



## Shree H.N.Shukla group of colleges

PHYSICS

S.Y.B.Sc. (Sem. IV) (CBCS)

Unit Test examination

PAPER- 401

UNIT -3 : THERMODYNAMIC POTENTIAL

DATE :

TOTAL MARKS : 30

**Instructions:** All questions are compulsory.

The right side figure indicates total marks of the question.

Draw the figure wherever necessary.

Write answers of all the questions in main answer sheets.

### SECTION-A

**Q.1: One marks questions:**

**[5 MARKS ]**

- 1 What are the thermodynamic variables?
- 2 Which are the thermodynamic potential?
- 3 Write maxwell's second thermodynamic relation.
- 4 Write the first latent heat equation.
- 5 What is the first TdS equation.

### SECTION – B

**Q.2 (A): Short Questions: Write all three : [2 Marks each]**

**[6 MARKS]**

- 1 What is latent heat?
- 2 What is specific heat?
- 3 What is internal energy?

**Q.2 (B) : Short questions: Write all three: [3 Marks each]**

**[9 MARKS]**

- 1 Derive the first and second TdS equation.
- 2 Describe Enthalpy.
- 3 Describe clapeyron's latent heat equation.

**Q.2 (C): Write Detail Note on [Any two]: [5 Marks each]**

**[10 MARKS]**

- 1 Derive maxwell first and second thermodynamic relation.
- 2 Give the maxwell four thermodynamic relation and derive specific heat  $C_p - C_v = R$ .
- 3 Obtain formula for joule thomson co efficient .
- 4 Define helmholtz free energy and obtain its formula interms of P,V,S, and T.