



The Open University of Sri Lanka  
Faculty of Engineering Technology

**Technology (Engineering) Programme of Study**  
Final Examination – 2009  
**AEX 3231 Soil Management, Tillage and Traction**

Date : 19-03-2009  
Time : 0930-1230 hours  
Duration: Three (03) hours

---

Registration No:..... Index No:.....

---

**SECTION 2: Answer any four questions.**

1. Describe in detail, the characteristics of soil that influence crop growth, and the basic requirements of soils for crop growth.
2. What do you understand by the term “soil management?” Describe in detail the operations that are required to manage soil for crop growth.
3. Write short notes on any three of the following:
  - (a) Soil strength.
  - (b) The Coulomb equation
  - (c) A test for determining cohesion and the angle of internal friction of soil
  - (d) Passive and active failure of soil.
4. Describe the forces acting on a tillage tool and how these vary depending on implement width, rake angle and working depth. Your answer should be illustrated with simple diagrams where necessary.
5. Describe soil compaction, its causes, its impact on crop growth and how it may be reduced.
6. Discuss the advantages and disadvantages of using draught animals and two-wheel tractors for tillage in Sri Lanka.