Q.P. Code: 16AG713 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year II Semester Regular & Supplementary Examinations October-2020

TRACTOR SYSTEMS AND CONTROL

(Agricultural Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1		Explain the principle of operation of differential unit with neat diagram.	**12M**

OR

2		A single plate clutch with both sides effective has an outer diameter of 30 cm and inner diameter of 20 cm. The maximum intensity of pressure at any point in the contact surfaces does not exceed 1 Kg/cm2. If the coefficient of friction is 0.3, determine the power transmitted by clutch operating at 2000 rpm speed.	**12M**

UNIT-II

3		Explain principle of operation and working of hydraulic brake with neat diagram.	**12M**

OR

4	**a**	Explain working of mechanical steering system with neat diagram.	**8M**
	b	Explain Toe-in, Toe out and King pin inclination with neat diagrams.	**4M**

UNIT-III

5	**a**	Explain position control in short.	**6M**
	b	Explain draft control in short.	**6M**

OR

6		Explain the construction and working of three point linkage mechanism with neat diagram	**12M**

UNIT-IV

7	**a**	What are the advantages of three point linkage hitch in a tractor?	**6M**
	b	A tractor has a speed of 1000 m/min at normal engine speed. A feed mill has recommended speed of 2100 rpm. Find the size of pulley, needed on feed mill.	**6M**

OR

8	**a**	What are the factors affecting traction?	**6M**
	b	In detail explain the methods of determining the C.G measurement of tractor.	**6M**

UNIT-V

9	**a**	Explain Ergonomic consideration and operation safety of tractor	**8M**
	b	What is ROPS? Explain	**4M**

OR

10	**a**	What is weight transfer?	**4M**
	b	Explain tractor as a spring mass system.	**8M**

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