of the syrup in the food industry. [12 marks]

- (b) You are the quality assurance officer in a barley processing company. Explain to a farmer who has delivered their produce to your factory, the characteristics required of malting barley and why high nitrogen barley may be unsuitable for use in processing. [8 marks]
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