

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



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| Study Programme | :Bachelor of Industrial Studies Honours in Agriculture |
| Name of the Examination | :Final Examination |
| Course Code and Title | :AGX4540/AEX4240 Plant and Soil Science |
| Academic Year | :2017/2018 |
| Date | :24 th January 2019 |
| Time | :0930-1230hrs |

SECTION II: Answer any four (04) questions

- Q1.** a) Briefly explain what is meant by vegetative propagation.
 b) Describe the different methods involved in vegetative propagation.
- Q2.** a) Briefly explain the characteristics of saline soil, saline-sodic soil and sodic soil.
 b) Explain how amending of poorly drained soil is done.
- Q3.** a) Two hectare of Chilli cultivation is sprayed with a 13-11-06 grade fertilizer mixture. This contains 13% of N, 11% of P_2O_5 and 6% of K_2O . P and K contents are given in oxide forms. Calculate the amount of Ammonium Sulphate, TSP and MOP required formulating the above fertilizer mixture, the total quantity of fertilizer used in the mixture and the amount of filling material that should be added.
 Relative percentage of nutrients is as follows:
 Urea: N – 46 %
 Ammonium Sulphate: N – 21 %
 TSP: P_2O_5 – 45%
 MOP: K_2O – 60%
 b) If the farmer decides to replace Ammonium Sulphate with Urea, Calculate the amount of Urea he should apply to the field.
- Q4.** a) Explain the importance of soil as a medium for plant growth.
 b) Describe the mechanism involved in cation exchange.
- Q5.** a) Discuss the main divisions of Nitrogen cycle, while describing the various micro-organisms responsible for each stage.
- Q6.** a) Define the following properties of soil;
 i. Bulk density ii. Prosimy iii. Particle density iv. Soil texture
 b) Explain the importance of soil temperature on plant growth.

