

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Agricultural & Plantation Engineering



Study Programme : Bachelor of Industrial Studies Honours
Name of the Examination : Final Examination
Course code and Title : AGI3450 Land and Soil Tillage Management
Academic year : 2022/2023 /
Date : 13th February 2024
Time : 0930 – 1230 hrs
Duration : 3 hours

Registration Number Index Number.....

Instructions

1. Contain SIX (06) essay type questions. You are required to answer **ONLY FOUR (04) questions**. You may spend about **two hours** to answer the questions in this section. Answer for each question should commence from a new page.
2. Read the questions carefully before answering.
3. Please note that you should write your registration number and index number in the space provided above. Do not write your name.

SECTION 2

1. Briefly explain the properties of soil and their role on plant growth and development. (25 mark)
 2.
 - a. Describe the influence of adding organic matter on soil bulk density and porosity. (10 mark)
 - b. In a soil profile, ten cubic centimeter contains solids and pore spaces and the whole 10 cm^3 has a mass of 13.2g. Calculate the bulk density of it. (5 mark)
 - c. If above soil profile, all the solids were compressed to the bottom, calculate the particle density of it. (5 mark)
 - d. Using the answers of b and c, calculate the particle density of the soil. (5 mark)
 3.
 - a. Describe the methods available for land levelling. (10 mark)
 - b. Briefly describe the importance of land levelling on agricultural productivity. (15 mark)
 4. Briefly explain the land reclamation methods that you can practices to convert eroded lands in to a productive agricultural lands (25 marks)
 - 5: Briefly explain the role of microorganisms on soil improvement. (25 marks)
 6. Write short note on following. (25 mark)
 - a. Reduced tillage
 - b. Contour lines
 - c. Land use planning
 - d. Influence of soil compaction on soil aeration and water holding capacity
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