ASSIGNMENT (21-02-2026)

Phase Equilibria (6th Semester)

Last Date of submission: 28-02-2026

1. Draw the phase diagram for water system and apply Gibbs phase rule to it.

2. Explain the effect of pressure on the melting point of ice with the help of Clapeyron-Clausius equation.

3. Draw and discuss the phase diagrams for the following:

   a) Lead-Silver   b) Bismuth- Cadmium

4. Discuss Pattinson's process.

5. Discuss the three- component system with a suitable example.

6. Determine the number of components, phases and degree of freedom in the following equilibria

$$N_2O_4 \,(g) \rightleftharpoons 2NO_2 \,(g)$$

$$NH_4Cl \,(s) \rightleftharpoons NH_3(g) + HCl(g), \text{ when } p_{NH3} = P_{HCl}$$

$$NH_4Cl \,(s) \rightleftharpoons NH_3(g) + HCl(g), \text{ when } p_{NH3} \neq P_{HCl}$$