



The Open University of Sri Lanka  
Faculty of Engineering Technology  
Technology (Engineering) Program

Final Examination- 2007

**AEX3231 Soil Management Tillage and Traction**



Date : 22-04-2008  
Time : 0930-1230 hours

**SECTION 2: Answer only four (04) questions**

1. (a) Explain what is meant by soil structure and soil texture. How do these two soil parameters influence the plant growth?  
(b) What are the factors that affect the soil temperature? How could the soil temperature be controlled to meet the requirements of crops.
2. (a) What is meant by the management of soil in agriculture?  
(b) Explain briefly how soil could be managed to meet the requirements of crops.
3. (a) State the characteristics of the tropical environment that affect agricultural yields.  
(b) What are the consequences of growing Other Field Crops in a paddy field?
4. (a) What are the factors that characterize a traditional paddy field? Why is it important to preserve these characteristics?  
(b) Describe how the maintenance of standing water and economical use are ensured in paddy fields.
5. (a) What is meant by soil strength?  
(b) Explain how soil fails when subjected to principal stresses.
6. A sample of soil is subjected to principal stresses  $60\text{MN/m}^2$  and  $100\text{MN/m}^2$ . The soil has cohesion of  $10\text{MN/m}^2$  and angle of internal friction of  $30^\circ$ . Is the soil in failure condition? If not, what magnitude of stress needs to be applied to cause the failure.