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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**

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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). Cleary 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)

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