



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2013/2014

THIRD YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR  
OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY

### AFS 2315: PLANT LAYOUT AND DESIGN

DATE: DECEMBER 2013

TIME: 2 HOURS

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

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#### QUESTION ONE (30 MARKS)

- What do you understand by the term plant layout? (1 Mark)
- Discuss the influence community has in selecting site for food processing plant set up. (3 Marks)
- Discuss the importance of a pilot plant. (4 Marks)
- Discuss Queuing theory and its importance in food plant design. (6 Marks)
- Imagine you are setting up a food plant to produce loaves of bread. The fixed cost of producing 100,000 units are Ksh 300,000 in a month, variable cost is ksh 3.000, materials ksh. 4, labour and Ksh 1 overhead. If selling price will be Ksh 15 for each loaf of bread. Determine the break-even point for this new bakery. (4 Marks)

#### QUESTION TWO (20 MARKS)

As a manager in food processing plant, discuss all the design and set-up considerations when designing a new meat processing plant. (20 Marks)

#### QUESTION THREE (20 MARKS)

Discuss various plant layouts highlighting their advantages and disadvantages. (20 Marks)

#### QUESTION FOUR (20 MARKS)

- Hygiene is very important in food processing plant. Discuss hygiene design in location, equipment and personnel. (10 Marks)

- b) Legal and legislation influences the set-up and design of food plant. In Kenya context discuss legislation as a factor to consider when setting up a new plant. (10 Marks)