



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.

Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293,

+254 789151411

Fax: 064-30321

Website: www.must.ac.ke Email: info@must.ac.ke

University Examinations 2013/2014

THIRD YEAR, FIRST SEMESTER EXAMINATIONS FOR DEGREE OF BACHELOR OF
SCIENCE IN FOOD TECHNOLOGY

AND

THIRD YEAR, FIRST SEMESTER EXAMINATIONS FOR DEGREE OF BACHELOR OF
SCIENCE IN FOOD SCIENCE AND NUTRITION

AFS 2304: FOOD AND INDUSTRIAL MICROBIOLOGY

DATE: APRIL 2014

TIME: 2 HOURS

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

QUESTION ONE – (30 MARKS)

- (a) Using diagram explain difference between upstream and downstream processing in fermentation process. (8 Marks)
- (b) State five applications of industrial microbiology. (5 Marks)
- (c) Briefly explain the difference between inhibition and killing principles employed in food preservation. (4 Marks)
- (d) State three classes of carrier molecules found in electron transport chain. (3 Marks)
- (e) Name any five medically important proteins produced by genetically engineered micro-organisms and their uses.. (10 Marks)

QUESTION TWO – (20 MARKS)

Enzymes play a critical role in industrial processes. Using relevant examples discuss application of enzymes in food bioprocessing. (20 Marks)

QUESTION THREE – (20 MARKS)

- (a) Production of fermented foods involves organisms that are biochemically fermentative. Give examples of three products and respective micro-organisms involved in their production. (6 Marks)
- (b) Briefly discuss seven benefits of fermented foods and food products. (14 Marks)

QUESTION FOUR – (20 MARKS)

Food serves as growth medium for different kinds of micro-organisms. Discuss five important micro-organisms associated with food. (20 Marks)