



The Open University of Sri Lanka
Faculty of Engineering Technology

Technology (Engineering) Programme of Study
Final Examination – 2009
AEX 5230 Power and Machinery in Agriculture

Date : 12/03/2010
Time : 09.30 - 12.30 hours
Duration: Three (03) hours

Registration No:.....

Index No:.....

SECTION 2: Answer any four (4) questions.

1. Discuss in detail how you would decide whether to use heavy tillage, minimum tillage or zero tillage in farmland that has already been cleared but is being cultivated for the first time.
2. 480 hectares of row crop is to be planted in a period of 21 days, each with 10 hours of possible field time. Working speed is 6.0 km/h and 0.75 m spacing is required. Assuming 75% field efficiency, find the minimum size of planter needed.
3. Write short notes on three of the following:
 - a) Mould board plough.
 - b) Mechanical harvesting
 - c) Angle of internal friction of soil
 - d) Rotary tiller.
4. Describe in detail, with the aid of a suitable sketch, the forces acting on a rear wheel drive four wheel tractor travelling at uniform speed on a level surface, pulling an implement attached to its drawbar. What are the tractor characteristics and soil properties affecting the maximum drawbar pull that can be exerted?
5. Discuss the advantages and disadvantages of farm mechanisation in Sri Lanka.
6. Describe in detail, two methods of using agricultural waste for energy in a farm.