Topic no.1Fundamentals of thermodynamics
Questions for 2 Marks
(1)Define (a) Enthalpy (b) Entropy
(2) Define (a) Internal energy (b) Flow work
(3) Define   intensive and extensive property giving examples
(4) Define (i) Potential energy (ii) Kinetic energy
Questions for 4 Marks
(1)State and explain Kelvin Plank's Statement of Second Law of thermodynamics.

(2)State and explain Clausius Statement of Second Law of thermodynamics

(3)Differentiate open system and close system

(4) Differentiate between Heat pump ,heat engine and refrigerator

(5)State   First law of thermodynamics for cyclic and non -cyclic process

(6) Write Steady Flow Energy Equation(SFEE) mentioning meaning of all terms involved in it.. Also state SFEE for (a) Boiler (b) Condenser (c)Turbine

Unit 2 Ideal Gases and Steam Fundamentals

Questions for 2 marks

1 .State (a)Boyle's law (b) Charle's law (ii) State Avogadros Law

2. Represent the following processes on P-V and T-S diagram

(a) Isobaric process (b) Isochoric process

3. Represent the following processes on P-V and T-S diagram

(a)Adiabatic process (b) Isothermal process

4. Define :(a) Dryness fraction (b) Degree of superheat(c) Latent heat

5. Define : (a) Superheated steam (b)Wet steam (c) Sensible heat

Questions for 4 marks

(i)   A closed vessel contains 3 Kg of carbon dioxide at a temperature 20 °C and pressure of 0.8 bar . Heat is supplied to the vessel till the gas acquires a pressure of 1.4 bar. Calculate (a) Final temperature (b) Work done on or by the gas (c) Heat added(d) Change in internal energy

(ii)   4Kg of an ideal gas is expanded from a pressure of 8 bar and volume 1.5 m^3 to a pressure of 1.5 bar and volume 4.5 m^3 The change in Internal energy is 525 KJ. Cv = 1.047 KJ/Kg K. Calculate (a) Gas constant (b) Change in enthalpy (c) Initial and final temperatures

(iii)   A gas expands adiabatically from a pressure and volume of 8 bar and 0.04 m3 respectively to a pressure of 1.4 bar. Determine (i) Final volume (ii) Work done (iii) Change in internal energy Assume Cp =1.046KJ/Kg K Cv= 0.752 KJ/KgK

(iv)   1 Kg of Nitrogen in a cylinder at a pressure of 7 bar and temperature of 300 K expands four times its original volume.The process of expansion is assumed to take place at constant pressure Calculate
(i)Initial volume (ii) Final temperature (iii) Work done by gas (iv) Heat added(v)Change in internal energy

vi)   Explain the process of steam formation

Unit 3 Components of steam Power Plants

Questions for 2 marks

1. Draw the layout of steam power plant

2 State the names of high pressure boilers

3. List the applications of boiler

4. Classify the steam boilers

5 Define compounding and state the types of compounding

6. State the function of steam condenser

7. List the sources of air leakage into the condenser

8. List the applications of nozzle

9. Classify steam turbines

10 State the function of cooling towers

Questions for 4 Marks
1. State the necessity of compounding of turbines

2. Draw the sketch of Lamont boiler

3. State and explain Dalton's Law of partial pressure

4. List sources of air leakages in condenser and state its effect on performance of condensers

5 Explain the surface condenser with neat sketch

6.Draw the sketch of Benson boiler

7. Draw the sketch of natural cooling tower

8 Draw the sketch of induced draught cooling tower

9.Explain regenerative feed heating stating its advantages