

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

B.Tech. I Year I Semester Supplementary Examinations February-2024
THERMAL AND FLUID ENGINEERING

(Electrical & Electronics Engineering)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

- 1 Explain briefly about cooling towers and Coal handling with neat diagram CO1 L2 12M

OR

- 2 a Definitions of system, boundary, surrounding and control volume. CO1 L1 6M
b Explain different types of thermodynamic systems. CO2 L1 6M

UNIT-II

- 3 Explain the following terms relating to steam formation : CO2 L2 12M
- Enthalpy of wet steam
 - Entropy of Steam
 - Sensible heat of water
 - Latent heat of steam
 - Dryness fraction of steam
 - Superheated steam

OR

- 4 a What is fusible plug? Draw the sketch and explain. CO2 L1 6M
b What is Blow down cock? Explain its purpose. CO2 L2 6M

UNIT-III

- 5 a Write a short note on Vapour Pressure, surface tension and capillarity. CO5 L2 6M
b Define Atmospheric pressure, gauge pressure and absolute Pressures. CO5 L1 6M

OR

- 6 What is manometer and classify it.? Explain U tube manometer with neat diagram. CO5 L1 12M

UNIT-IV

- 7 Derive Continuity equation in one dimensional form Euler's equation of motion and Bernoulli's energy equation. CO4 L3 12M

OR

- 8 Derive an expression for the loss of head due to sudden enlargement of a pipe. CO5 L3 6M

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. CO5 L5 6M
b Derive an expression for the hydraulic efficiency when a liquid jet strikes a single fixed curved vane . CO5 L3 6M

OR

- 10 Draw the neat sketch of Modern Francis turbine and explain its working. CO6 L1 12M

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