R18

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year I Semester Regular Examinations December 2018
THERMAL AND FLUID ENGINEERING
(EEE)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions **5 x 2 = 10** Marks)

1	a	Define Thermal Power.	2M
	b	Define First law Thermodynamics.	2M
	c	Define Dryness Fraction.	2M
	d	Define Viscosity.	2M
	e	Define coefficient of contraction.	2M

PART-B
(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	What are the major different hydroelectric power stations in India.	5M
	b	What is need of Chimney in thermal power plant?	3M
	c	What is the purpose of Draft tube?	2M

OR

3	a	Differentiate between the boiler and condenser.	5M
	b	List out various elements of hydroelectric power station with a neat sketch.	5M

UNIT-II

4	a	What do you understand by path function and point function?	5M
	b	Define property? Distinguish between intensive and extensive property	5M

OR

5	a	Define and explain Zeroth Law of Thermodynamics	5M
	b	State and explain Degradation law of thermodynamics.	5M

UNIT-III

6	a	Explain Limitations of Carnot cycle.	5M
	b	Comparison between Rankine cycle and Carnot cycle	5M

OR

7	a	What is difference between fire tube and water tube Boiler?	5M
	b	Heat supplied to a Carnot engine working between 0^0C and 100^0C, 1800 KJ. How much useful work can be done by the engine?	5M

UNIT-IV

8	a	Define the following fluid properties: Density, weight density, specific volume and specific gravity of a fluid.	5M
	b	Explain the terms: (i) Path line (ii) Streak line (iii) Stream line, and (iv) Stream tube	5M

OR

9	a	Define the equation of continuity. Obtain an express for continuity equation for a one-dimensional flow.	5M
	b	What is a manometer? How are they classified? Explain with sketches.	5M

UNIT-V

10　a　Derive Darcy Weisbach equation.　　　　　　　　　　　　　　　　　5M

　　b　Derive equation for loss of head due to sudden enlargement.　　　　　5M

OR

11　a　What is a venturimeter? Derive an expression for the discharge through a venturimete　　　5M

　　b　Define and explain the terms: (i) Hydraulic gradient line and (ii) Total energy line.　　5M

END