

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN FOOD SCIENCE AND TECHNOLOGY**

FOST 344: SUGAR AND CONFECTIONER TECHNOLOGY

STREAMS: BSc. FOST

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 23/04/2025

8.30 A.M. – 5.30 P.M.

INSTRUCTIONS:

- **Answer all questions in section and any other Two in section B**

SECTION A (30 MARKS)

1. Explain the following terms as used in the sugar industry (1 mark each)
 - i. Affiniton
 - ii. Seeding
 - iii. Masecuite
2. a) Differentiate between hard to-crack and hardball in sweet confectionery (4 marks)
b) Explain the occurrence and prevention of sugar bloom in chocolate bars (4 marks)
3. a) Highlight the by-products of sugarcane processing and their importance (5 marks)
b) Explain factors that affect the crystallization of sugar (4 marks)
4. a) Briefly explain the major structural differences between caramel, fudge and toffee (6 marks)
b) As a food technologist, why should you recommend the utilization of artificial sweeteners in food industries. (4 marks)

- c) Describe FOUR properties of glucose syrup that facilitate its utilization in food industries (2 marks)

SECTION B (40 MARKS)

- 5.a) Describe the basic steps in processing cocoa beans at the industrial level. (8 marks)
- b) Discuss the physical properties of sucrose, citing their respective importance in food applications. (12 marks)

- 6. a) Account for the development of flavour characteristics in processed chocolate (6marks)
- b) In reference to honey
 - i. Describe the process steps of honey from honeycombs (10 marks)
 - ii. By-products of honey and their importance (4 marks)

- 7 a) Illustrate the manufacturing process of glucose syrup from raw Irish potatoes (10 marks)
- b) Discuss any FIVE quality criteria that determine the effectiveness of the refining process of raw sugar (10 marks)

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