

Code No. 6157/Non-CBCS

FACULTY OF PHARMACY**B. Pharmacy 3/4 I-Sem. (Non-CBCS) (Backlog) Examination, January 2020****Subject: Physical Pharmacy - I****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

1. (a) Write and explain the postulates of the kinetic molecular theory. 7
(b) Write the importance of polymorphism with examples and its applications. 7
- OR**
2. (a) What is phase rule? Explain the phase diagram for two component systems. 9
(b) Write a note on Differential Scanning Calorimetry with applications. 5
3. (a) Define i) Specific heat & Latent heat ii) Enthalpy iii) Entropy/ 6
(b) State and explain first and second law of thermodynamics with applications. 8
- OR**
4. (a) Define and explain Hess's law of heat summation and its application. 8
(b) Explain Gibbs free energy and applications. 6
5. (a) What are colligative properties? Explain suitable colligative properties for molecular weight determination. 8
(b) Discuss the modern theory of strong electrolytes and Debye-Huckel theory. 6
- OR**
6. (a) Explain Arrhenius theory of electrolytic dissociation. 5
(b) Derive the equation for determination of acidity & basicity constant and write its use. 9
7. (a) Define buffer. Derive buffer equation for weak acids. 4
(b) What are the methods for adjustment of tonicity? Explain freezing point depression method for adjusting isotonicity. 10
- OR**
8. (a) Derive Henderson-Hasselbalch buffer equation for a weak acid and its salt. 7
(b) Write a note on pharmaceutical buffers and their preparation. Influence of pH on tissue irritation. 7
9. (a) Explain different types of electrodes. 9
(b) How to measure the EMF of cells. 5
- OR**
10. (a) Draw and explain Daniel cell. 5
(b) Write a note on: (i) Catalysis and Catalyst (ii) Promoters and Inhibitors
(iii) Applications of Redox potentials in pharmacy. 9

Pharmacy