

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES, BACHELOR OF SCIENCE IN EDUCATION SCIENCES, BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION AND EDUCATION.

AND

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN ANIMAL HEALTH AND PRODUCTION,

**SZA 3200: CELL BIOLOGY**

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

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

**QUESTION ONE (30 MARKS)**

1. Differentiate between the following
2. Cytoplasm and cytosol. (2 marks)
3. Amphipathic and Hydrophilic molecules. (2 marks)
4. Eukaryotic and procaryotic cells. (2marks)
5. State factors that influence membrane fluidity. (6 marks)
6. State any two characteristics of the genetic code. (2 marks)
7. Draw a sketch of mosaic model of plasma membrane showing the positions of transmembrane, peripheral, surface proteins/membrane anchored proteins. (7 marks)
8. Explain two fundamental properties of cells . (4 marks)
9. List two functions of microfilament. (2 marks)
10. List major functions of endoplasmic reticulum. (3 marks)

**QUESTION TWO (20 MARKS)**

1. Discuss the importance of cell membrane fluidity. (10 marks)
2. Discuss membrane protein functions. (10 marks)

**QUESTION THREE (20 MARKS)**

Discuss the major types of cell junctions in animals. (20 marks)

**QUESTION FOUR (20 MARKS)**

1. Outline steps involved in a differential centrifugation to obtain various organelle endomembrane fractions, starting with homgenizer tissue. (10 marks)
2. Discuss the functions of plasma membrane. (10 marks)