Total No. of Questions : 09

B.Sc. (Non Medical) (Sem.-3) PHYSICAL CHEMISTRY-II Subject Code : BSNM-302-18 M.Code : 76901 Date of Examination : 12-12-22

Time: 3 Hrs.

Max. Marks : 50

Total No. of Pages : 02

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Define state function and path function.
- b) Define reversible and irreversible process.
- c) How do you differentiate adiabatic and isochoric process?
- d) Write down the relationship between heat and work.
- e) Write down the relationship between K_p and K_c .
- f) State first law of thermodynamics with equation.
- g) Define internal energy.
- h) What would be the value of Joule-Thomson coefficient for a real gas?
- i) Write down the expressions of partial molar free energy and partial molar entropy.
- j) Define triple point.

SECTION-B

- 2. Draw and explain phase diagram of Pb-Ag system.
- 3. Write short notes on eutectic mixture ami azeotropic mixtures.
- 4. Derive Gibbs-Helmholtz equation for a process at constant pressure and constant volume.
- 5. Derive the relation between ΔH and ΔU for a thermodynamic system.
- 6. Derive Clapeyron-Classius equation.

SECTION-C

- 7. Write a short note on Nernst distribution law and its applications.
- 8. Derive expressions for the entropy change accompanying variation of temperature and volume.
- 9. Define Joule-Thomson coefficient. Show that for an ideal gas $\mu_{J-T} = 0$ and discuss the physical content of this equation.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.