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University Examinations 2012/2013

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN HORTICULTURE

AHS 2208: SOIL GENESIS, PHYSICS AND CLASSIFICATION

DATE: APRIL 2013

TIME: 2 HOURS

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

QUESTION ONE – 30 MARKS

- a. Explain what is soil genesis. (4 Marks)
- b. Explain the factors that influence soil formation. (5 Marks)
- c. What are the sources of organic matter in soil. (8 Marks)
- d. Highlight the various physical weathering. (6 Marks)
- e. Explain the characteristics of A-horizon. (3 Marks)
- f. Explain the following: (4 Marks)
 - i. Eluviations
 - ii. Iluviation
 - iii. Soil profile
 - iv. Soil texture
- g. Explain how soil consistence is described and determined at the three moisture conditions. (wet soils, moist soils and dry soils) (3 Marks)

QUESTION TWO – 20 MARKS

- a. Describe the characteristics of the soil orders according to USDA soil classification. (14 Marks)
- b. What are hydromorphic soils. (6 Marks)

QUESTION THREE – 20 MARKS

- a. Explain how P-Horizon and E-Horizon occur in a soil profile horizonation. (4 Marks)
- b. Biological weathering is a soil developing process, rather than a soil forming process. Discuss. (8 Marks)
- c. Explain how you would determine the class textural of a soil using the textural triangle. (8 Marks)

QUESTION FOUR – 20 MARKS

- a. By using an illustration, describe the soil structure by types. (9 Marks)
- b. Explain how soil water is classified in relation to the plant growth. (4 Marks)
- c. Describe the factors that affect the water holding capacity of the soil. (7 Marks)

QUESTION FIVE – 20 MARKS

- a. Explain the ways land is classified and characterized according to different capacity. (8 Marks)
- b. Explain the characteristic features of diagnostic surface epipedons. (10 Marks)
- c. How does soil colour influence the soil fertility of a place. (2 Marks)