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University Examinations 2013/2014

THIRD YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN CROP PROTECTION

AAE 2355 – SOIL SCIENCE

DATE: DECEMBER 2013

TIME: 2HOURS

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

QUESTION ONE – 30 MARKS

- (a) Explain the following terms on soil science understanding point of view
- (i) Pedology
 - (ii) Soil texture
 - (iii) Eluviation
 - (iv) Colluvium
 - (v) Horizon
- (b) By giving two examples in each case, explain the characteristics and formation of the following rocks:
- (i) Igneous rocks
 - (ii) Sedimentary rocks
 - (iii) Metamorphic rocks (10marks)
- (c) Explain the chemical processes of rocks weathering. (10Marks)
- (d) Describe the B soil master horizons. (3Marks)
- (e) Explain the significance of colour in soil (2Marks)

QUESTION TWO – 20 MARKS

- (a) Explain how you would use the soil textural triangle to determine the soil classes of a sampled soil. (10Marks)
- (b) Explain how the soil forming factors influence the formation of soil in regions. (10Marks)

QUESTION THREE – 20 MARKS

- (a) Describe the various soil orders according to the USDA soil taxonomy. (12Marks)
- (b) By using an illustrations, explain soil structures by types. (6Marks)
- (c) Explain any four agricultural uses of soil (2Marks)

QUESTION FOUR – 20 MARKS

- (a) Describe soil consistence at wet, moist and dry soil conditions. (8Marks)
- (b) Explain the interaction phenomenon between soil water and soil air in the pedosphere. (6Marks)
- (c) Explain how loess, alluvial fans and marine sediments parent materials are formed. (6Marks)

QUESTION FIVE – 20 MARKS

- (a) Describe the eight classes of soils according to land capability classifications. (8Marks)
- (b) Explain the effects of soil organic matter. (8Marks)
- (c) Why is biological weathering considered as a soil developing process and not a formation process? (4Marks)