

Reg. No:

--	--	--	--	--	--	--	--	--	--

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

B.Tech I Year I Semester Regular Examinations July-2021

THERMAL AND FLUID ENGINEERING

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- | | | | |
|----------|--------------------------------------------------------|-----------|-----------|
| 1 | a What are the components Hydro electric power plants? | L2 | 4M |
| | b Define chimney. What are the different types? | L1 | 4M |
| | c What is the function of cooling tower? | L1 | 4M |

OR

- | | | | |
|----------|---------------------------------------------------------|-----------|-----------|
| 2 | a Define Property, Heat and Work. | L1 | 6M |
| | b Explain the different types of thermodynamic systems. | L2 | 6M |

UNIT-II

- | | | | |
|----------|--------------------------------------------------------------------|-----------|-----------|
| 3 | a Define Super heated steam and entropy of steam with formulae. | L1 | 6M |
| | b What is the difference between water tube and fire tube boilers? | L4 | 6M |

OR

- | | | | |
|----------|----------------------------------------------------|-----------|-----------|
| 4 | a Define pressure gauge and water level indicator. | L1 | 4M |
| | b Explain working of economizer with neat sketch. | L2 | 8M |

UNIT-III

- | | | | |
|----------|----------------------------------------------------------------|-----------|-----------|
| 5 | a Write short notes on surface tension and capillarity. | L1 | 6M |
| | b Define compressibility and specific weight with their units. | L1 | 6M |

OR

- | | | | |
|----------|----------------------------------------------------------------------|-----------|-----------|
| 6 | a Derive an expression of surface tension inside the liquid droplet. | L4 | 6M |
| | b Derive an expression for capillary rise and fall in a glass tube. | L4 | 6M |

UNIT-IV

- | | | | |
|----------|---------------------------------------------------|-----------|-----------|
| 7 | a Derive Eulers equation. | L4 | 6M |
| | b Derive an equation for Darcy Weisbach equation. | L4 | 6M |

OR

- | | | | |
|----------|----------------------------------------------------------------------------------|-----------|-----------|
| 8 | a What is the function of venturimeter? Write down formula for discharge. | L4 | 4M |
| | b Write short notes on Pipes in series, pipes in parallel and expression for it. | L1 | 8M |

UNIT-V

- | | | | |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|
| 9 | a Find the force exerted by a jet of water of diameter 75 mm on a stationary flat plate, when the jet strikes the plate normally with velocity of 20 m/s. | L1 | 6M |
| | b Explain the working of Pelton wheel with neat sketch. | L2 | 6M |

OR

- | | | | |
|-----------|----------------------------------------------------------------------------------|-----------|-----------|
| 10 | a Formulate an expression for force of jets on stationary flat with neat sketch? | L4 | 6M |
| | b Derive Expressions for work done and efficiency for Kaplan turbine? | L4 | 6M |

*** END ***