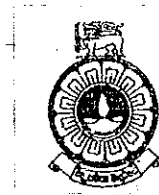


THE OPEN UNIVERSITY OF SRI LANKA  
 B.Sc. DEGREE PROGRAMME  
 BOTANY – LEVEL 05  
 FINAL EXAMINATION – 2016/17  
 BOU3104/BTE5105 – SOILS AND PLANT GROWTH



DURATION – TWO HOURS

Date – 13<sup>th</sup> January 2018

Time – 1.30 p.m. – 3.30 p.m.

Answer any four (04) questions.

1.
  - a. What are secondary minerals? (05min)
  - b. Distinguish between Kaolinite and Montmorillonite clays. (10min)
  - c. Explain how lower and higher plants affect on the constructive process of soil development. (15min)
2.
  - a. Explain concisely the importance of texture and structure of soil to have better plant growth. (20min)
  - b. How do soil tillage operations affect granulation and structure formation in soil? (10min)
3.
  - a. “Many factors affect on the abundance and distribution of microorganisms in soil”. Justify the above statement with suitable examples (15min)
  - b. What are “biogeochemical cycles”? (5min)
  - c. Briefly explain how human and environmental factors influence on the cycling of Carbon and Nitrogen in nature (No illustrations required) (10min).
4.
  - a. Name the factors that affect on the rate of soil erosion. (5min)
  - b. Discuss the effects of water and wind on the erosion of soil. (15min)
  - c. Elaborate on the selection of tree species to plant on degraded lands (10min)
5.
  - a. Briefly explain how acidic and saline soils are developed? (15min)
  - b. What do you mean by “soil amelioration”? (5min)
  - c. Write a brief note on the improvement of acidic soils through soil amelioration indicating effects and management practices. (20min)
6. Write short notes on any two (02) of the following. (15min each)
  - a. Soil development in relation to climate
  - b. Effects of plants on the physical and chemical properties of soil
  - c. Humus and its formation