

Reg. No:

--	--	--	--	--	--	--	--	--	--

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

B.Tech II Year II Semester Supplementary Examinations July-2021

PRINCIPLES OF SOIL SCIENCE

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

- 1 a What are the different factors affecting soil formation? 2M
- b Define the texture, structure in soil. 2M
- c What is CEC and AEC in soil ? 2M
- d What is meant by acid soils? How it is formed? 2M
- e Define Soil fertility. What are the factors influencing soil fertility? 2M

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

- 2 a Explain Physical, chemical, biological weathering. How weathering influence on soil formation? 5M
- b Explain the stepwise procedure for formation and composition of soil. 5M

OR

- 3 a How soil science is important in agricultural engineering? Give one example. 5M
- b Explain the importance of Igneous, Sedimentary and Metamorphic rocks in soil formation. 5M

UNIT-II

- 4 a What is tillage? Define the primary and secondary tillage. List out the advantages and disadvantages of tillage. 5M
- b What is gaseous exchange in soil? How it effects plant growth? What are the factors influencing gaseous exchange? 5M

OR

- 5 a Define soil heat, soil resistivity and heat conductance in soil. 5M
- b What is soil water retention and soil water movement? How they affect soil physical properties? 5M

UNIT-III

- 6 a What is EC in soil science? Why is soil EC important? How does EC affect plant growth? 5M
- b Define soil colloids and explain their significance. List out types of colloids. 5M

OR

- 7 a What is the buffering capacity of the soil? What are the factors affecting buffering capacity? 6M
- b What is base saturation in soil? Write the importance of CEC in soil. 4M

UNIT-IV

- 8 a Explain the reclamation of acid soils. 6M
- b How the sodic soils are formed? Write the characteristics of sodic soils. 4M

OR

- 9 a What is meant by saline soils? Write the characteristics of saline soils. 5M
- b Explain the reclamation of sodic / alkali soils 5M

UNIT-V

- 10 a What does liquid fertilizer mean? How is it beneficiary to farmers? 5M
- b Explain about organic and inorganic fertilizers. 5M

OR

- 11 a What is meant by chemical fertilizer? Write the classification of fertilizers. 5M
- b What are the differences between organic and bio fertilizers? Write their advantages with regard to plant growth. 5M