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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR
(AUTONOMOUS)****M.Tech I year II Semester Regular Examinations June 2019****STEAM ENGINEERING**

(Thermal Engineering)

Time: 3 hours**Max. Marks:60**

(Answer all Five Units 5×12=60 Marks)

UNIT-I

- 1 a State how the boilers are classified and also mention their standards 6M
b What is adiabatic flame temperature? Explain in detail 6M

OR

- 2 A vessel of volume 0.04m³ contains a mixture of saturated Vapour and saturated steam at temperature of 250oC. The mass of liquid is 9 Kg. Find the pressure, specific volume, enthalpy, entropy, internal energy 12M

UNIT-II

- 3 a Name various materials used for the insulation of steam and condensing systems and also explain which material is best for the insulation. 6M
b What factors are to be considered for the selection of refractories explains briefly? 6M

OR

- 4 a Derive an expression for the economic thickness of insulation. 6M
b Write the procedure for the calculation of economic thickness of insulation. 6M

UNIT-III

- 5 Explain the working of float trap with a neat sketch. Also mention its merits and demerits. 12M

OR

- 6 a What are the best engineering practices used for the energy saving. 6M
b Explain about flash steam recovery system with its benefits. 6M

UNIT-IV

- 7 In a coal fired boiler the quantity of steam generated is 8 TPH with a pressure of 10 kg/cm² at a temperature of 180oC, Consider the enthalpy of steam at 10 kg/cm² is 665 kCal/kg and for feed water is 85kCal/kg at 85oC. The coal consumed is 1.6TPH whose GCV 4000kCal/kg. Determine the boiler efficiency and evaporation ratio. 12M

OR

- 8 Name and analyze the losses from boilers. 12M

UNIT-V

- 9 a What are the 3R's in waste minimization techniques? 6M
b Can employee be a factor in reducing wastes? Explain. 6M

OR

- 10 Explain the selection process of instruments for the measurement of various parameters in boiler. 12M

END