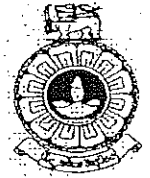


The Open University of Sri Lanka  
Faculty of Engineering Technology  
Department of Agricultural & Plantation Engineering



Study Programme : Bachelor of Industrial Studies Honors  
Name of the Examination : Final Examination  
Course code and Title : AGX4356 Soil Science  
Academic year : 2020/2021  
Date : 23 January 2022  
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. a. Define the term of soil. (10 mark)  
b. Briefly describe the importance of soil constituent on plant growth. (15 mark)
2. a. Draw a detailed diagram of a soil profile. (5 mark)  
b. Briefly describe the factors affecting soil-forming processes and soil development. (20 mark)
3. a. Describe three factors influencing granule formation and development. (10 mark)  
b. Briefly describe the importance of soil air and soil temperature on plant growth. (15 mark)
4. Briefly describe the nitrogen cycle with a diagram and explain how nitrogen cycle affect human activities. (25 mark)
5. a. 20 kg of Chemical fertilizer mixture with 3:1:5 (N:P:K) and it consisted 36% of filler material from total fertilizer weight. Calculate the amounts of N, P and K need to prepare above mentioned fertilizer with 3:1:5. (10 marks).  
b. Briefly describe the potential of organic fertilizer usage in vegetable cultivation. (15 mark)
6. Write short note on following,
  - a. Indicator plant. (5 mark)
  - b. Characteristic features of Reddish Brown Earth soil. (5mark)
  - c. "Bronzing effect" in paddy cultivation. (5mark)
  - d. Physical weathering. (5 mark)
  - e. Carbon nitrogen ratio. (5 mark)