

**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES**

**SECOND YEAR FIRST SEMESTER EXAMS**

**COURSE CODE: SZL 201**

**COURSE TITLE: CELL BIOLOGY**

**TIME: 2 HOURS**

**Instructions to Candidates:**

Answer all questions in section A and any two questions in section B

**SECTION A: ANSWER ALL QUESTIONS (30 MARKS)**

1. Differentiate between prokaryotic and Eukaryotic Cells. (3 marks)
2. State three functions of Smooth Endoplasmic Reticulum. (3 marks)
3. How is the mitochondrion adapted to its functions? (3 marks)
4. Name three processes by which substances move across cell membranes. (3 marks)
5. Name the different structural parts of a chloroplast. (3 marks)
6. How would you differentiate between a plant cell and animal cell? (3 marks)
7. What role do ribosomes play in carrying out the genetic instructions? (3 marks)
8. Describe the composition of chromatin and State its function(s). (3 marks)
9. Describe the structural distinctions between Smooth and Rough Endoplasmic Reticulum. (3 marks)
10. State the functions of middle lamella, plasmodesmata and cell wall in a plant cell. (3 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)**

11. Describe the process of protein synthesis in plants. (20 marks)
12. With the aid of a diagram, explain how the cell membrane is adapted to its functions. (20 marks)
13. Describe the three different molecular structures of cytoskeleton and explain how their properties adapt them to their functions. (20 marks)
14. Discuss the structure of chloroplast, and the processes that occur at different parts of this organelle. (20 marks)