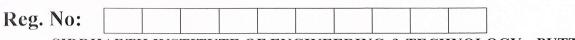
Time: 3 hours



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

B.Tech II Year II Semester Supplementary Examinations March-2021 THERMODYNAMICS & HEAT ENGINES

(Agricultural Engineering)

PART-A

Max. Marks: 60

R18

		(Answer all the Questions $5 \ge 2 = 10$ Marks)	
1	a	Define State.	2M
	b	Define Wet steam.	2M
	c	Define Enthalpy.	2M
	d	Define Flow process.	2M
	e	Mention Boiler Mountings.	2M
		$\frac{\mathbf{PART-B}}{\mathbf{PART-B}}$ (Answer all Five Units 5 x 10 = 50 Marks)	
		UNIT-I	
2	a	Show that Heat and Work is a path function and not a property of the system.	5 M
	b	What is the Quasi static Process? What are its characteristics features?	5M
		OR	
3	a	Explain about Thermodynamic Equilibrium.	5M
	b	Differentiate between cyclic and non cyclic process.	5 M
		UNIT-II	
4	a	Define the First Law of thermodynamics. Prove that IE is the property of the system.	5 M
	b	Derive the Steady flow Energy equation for compressor.	5M
		OR	
5	a	State the second law of thermodynamics.	5M
	b	Explain the Specific heat capacities $(C_{v\&}C_p)$.	5M
		UNIT-III	
6	a	What is Avogadro's Law?	5M
	b	State the Daltons law of partial pressure.	5M
		OR	
7	a	Explain the difference between Isothermal and Adiabatic Process.	5M
	b	What is the gas equation for ideal gas?	5 M
		UNIT-IV	
8	a	Explain the limitation of Carnot cycle.	4M
	b	Explain the P-V,P-T, T-S diagram of Pure substance.	6M
		OR	
9	a	Derive an Expression for thermal efficiency Carnot cycle draw PV&TS diagram.	5 M
	b	Derive an Expression for thermal efficiency Sterling cycle draw PV&TS diagram.	5M
1.0		UNIT-V	
10		Explain drum less boiler with neat sketch.	5M
	b	How are boilers classified?	5M
1.1		OR	
11	a	Give the comparison between fire tube and water tube boilers.	5M
	b	What are the silent feature of good boiler?	5M

END