

MIC 213



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2018 /2019 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

**FOR THE DEGREE OF BACHELOR OF SCIENCE
IN MICROBIOLOGY**

COURSE CODE: MIC 213

COURSE TITLE: CELL BIOLOGY

DATE: 17TH APRIL, 2019

TIME: 9.00 AM – 12.00 PM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER

MIC 213: CELL BIOLOGY

STREAM: BSc in Microbiology

DURATION: 3 HOURS

INSTRUCTION TO CANDIDATES

- i. Answer ALL questions from section A and any THREE from section B.*
 - ii. Diagrams should be used whenever they serve to illustrate the answer.*
 - iii. Do not write on the question paper.*
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SECTION A (24 MARKS)

Question One

- a) Define the term apoptosis (1 Mark)
- b) Describe the pathways that regulate the process of apoptosis. (3 Marks)
- c) State the cell theory. (1 Mark)
- d) Outline the exceptions to the cell theory. (3 Marks)
- e) Differentiate between passive and active transport in a cell membrane. (4 Marks)

Question Two

- a) Describe the composition of a mitochondrion. (3 Marks)
- b) Describe the types of cell junctions below:
 - i. Tight junctions (3 Marks)
 - ii. Adherens junctions (3 Marks)
 - iii. Desmosomes (3 Marks)

SECTION B (36 Marks)

Question Three

- a). State the contributions of the following scientists to the cell theory. (2 Marks)
i). Rudolph Virchow
ii). Matthias Schleiden
- b). Distinguish between endocytosis and exocytosis. (2 Marks)
- c). Tabulate four differences between mitosis and meiosis of cell division. (8 Marks)

Question Four

- a). Clearly point out six distinguishing features between prokaryotes and eukaryotes. (6 Marks)
- b). Explain any three significances of osmosis in plant. (6 Marks)

Question Five

- a). Explain the structural composition of the cell wall. (8 Marks)
- b). Describe two components of a cytoskeleton filament. (4 Marks)

Question Six

- a). Explain the different responses of a cell in different solute concentration. (4 Marks)
- b). Discuss any four factors affecting the rate of diffusion. (8 Marks)

Question Seven

- a). Write short notes on the following:-
i. Vacuole (4 Marks)
ii. Chromosomes (4 Marks)
- b). Explain the composition of a Gram Positive cell. (4 Marks)
