



UNIVERSITY OF EMBU

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**2016/2017 ACADEMIC YEAR**

**FIRST SEMESTER EXAMINATION**

**FIRST YEAR EXAMINATION FOR THE BACHELOR OF SCIENCE RANGE**  
**MANAGEMENT**

**ACP 101: MICROBIOLOGY**

**DATE: DECEMBER 6, 2016**

**TIME: 8:30-10:30AM**

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**INSTRUCTIONS:**

**Answer Question ONE and ANY other TWO Questions**

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**QUESTION ONE (30 MARKS)**

- a) Briefly explain how chicken cholera vaccine was discovered (5 marks)
- b) Explain Robert Koch postulates (3 marks)
- c) Outline the industrial benefits of microbes (4 marks)
- d) Differentiate between the following terms (4 marks)
- i) Facultative anaerobes and facultative anaerobes
  - ii) Thermophiles and mesophiles
- e) Outline the physiological differences between bacteria and viruses (5 marks)

f) Briefly explain the evolutionary relationship between euglenophyta and protozoa (4 marks)

**QUESTION TWO (20 MARKS)**

a) Discuss the life cycle of root knot nematodes (10 marks)

b) Outline the differences between disinfection and sterilization (10 marks)

**QUESTION THREE (20 MARKS)**

Describe six types of culture media used in microbial studies

**QUESTION FOUR (20 MARKS)**

Explain the roles of microorganisms in carbon cycle

**QUESTION FIVE (20 MARKS)**

a) Explain the procedure of gram staining in identification and management of bacteria (10 marks)

b) Describe serial dilution as a method of enumeration of microorganisms (10 marks)

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