**REG.NO:**

**SEMBODAI RUKMANI VARATHARAJAN ENGINEERING COLLEGE**

**ACADEMIC YEAR 2013-2014/ODD SEMESTER**

**CYCLE TEST –II**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**SUBJECT CODE/TITLE:** ENGINEERING THERMODYNAMICS

**YEAR/SEM:** II/III **DATE:**

**DURATION:** 1 ½ HOURS **MAX.MARKS:** 50

**Answer ALL the Questions**

**PART A (5X2=10)**

1. What is pure substance?
2. Define triple point and critical point for pure substance?
3. Draw the change of phase of water in T-V diagram?
4. State Boyle’s law.
5. What is Joule-Thomson coefficient?

**PART B (40 MARKS)**

1. A large insulated vessel is divided into two chambers, 1 containing 5 kg of dry saturated steam at 0.2 MPa and the other 10 kg of steam, 0.8 quality at 0.5 MPa. If the partition between the chambers is removed and this steam is mixed thoroughly and allowed to settle, find the final pressure, steam quality and entropy change in the process.
2. i) Derive Tds relations in terms of temperature and pressure changes and temperature and volume changes. (10)

ii) Describe Joule Kelvin effect with the help of T-p diagram. (6)

1. A reversible adiabatic process begins at p1=10 bar, t1=300oC and ends with p2=1 bar. Find the specific volume and the work done per kg of fluid. If the fluid is air. (8)