



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2012/2013

THIRD YEAR, FIRST SEMSTER, EXAMINATIONS FOR DEGREE OF FOOD  
SCIENCE AND TECHNOLOGY

### AFS 2307: SUGAR AND CONFECTIONERY

DATE: AUGUST 2013

TIME: 2 HOURS

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

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#### QUESTION ONE – (30 MARKS)

- Distinguish sugar cane from beat in terms of their characteristics and sugar extraction. (8 Marks)
- Why is it necessary to remove the green tops from sugarcane immediately after cutting (2 Marks)
- Explain the importance of monitoring temperature affects imbibitions process in mill type juice extraction systems. (6 Marks)
- Explain the importance of monitoring temperature and  $p^H$  in sugarcane juice extraction systems employing the diffusion technique. (4 Marks)
- Discuss fat bloom defect in chocolate manufacture (6 Marks)
- Describe the reactions in sugarcane juice on liming. (4 Marks)

#### QUESTION TWO – (20 MARKS)

- Discuss the aquisition and significance of juice brix, juice pol% and purity quality parameters from raw cane (9 Marks)
- Describe the classification of extraneous matter accompanying cane into the factory and its effect on sugar manufacturing process (8 Marks)
- Briefly outline the advantages of using multiple effect evaporation in clarified juice concentration (3 Marks)

**QUESTION THREE – (20 MARKS)**

- a) Briefly discuss the process of making boiled sweets ( 6 Marks)
- b) Discuss the two main factors affecting centrifuge performance in separation of sugar crystals from mother liquor. ( 6 Marks)
- c) Discuss two changes in juice composition during evaporation and highlight the effect on subsequent stages of sugar processing ( 8 Marks)

**QUESTION FOUR – (20 MARKS)**

Describe the manufacture of chocolate highlighting the objectives of all stages. ( 20 Marks)

**QUESTION FIVE – (20 MARKS)**

- a) Describe how refining of raw sugar is affected by chemical and physical characteristics of raw material ( 10 Marks)
- b) Describe the underlying principles involved in 3 graining techniques used in the sugar industry. ( 10 Marks)