



Faculty of Agriculture  
Soils Department  
Soil & Water Programme  
Academic Year 2012-2013  
Second Semester  
Third Level (CH)

Final Theory Exam  
Organic Matter Chemistry  
Code No.: Sol 318  
Total Mark: 60  
Time: 2 Hours  
Date: 01.06.2103



The exam consists of (one sheet)  
Please answer all the following questions

**Part A: Answer all the following questions**

**30 marks**

1. Organic matter is divided into two groups, Explain. (7)
2. Compare between properties of humic acid and fulvic acid. (7)
3. What are the four hypothesis for humic substances synthesis? (8)
4. Explain the method for determining the following functional groups: (8)
  - a. Total acidity
  - b. COOH group
  - c. Total hydroxyls
  - d. Phenolic hydroxyls

**Part B: Answer only five (5) from the following questions**

**30 marks**

1. Give an example for: (6)
  - a. Common chemical names for chelating agents.
  - b. Biochemical compounds that form complexes with micronutrients.
2. Write short notes about: (6)
  - a. Non humic substances.
  - b. Types of clay-organic compound complexes.
3. Compare between degradative and non-degradative methods for characterization of humic substances. (6)
4. Draw a flow chart with explanation for the polyphenol theory for Humic substances formation. (6)
5. Clay-humus complexes have a significant role on soil fertility, explain. (6)
6. Mention the factors affecting the solubility of metal organic complexes. (6)
7. Select any one of the degradative methods for characterization of humic substances and explain. (6)

With best wishes

Examiners Committee  
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