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

**B.Tech II Year II Semester Regular Examinations July-2021**

**FARM MACHINERY & EQUIPMENT-I**

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

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

**UNIT-I**

- 1 Define custom hiring. Discuss about cost calculation of farm tractor by using straight line method. L6 12 M

OR

- 2 What are the different sources of farm power? Explain them. L1 12 M

**UNIT-II**

- 3 a Solve the problem consists of a three bottom 40 cm MB plough has a working depth of 15 cm and draft is 1600 kg. Field efficiency is 70% and working speed is 4 km/h. Find i) Unit draft ii) Power required iii) Actual field capacity L6 6M

- b A five tyne cultivator having tine spacing 8 cm, working depth of 5 cm and speed is 3 km/h. turning loss is 10%. Soil resistance is 0.6 kg/cm<sup>2</sup>. Width of each furrow is 5 cm. calculate a) Time to cover one ha, b) Maximum draft, c) Required power L4 6M

OR

- 4 A farmer purchased a tractor of 25 kW power at a total cost of Rs. 600000/- and a three bottom plough of 30 cm bottom width at Rs. 40000/- only. The fuel consumption of the tractor was 6 l/h at the ploughing speed of 5 km/h. Calculate the area ploughed per hour and determine the cost of ploughing per ha. Make necessary assumptions if any. L5 12 M

**UNIT-III**

- 5 Define trenchers. Distinguish between wheel type and ladder type trenching machines. L4 12 M

OR

- 6 Where do you use scraper? Explain in briefly about different types of scrapers. L1 12 M

**UNIT-IV**

- 7 Explain in briefly about different types of seed metering mechanism. L1 6M

OR

- 8 a Explain the components of seed cum fertilizer drill. L1 8 M

- b Explain the different types of furrow openers with neat sketch. L1 4 M

**UNIT-V**

- 9 Explain in briefly about different types of fertilizer application equipments. L1 12 M

OR

- 10 a Differentiate between knapsack sprayer and power sprayer. L1 6M

- b Discuss about nozzle of sprayer. L6 6M

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