

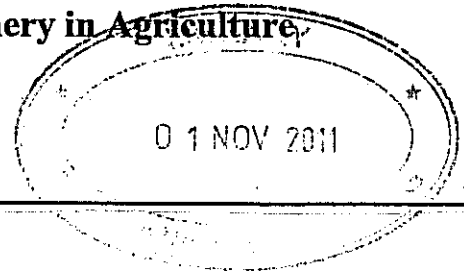


The Open University of Sri Lanka  
Faculty of Engineering Technology



**Technology (Engineering) Programme of Study**  
**Final Examination – 2010/2011**  
**AEX 5230 Power and Machinery in Agriculture**

**Date** :11/03/2011  
**Time** :0930-1230  
**Duration:** Three (03) hours



**SECTION 2: Answer any four (4) questions.**

1. Discuss in detail the advantages and disadvantages of farm mechanisation in Sri Lanka.
2. Describe the factors that influence the selection of machines for specific types of agricultural work.  
  
4800 hectares of row crop is to be planted in a period of 14 days, each with 12 hours of possible field time. Working speed is 6.4 km/h and 0.75 m spacing is required. Assuming 70% field efficiency, find the minimum size of planter needed.
3. Write short notes on three of the following:
  - a) Axial flow paddy thresher.
  - b) Stripper type harvester.
  - c) Soil shear test using a translational shear box.
  - d) Torque and power curves of agricultural tractors and methods of matching torque to load.
4. Describe in detail, the advantages and disadvantages of the power tiller (two-wheel tractor) in comparison with the large four-wheel tractor in Sri Lanka.
5. Describe what is meant by tillage. What are the advantages and disadvantages of different degrees of tillage (heavy, medium, light and zero) ?
6. Describe in detail, how renewable sources of energy can be used to reduce the dependence of a farm on fossil fuels.