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**University Examinations 2015/2016**

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE CERTIFICATE IN AGRICULTURE

**NAR 0140: SOIL GENESIS AND CLASSIFICATION**

**DATE: NOVEMBER 2015 TIME: 11/2 HOURS**

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

**QUESTION ONE (30 MARKS)**

1. Explain the meaning of the following terms: (5 Marks)
2. Weathering
3. Pedology
4. Soil horizon
5. Soil monolith
6. Soil texture
7. Highlight the functions of organic matter in the soil (4 Marks)
8. Explain the physical agents of weathering in soil formation (9 Marks)
9. Differentiate between solution and carbonation process of soil formation (4 Marks)
10. Explain 4 factors affecting nutrient uptake by plants (8 Marks)

**QUESTION TWO (15 MARKS)**

1. Explain how the following factors influence soil formation
2. Topography
3. Parental material
4. Living organisms
5. Describe the characteristics of igneous rocks (3 Marks)

**QUESTION THREE (15 MARKS)**

1. What is Cation Exchange Capacity? (1 Mark)
2. Explain the importance of Cation Exchange Capacity (4 Marks)
3. Explain 5 Best Management Practices for improving soil conditions for microbes (10 Marks)

**QUESTION FOUR (15 MARKS)**

1. Define soil profile (1 Mark)
2. Describe the soil forming processes (8 Marks)
3. Describe the master horizons in a soil profile. (6 Marks)

**QUESTION FIVE (15 MARKS)**

1. Distinguish between the following: (10 Marks)
2. Peat and Humus
3. Peds and Clods
4. Subsoil and Sub soiling
5. Active and Passive remote sensing system
6. Describe the technological tools available to today’s soil surveyor (5 Marks)