

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)  
**B.Tech II Year I Semester Regular & Supplementary Examinations December-2023**  
**PRINCIPLES OF AGRONOMY & SOIL SCIENCE**  
(Agricultural Engineering)

**Time: 3 Hours****Max. Marks: 60**

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Explain the effect of Edaphic Factors on Crop Growth and Development CO1 L2 8M  
b Distinguish between Manures and Fertilizers CO1 L2 4M

**OR**

- 2 a List out and explain the Principles of Organic Farming in detail. CO1 L1 8M  
b Operational structure of National Programme for Organic Production CO1 L3 4M

**UNIT-II**

- 3 a Define Parallel cropping and Companion cropping? What are the advantages and disadvantages of Intercropping. CO2 L1 6M  
b Define Crop Rotation and its Characteristics. CO2 L1 6M

**OR**

- 4 a Explain briefly about the key elements in Weed Management. CO2 L2 7M  
b Discuss Multi-tier Cropping System with examples and neat labelled diagram. CO2 L4 5M

**UNIT-III**

- 5 a Discuss the Factors affecting Weathering of Minerals with suitable examples and diagrams. CO3 L2 8M  
b Mention and explain the Factors affecting the porosity of soil. CO3 L1 4M

**OR**

- 6 a Categorize the soil structure and describe them with suitable diagrams CO3 L3 8M  
b Show the tabular form of textural Class names developed by U.S.Department of Agriculture. CO3 L1 4M

**UNIT-IV**

- 7 a Explain the Role of Organic Matter in Soil Fertility. CO4 L2 8M  
b What are the factors affecting Ion Exchange. CO4 L1 4M

**OR**

- 8 a Describe Carbon:Nitrogen Ratio in detail. CO4 L2 6M  
b What are the factors affecting Ion Exchange. CO4 L1 6M

**UNIT-V**

- 9 a Explain Criteria of Essentiality. CO5 L2 4M  
b Mention the functions and deficiency symptoms of Potassium and Phosphorous. CO5 L3 8M

**OR**

- 10 a List out and explain the common problems faced from using the poor quality water. CO5 L1 4M  
b Enlist the Toxicity symptoms of Nitrogen, Phosphorous, Iron, Manganese and Boron. CO5 L2 8M

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