

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES.

**SBT 3101: CELLULAR BASIS OF LIFE**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. State the contribution of the following in cell biology
2. Watson and Crick. (1 mark)
3. Schleiden and Schwann. (1 mark)
4. (i) Explain briefly the theory of abiogenesis. (3 marks)
5. State why this theory was discredited? (3 marks)
6. State any five postulates of the cell doctrine. (5 marks)
7. Write explanatory notes on metabolism as a characteristic of life. (4 marks)
8. (i) Describe the structure of a typical virus. (3 marks)
9. Explain why viruses are said to be half alive half dead. (4 marks)
10. Describe plant apical meristem tissues. (6 marks)

**QUESTION TWO (20 MARKS)**

Describe the principal organic constituents of the cytoplasm. (20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the passive processes of membrane transport. (20 marks)

**QUESTION FOUR (20 MARKS)**

Justify the statement that distinct ‘factory districts’ lie within the cytoplasm. (20 marks)

**QUESTION FIVE (20 MARKS)**

Discuss mitotic cell division. (20 marks)