



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2019 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF BIOLOGY

PART TIME PROGRAMME

BIO 305: GENERAL MICROBIOLOGY

Date: April 2019

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

- Q1. a) Differentiate between gram positive from gram negative bacteria (4 marks)
- b) State and explain characteristics of three extremophiles (6 marks)
- c) Discuss three ways bacteria can be identified after isolation (6 marks)
- d) Compare and contrast light microscopy from electron microscopy (4 marks)
- e) What are prions? Give Three diseases resulting from prion (4 marks)
- f) Describe the key contributions to field of microbiology by the following (4 marks)
- i) Antony van Leeuwenhoek
 - ii) Sir Alexander Fleming
 - iii) Robert Koch
 - iv) Louis Pasteur
- g) Why is spore formation important for some bacteria species? (2 marks)
- Q2. a) Describe key stages in virus replication (10 marks)
- b) Describe use of nucleic based tests for identification/ detection of microorganisms (10 marks)
- Q3. Discuss industrial and food processing uses of microorganisms (20 marks)

- Q4. a) Microbiologist student at CUEA was to culture bacteria from salads offered at the food kiosks surrounding the university as part of her research project. Advise her on what types of media to use **(10 marks)**
- b) Write short notes on five types of light microscope **(10 marks)**
- Q5. a) Discuss approaches to control of pathogens **(8 marks)**
- b) Discuss relevance of fungi in causing diseases and production of harmful toxins **(12 marks)**

END