



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2012/2013

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

AFS 2201: PRINCIPLES OF MICROBIOLOGY

DATE: AUGUST 2013

TIME: 2 HOURS

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

QUESTION ONE – (30 MARKS)

- a) (i) Explain the effect of temperature on growth of microbes. (5 Marks)
- (ii) List roles of micro-organisms in food. (5 Marks)
- b) Differentiate between prokaryotic and eukaryotic cell. (5 Marks)
- c) Explain the difference between the following: (10 Marks)
 - i. Psychrophiles and thermophiles
 - ii. Aerobic and anaerobic micro-organisms
 - iii. Dark field contrast and bright field contrast
 - iv. Bacteriocidal and bacteriostatic
 - v. Ascospores and conidiospores

QUESTION TWO – (20 MARKS)

- a) Draw the bacterial growth curve and explain the various phases of growth (15 Marks)
- b) Describe the various shapes of bacteria. (5 Marks)

QUESTION THREE – (20 MARKS)

- a) Distinguish between sexual reproduction and asexual reproduction in yeast. (10 Marks)
- b) Discuss five factors that influence growth of bacteria (10 Marks)

QUESTION FOUR– (20 MARKS)

- a) Explain the different types of media used in microbiology. (10 Marks)
- b) Discuss plate counting technique as a method used in monitoring microbial growth in culture. (5 Marks)
- c) Explain gram staining technique. (5 Marks)

QUESTION FIVE – (20 MARKS)

- a) Explain the effects of entry of viral nucleic acid into a host cell. (10 Marks)
- b) List four anti-microbial agents and briefly explain their mode of action. (10 Marks)