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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year I Semester Regular Examinations May-2022

PRINCIPLES OF AGRONOMY & SOIL SCIENCE

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

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|---|---|---|----|----|
| 1 | a | List out the Problems in Sustainable Agriculture | L1 | 6M |
| | b | Ideological difference between Organic Agriculture and Conventional (Chemical) Agriculture. | L3 | 6M |

OR

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|---|---|--|----|----|
| 2 | a | What are the disadvantages of High External Input Agriculture? | L1 | 6M |
| | b | Factors influencing Fertilizer application methods. | L2 | 6M |

UNIT-II

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|---|---|---|----|----|
| 3 | a | Define Gravitational Water, Capillary Water and Hygroscopic water. | L1 | 6M |
| | b | Draw a flowchart depicting different steps in water movement in the soil-plant-atmosphere system. | L4 | 6M |

OR

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|---|---|--|----|----|
| 4 | a | State and explain any eight Agronomic (cultural) weed management practices. | L3 | 8M |
| | b | Define the water requirement of crops and list out the factors that influence on Evapotranspiration. | L1 | 4M |

UNIT-III

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|---|---|---|----|----|
| 5 | a | Categorize the soil structure and describe them with suitable diagrams. | L3 | 8M |
| | b | Show the tabular form of textural Class names developed by U.S.Department of Agriculture. | L1 | 4M |

OR

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|---|---|---|----|----|
| 6 | a | Describe the factors of Soil Formation. | L2 | 8M |
| | b | Define Particle density and Bulk density and write down its SI units. | L1 | 4M |

UNIT-IV

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|---|---|--|----|----|
| 7 | a | Define Soil Colloids and explain its eight properties. | L3 | 8M |
| | b | Define Amorphous Clays and CEC. | L1 | 4M |

OR

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|---|---|---|----|----|
| 8 | a | Describe the problems of Soil Acidity. | L2 | 8M |
| | b | Define Soil Organic Matter and explain Carbon sequestration in Soils. | L1 | 4M |

UNIT-V

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|---|---|--|----|----|
| 9 | a | Solve the Problem: Assume irrigation water has a conductivity of 1.08 dSm-1. The field crop planted has a 50 percent yield reduction at soil saturation extract conductivity of 7 dSm-1 (drainage water). Calculate the additional amount of water required to apply if the water needed to wet the profile is 6.35 cm (2.5 inches). | L3 | 4M |
| | b | Mention the conditions for management and use of poor quality water. | L2 | 8M |

OR

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|----|---|---|----|----|
| 10 | a | List down the Boron and Copper deficiency symptoms. | L1 | 4M |
| | b | Enlist the Toxicity symptoms of Nitrogen, Phosphorous, Iron, Manganese and Boron. | L2 | 8M |

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