

ZOO 100E



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COLLEGE

... Bastion of Knowledge...

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OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2019 /2020 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

COURSE CODE: ZOO 100E

COURSE TITLE: CELL BIOLOGY

DATE: 11TH DECEMBER, 2019

TIME: 9.00 AM – 12 PM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER



ZOO 100E

ZOO 100E: CELL BIOLOGY

STREAM: BED (SCIENCE)

DURATION: 3 Hours

INSTRUCTIONS 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) Distinguish between rough endoplasmic reticulum and smooth endoplasmic reticulum. (2 Marks)
- b) Describe the events that occur during metaphase of mitosis of a plant cell. (4 Marks)
- c) Explain the role of turgor pressure in herbaceous plants. (2 Marks)
- d) Give a brief account of how glucose enters the human muscle cell after digestion. (2 Marks)
- e) Outline four main features of cell theory. (2 Marks)

Question Two

- a) Explain how a student should focus on a specimen under a microscope. (3 Marks)
- b) Draw a well labeled diagram of a prokaryotic cell using a bacterial cell as an example. (3 Marks)
- c) Give a brief account of the three forms of passive transport. (3 Marks)
- d) Describe the structural composition of the cell membrane. (3 Marks)

SECTION B (36 MARKS)

Question Three

- a) Outline how you would prepare 1% sodium chloride solution for use in physiological experiment given the following atomic masses (sodium=23, chlorine=35.5) (4 Marks)
- b) Describe the process gastrulation (8 Marks)

Question Four

- a). Define the term cell cycle. (2 Marks)
- b). Outline the events that occur during the interphase. (6 Marks)
- c). Explain the differences between mitosis and meiosis. (4 Marks)

Question Five

- a). Describe the functions of the main components of a light microscope. (8 Marks)
- b). Describe four precautions to consider while using a microscope in the laboratory. (4 Marks)

Question Six

- a). Define the term osmosis. (2 Marks)
- b). Explain the importance of osmosis in plants (10 marks)

Question Seven

- a) Write short notes on the following:-
 - i) Chromosomes (4 Marks)
 - ii) Gram Positive cell. (4 Marks)
- b) State the role of mitosis in living organisms. (4 Marks)
