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Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Regular & Supplementary Examinations Nov/Dec 2019
FARM MACHINERY AND EQUIPMENT-I
(AGRICULTURAL ENGINEERING)

Time: 3 hours   Max. Marks: 60
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

1	a	Explain briefly about heat treatment of steel.	6M
	b	Explain about different sources of farm power.	6M

OR

2	a	Explain briefly about selection of a tractor.	6M
	b	What are the merit and demerits of source of farm power?	6M

UNIT-II

3	a	Describe the parts of a Mould board plough with the help of neat sketch.	6M
	b	Distinguish between standard disc plough and vertical disc plough.	6M

OR

4	a	What are the advantages and disadvantages of disc plough?	6M
	b	How do you differentiate between spring tooth harrow and spike tooth harrow?	6M

UNIT-III

5	a	Explain briefly about different types of scraper	6M
	b	What are the earth moving equipment's commonly used for handling of earth?	6M

OR

6	a	A farmer purchased a tractor of 25 kW power at a total cost of Rs. 500000 and a three bottom plough of 30 cm bottom width at Rs. 30000/- only. The fuel consumption of the tractor was 6 ltr/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.	7M
	b	Distinguish between wheel type and ladder type trenching machines.	5M

UNIT-IV

7	a	Explain the procedure for calibration of seed drill.	7M
	b	Explain about different types of seed metering mechanisms.	5M

OR

8	a	Explain briefly about different types of sprayers.	6M
	b	Explain briefly about different parts of sprayers and dusters.	6M

UNIT-V

9	a	Line of pull of a MB plough is 15° with the horizontal & is in a vertical plane which is at an angle of 12° with the direction of travel. Calculate a) required pull if draft of plough is 1000 kg & b) side draft (given cos 15°=0.96, cos 12°=0.97 & sin12°=0.20).	6M
	b	Explain briefly about different types of disc harrow.	6M

OR

10	a	A farmer purchased a tractor of 35 kW power at a total cost of Rs. 500000 and a three bottom plough of 30 cm bottom width at Rs. 30000/- only. The fuel consumption of the tractor was 6 ltr/h at the ploughing speed of 5 km/h. Calculate Area ploughed per hour and Determine the cost of ploughing per ha. Make necessary assumptions if any.	12M
	b	Explain briefly about different types of fertilizer application equipment.	5M

END