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**BACHELOR OF PHARMACY (B. PHARM.) (CBCS-2019 COURSE)**  
**B. Pharm. Sem-III :SUMMER- 2022**  
**SUBJECT : PHYSICAL PHARMACEUTICS-I (THEORY)**

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 13-07-2022

**S-20667-2022**

Max. Marks : 75

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**N.B.**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate **FULL** marks.
  - 3) Answer to both the sections should be written in **SEPARATE** answer book.
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**SECTION – I**

**Q.1** Answer the following : **(20)**

- i) Define solubility. Give its expressions.
- ii) What is Joule-Thompson effect?
- iii) Explain the phenomenon of 'Like dissolves like'.
- iv) What is dielectric constant? Give its significance.
- v) Differentiate ideal and real solutions.
- vi) Classify liquid crystals.
- vii) What is refractive index? Give its significance.
- viii) Explain Sorensen's pH scale.
- ix) Why solubility of amorphous form of a drug in water is greater than its crystalline counterpart?
- x) Draw a labeled diagram of one component, three phase system.

**Q.2** Answer **ANY TWO** from the following: **(20)**

- i) Explain in detail Nernst Distribution law.
- ii) Give detailed account of phenomenon of Solubilization.
- iii) Classify complexes with examples.

**SECTION – II**

**Q.3** Answer **ANY SEVEN** of the following : **(35)**

- i) What are factors affecting protein drug binding?
- ii) Describe methods to determine pH of solutions.
- iii) Explain methods to determine tonicity of solutions alongwith methods to adjust the same.
- iv) Give detailed account of binding forces between molecules.
- v) What is Diffusion? Classify the same with examples.
- vi) Write an exhaustive note on 'Raoult's law'.
- vii) Discuss methods to distinguish crystalline and amorphous forms of a solid.
- viii) What is Gibb's phase rule? Derive an expression for the same.
- ix) Explain methods to determine surface tension.

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