

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

SECOND YEAR EXAMINATION FOR THE DEGREES
OF BACHELOR OF EDUCATION (SCIENCE),
BACHELOR OF SCIENCE (GEN)

ZOOL 212: CELL BIOLOGY

STREAM: R

TIME: 2 HRS

DAY: WED [11.30 – 13.30]

DATE: 14/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: - Answer all the questions in section A and any of the two questions in B

SECTION A (40 MKS)

QUESTION ONE

State the two classes of fat cells and explain their difference. (5 marks)

QUESTION TWO

Explain the term “cell diversity”. (5 marks)

QUESTION THREE

Describe the process of protein synthesis by ribosomes. (5 marks)

QUESTION FOUR

Explain the process of crossing over and explain why this process plays an important role in living organisms. (5 marks)

QUESTION FIVE

Explain the process by which cells communicate to each other. (5 marks)

QUESTION SIX

(a) what do you understand by the term cellular abnormalities. (3 marks)

(b). Describe the term Omnis cellulae cellula as applied in cell biology. (2 marks)

QUESTION SEVEN

(a) Explain the function of the cell junctions. (2 marks)

(b) Explain any three functions of tight junctions. (3 marks)

QUESTION EIGHT

“Epithelia are classified into two depending on the ability of the tight junctions to prevent water and solute movement”, briefly explain the two classes of epithelia. (5 marks)

SECTION B (30 MARKS)

QUESTION NINE

Discuss the process of glucose breakdown in the mitochondria through the Krebs cycle pathway.
(15 marks)

QUESTION TEN

Explain how materials can be transported across the plasma membrane with or without the expenditure of energy.
(15 marks)

QUESTION ELEVEN

Draw well labelled diagrams of prokaryotic and eukaryotic cells and explain three things commons in both of the cells.
(15 marks)