



The Open University of Sri Lanka
Faculty of Engineering Technology
Industrial Studies (Agriculture) Programme of Study
Final Examination 2013/2014
AEI3235 – Land & Soil Tillage Management

Date : 03/09/2014
Time : 09.30 a.m. – 12.30 p.m.
Duration : Three (03) hours

Registration Number:.....

Section 02 – Answer any four (04) out of the six (06) questions. You may use answer books and/or sheets to answer this section.

- 1) a) Discuss the importance of macro nutrients on plants.
b) Discuss the consequences of having low organic matter in soil.
- 2) a) Discuss the effects of soil salinity.
b) Explain land reclamation giving examples. Discuss different land reclamation methods available.
- 3) a) A trapezoidal depression exists along the width of a road, which needs to be levelled. The depth of the depression is 30 cm. Lengths at the opening and the bottom of the depression are 1.0 m and 60 cm, respectively. The width of the road is 2.5 m. Calculate the volume of soil needed to fill the depression.
b) Describe the new technologies used in land levelling.
- 4) Discuss the direct and indirect impacts of tillage on soil and plants.

- 5) a) Discuss the causes for soil compaction. Explain different methods of identifying soil compaction.
- b) A soil sample collected during a survey has a total volume of 400 cm^3 . This sample consists of 65% solids, 20% water, and 15% air by volume. If the oven dry weight of the soil sample is 600 g, calculate the particle density and bulk density of the soil sample.
- 6) a) Describe the machinery used in seeding with their advantages and disadvantages.
- b) Explain the constraints related to mechanization of rice transplanting.