



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 207: ESSENTIALS OF CELL BIOLOGY

DATE: 18/3/2022

TIME : 2:00 – 4:00 PM

Instructions

Answer Question 1 and any other two questions

Clearly and cleanly illustrate your answer as appropriate

1.
 - i. Define the processes of exocytosis and endocytosis (3 marks)
 - ii. Explain how cancer occurs (3 marks)
 - iii. Identify and differentiate the major types of lymphocytes in a mammalian body (3 marks)
 - iv. Briefly describe 'protein turnover' (3 marks)
 - v. Define the role of MHC molecules in the human body (3 marks)
 - vi. Explain the role of cell communication to living organisms. (3 marks)
 - vii. Briefly outline the process of transcription (3 marks)
 - viii. Citing an example, define "cytotoxicity" (3 marks)
 - ix. Compare and contrast the processes of apoptosis and necrosis (3 marks)
 - x. Using examples, explain the role of ligands in cellular communication (3 marks)
2. Discuss the types of receptors found in animal cells (20 marks)
3.
 - a. Discuss the process of receptor mediated endocytosis (10 marks)
 - b. Explain how proteins of the cell membrane facilitate cellular communication. (10 marks)
4.
 - a. Discuss the structure of the cell membrane (12 marks)
 - b. Describe the types of signaling found in multicellular organisms. (8 marks)
5. Discuss the molecules of communication between cells. (20 marks)