MUEO

MOI UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR
(ACADEMICS, RESEARCH & EXTENSION)

UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER EXAMINATION

FOR THE DEGREE OF
BACHELOR OF SCIENCE
IN
BIOCHEMISTRY

COURSE CODE: BIO 312

COURSE TITLE: MICROBIAL BIOCHEMISTRY

DATE: 6TH FEBRUARY, 2018   **TIME:** 8.00 A.M. – 11.00 A.M.

INSTRUCTION TO CANDIDATES

- SEE INSIDE.

THIS PAPER CONSISTS OF (2) PRINTED PAGES   PLEASE TURN OVER

MOI UNIVERSITY
UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE BIOCHEMISTRY

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(MAIN EXAMINATION, JAN 2018)

3 hours

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INSTRUCTION TO CANDIDATES
This paper consists of **FOUR** questions. Attempt **ALL** the Questions.

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QUESTION 1 (20 marks)

a) Using the modern cell theory briefly explain the following: **(6 mks)**
   - The generally accepted facts of the cell
   - Limitations of cell theory

b) Using specific examples explain the principle of unity in biochemistry   **(6 mks)**
c) Briefly explain the roles of the following structures in a bacterial cell   **(8 mks)**
   - Capsule
   - Cell Wall
   - Plasmids

QUESTION 2 (20 marks)

a) Compare and contrast gram positive and negative bacteria   **(6 mks)**
b) Briefly explain bacterial colony characteristics that are generally observed in a culture media.   **(6 mks)**
c) Briefly explain the steps of viral replication   **(8 mks)**

QUESTION 3 (20 marks)

a) Distinguish between anabolism and catabolism and in each case give an example **(4 mks)**
b) Briefly explain three phases of catabolism   **(6 mks)**
c) Using the Embden Meyerhof pathway, give a brief account of glycolysis mentioning the steps and the energy yield per molecule of glucose   **(10 mks)**

QUESTION 4 (10 marks)

a) Briefly explain the roles of exoezymes in bacterial survival   **(5 mks)**
b) Explain the mechanisms of action of antimicrobial agents   **(5 mks)**