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University Examinations 2012/2013

SECOND YEAR, FIRST SEMSTER, EXAMINATIONS FOR DEGREE OF
BACHELOR OF SCIENCE IN HORTICULTURE

AHS 2208: SOIL GENESIS PHYSICS AND CLASSIFICATION

DATE: AUGUST 2013

TIME: 2 HOURS

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

QUESTION ONE – (30 MARKS)

- a) Define soil? (2 Marks)
- b) Explain the features of soils that are formed as a result of the parent materials transported by wind (4 Marks)
- c) By giving two examples, explain the three categories of soil forming rocks.(9 Marks)
- d) Describe the soil orders as characterized by USDA soil taxonomy (6 Marks)
- e) Explain the following terms:
 - i. Soil Texture
 - ii. Soil Family
 - iii. Translocation
 - iv. Colluvial debris
 - v. Elluviation(5 Marks)
- f) Explain the various sources of organic matter in the soil. (4 Marks)

QUESTION TWO (20 MARKS)

- a) What are the hydromorphic soils and how are they characterized (10 Marks)
- b) Explain how the soil colour is used to determine the geological properties of a region (10 Marks)

QUESTION THREE (20 MARKS)

- a) Use a diagram, demonstrate the interaction of the parent materials, air Water, and the organic matter in a pedosphere. (10 Marks)
- b) Explain the characteristics and distribution of the Andosols soils. (10 Marks)

QUESTION FOUR (20 MARKS)

- a) Explain the structure and the related properties soil water that makes water to have high ability to influence many soil processes. (15 Marks)
- b) Highlight five soil weathering processes (5 Marks)

QUESTION FIVE (20 MARKS)

- a) Define the soil catena. (3 Marks)
- b) Explain the various surface epipedons according to the 1975 USDA soil taxonomy. (12 Marks)
- c) Highlight the characteristic feature in the A – horizon. (5 Marks)