O.P.Code: 20AG0704	R20	H.T.No.									

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

B.Tech II Year II Semester Regular & Supplementary Examinations June-2024

FARM MACHINERY & EQUIPMENT-I

(Agricultural Engineering)

Time: 3 Hours **Max. Marks: 60**

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

		UNIT-I			
1	**a**	Define farm mechanization and what are the objectives of it?	**CO1**	**L1**	**5M**
	b	Classify the materials of construction of farm equipment and explain the different case hardening methods.	**CO1**	**L2**	**7M**
		OR			
2	**a**	List out and explain different sources of farm power.	**CO1**	**L2**	**8M**
	b	Give the classification of farm machines.	**CO1**	**L2**	**4M**
		UNIT-II			
3		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 the area ploughed per hour and determine the cost of ploughing per ha. Make necessary assumptions if any.	**CO2**	**L4**	**12M**
		OR			
4	**a**	Explain the components of disc plough with neat sketch.	**CO2**	**L2**	**6M**
	b	Listout and explain the different types of tillage.	**CO2**	**L2**	**6M**
		UNIT-III			
5	**a**	Define earth moving operation and list out the machines commonly used for earthmoving job.	**CO3**	**L1**	**4M**
	b	Explain the working principle of wheel type and ladder type trenchers?	**CO3**	**L2**	**8M**
		OR			
6	**a**	Illustrate the following terms: (i) Struck capacity (ii) Rated capacity (iii) Optimum depth of cut (iv) Bank measure volume (v) Loose measure volume (vi) Output of power shovel.	**CO3**	**L2**	**6M**
	b	How do you differ excaloader and bulldozer? Draw the neat sketch of power shovel with all components.	**CO3**	**L2**	**6M**
		UNIT-IV			
7	**a**	Explain the different types of sowing methods briefly.	**CO4**	**L2**	**8M**
	b	Explain the construction details of the wetland weeder.	**CO4**	**L2**	**4M**
		OR			
8	**a**	Explain briefly about the seed cum fertilizer drill.	**CO4**	**L2**	**7M**
	b	Define calibration of the seed drill. Write the functions of the planter and seed drill.	**CO4**	**L2**	**5M**
		UNIT-V			
9	**a**	Differentiate between sprayer and duster. Explain about manually operated knapsack sprayer.	**CO5**	**L2**	**8M**
	b	List out the various spray nozzles and explain the triple-action nozzle.	**CO5**	**L2**	**4M**
		OR			
10	**a**	Write the purpose and function of plant protection equipment. And explain the basic components of the sprayer.	**CO5**	**L2**	**7M**
	b	What are the steps involved in the calibration of the sprayer?	**CO5**	**L2**	**5M**

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