Question Bank (G scheme)

Name of subject: THERMAL ENGINEERING **Unit Test :I**

Subject code: 17410 **Course : ME**

Semester: VI

A-QUESTIONS FOR THREE MARKS

1) Define sensible and latent heat (CH-3)

2) Define following terms (CH-1)

a) State

b) Process

c) Property

3) What are the limitations of first law of thermodynamics? (CH-1)

4) Differentiate between path and point function (CH-1)

5) Define system. List its different types (CH-1)

6) State second law of thermodynamics (CH-1)

7) Explain concept of PMM-I and PMM-II (CH-1)

8) Explain Zeroth law of thermodynamics (CH-1)

9) Define ideal gas (CH-2)

10) Define characteristics gas constant (CH-2)

B – QUESTIONS FOR FOUR MARKS.

1) Write steady state energy equation. Apply it to boiler and condenser. (CH-1)

2) Draw the following processes on P-V and T-S diagram (CH-2)

a) Isobaric process

b) Isothermal process

3) A gas of mass 4kg at temperature 60^0c doubles its pressure when heated at constant volume. Find change in internal energy, take Cv=.710 kj/kg^{o}k (CH-2)

4)1 kg of gas undergoes isothermal compression at 300^0k during which its volume reduced $1/5^{th}$ of its original volume calculate work done, change in internal energy and heat transfer. R=287 j/ kg^ok (CH-2)

5) Draw labeled sketch of Cochran boiler (CH-3)

6) Draw labeled sketch of Babcock and Wilcox boiler (CH-3)

7) Difference between mounting and accessories. (CH-3)

8) Differentiate between heat pump and refrigerator. (CH-1)

9) Prove that: C.O.P. (heat pump) = C.O.P (refri.) + 1 (CH-1)

10) The COP of a refrigerator operating on carnot cycle is 5.4 when it maintains -5 degree in evaporator calculate the condenser temperature and refrigerating effect of the power required to drive the unit in 5kw. (CH-1)

11) State Boyle's and Charles's law. (CH-2)

12) Differentiate between adiabatic and isothermal process (CH-2)

13) Derive equation of state (CH-2)

14) What is boiler terminology? (CH-3)