PART –B

1) one kg of gas expands at CO&11stant pressure from 0.085 m3 to 0.13m3.if the initial temperature of the gas is 22.5 °c. Find the final. Temperatures, net heat transfer, change in internal energy, pressure of gas.

2) A certain quantity of gas is head at constant pressure from 35 °0 to 185°c.

   Estimate the amount of hem transferred, ideal work done, change in internal energy, when the initial volume of the gas is 0.6 .

3) 2kg of gas at a pressure of 1.5 bar. Occupies a volume of 2.5 m3. If this gas compresses isothermally to 1/3 times the initial volume. Find initial. Final temperature, work done, heat transfer.

4) one kg of air is compressed polytropically (n=1.3) from 1 bar and 27 deg Celsius to 3 bar. Find I. work transfer, 2.Heat transfer, 3. Change in internal energy.

5) Air is compressed in a reversible process in a cylinder from 100 kPa, 293 K to 500 kPa, according to PV1.3 = constant. Calculate the work done and heat transfer per kilogram. Also calculate the change in the entropy. Assume air to be an ideal gas $C_{p, air}$ = 1.005 kJ/kgk? γ = 1.4

6) Explain in detail the second law of thermodynamics.