

Reg. No: 

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

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech II Year I Semester Regular Examinations Nov/Dec 2019**  
**PRINCIPLES OF AGRICULTURAL ENGINEERING**  
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

**PART-A**

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

- |   |   |   |    |
|---|---|---|----|
| 1 | a | Define watershed.   | 2M |
|   | b | List out names of any four storage structures suitable for cereals storage                          | 2M |
|   | c | What are the differences between tractors and other on-road vehicles such as cars and buses?        | 2M |
|   | d | What are the differences between ripening chamber and cold storage chamber?                         | 2M |
|   | e | What are the two differences between solar water heater and panels used for solar power generation? | 2M |

**PART-B**

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

**UNIT-I**

- |           |   |   |    |
|-----------|---|---|----|
| 2         | a | What are the different interventions in the watershed that can prevent the soil loss and conserve the water? Explain.   | 5M |
|           | b | What are the differences between the organic and inorganic fertilizers?   | 5M |
| <b>OR</b> |   |   |    |
| 3         | a | Write about the importance of agricultural engineering in solving the today's soil, water and food problems.  | 5M |
|           | b | Explain the working and importance of Anemometer, bright sunshine recorder and thermometers in single Stevenson screen, which are part of meteorological observatory. | 5M |

**UNIT-II**

- |           |   |  |    |
|-----------|---|--|----|
| 4         | a | With a neat diagram, explain the construction details of wire floored poultry house.   | 5M |
|           | b | With a neat diagram, explain how the fan-and-pad system helps in achieving summer cooling.   | 5M |
| <b>OR</b> |   |  |    |
| 5         | a | Write about the construction details of the silos.   | 5M |
|           | b | What are the different types of storage structures available for storage of food grain, feed and forage? Explain with neat diagrams. | 5M |

**UNIT-III**

- |   |   |   |    |
|---|---|---|----|
| 6 | a | What is tillage? Write the objectives of performing tillage in soils.                   | 5M |
|   | b | What are the different parameters to be considered for selection of a suitable tractor? | 5M |

**OR**

- |   |   |  |    |
|---|---|--|----|
| 7 | a | With neat diagrams, write about the share and mould board. | 5M |
|   | b | What are the different types of sprayers? Explain.         | 5M |

**UNIT-IV**

- |   |   |  |    |
|---|---|--|----|
| 8 | a | Write different properties of packaging materials that have significant impact on the storage of snacks. | 5M |
|   | b | Write about the thin layer and deep bed drying.  | 5M |

**OR**

- |   |   |   |    |
|---|---|---|----|
| 9 | a | Write about the construction and working of a belt conveyor.                | 5M |
|   | b | Explain various steps involved in preparation of pasteurized packaged milk. | 5M |

**UNIT-V**

- 10 a** Classify the windmills based on the axis of rotation. With a neat diagram, explain Savonius type of windmill. **5M**
- b** With the help of a neat diagram, explain the constructional details and working principle of a KVIC type biogas plant. **5M**

**OR**

- 11 a** What are the new sources of energy, which have the potential for local exploitation? Write any five advantages of renewable energy sources. **5M**
- b** Disposing of agricultural waste such as straw becomes a big problem now. Write your suggestions for disposing of such wastes and any alternative uses of them. **5M**

**\*\*\*END\*\*\***