Code No: BP302T **PCI** SET - 1

**II B. Pharmacy I Semester Supplementary Examinations, May - 2019**
**PHYSICAL PHARMACEUTICS-I**

Time: 3 hours Max. Marks: 75

Note: 1. Question paper consists of three parts (**Part-I**, **Part-II & Part-III**)
2. Answer ALL (Multiple Choice) Questions from **Part-I**
3. Answer any **TWO** Questions from **Part-II**
4. Answer any **SEVEN** Questions from **Part-III**

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## PART –I

1. (i) Sparingly soluble indicates the solubility of one part in (1M)
(a) 30 to 100 parts in solvent (b) 10 to 30 parts in solvent
(c) 1 to 10 parts in solvent (d) 100 to 1000 parts in solvent

(ii) Solute – Solvent interactions involve (1M)
(a) van der waals forces (b) Ion dipole and ion-induced dipole forces
(c) Hydrogen bonds (d) All of above

(iii) Solubility parameter indicates the (1M)
(a) Cohesion of like molecules (b) Cohesion of unlike molecules
(c) Repulsion of like molecules (d) Repulsion of unlike molecules

(iv) Partition Co-efficient 'K' is expressed by (1M)
(a) $K=\frac{CH_2O}{Coil}$ (b) K= C oil + $CH_2O$
(c) K= C oil × $CH_2O$ (d) None of above

(v) Mesophase is also known as (1M)
(a) Gaseous (b) Liquid (c) Solid (d) Liquid Crystalline

(vi) Eutectic point denotes in a phase diagram of thymor and salor system. (1M)
(a) The Coexistance of two phases (b) The existence of Single phase
(c) The Coecistance of three phases (d) None of above

(vii) Optical rotation is measured by (1M)
(a) Polarimeter (b) Polarograph (c) refractometer (d) Thermometer

(viii) Sublimation is the transfer of molecules from (1M)
(a) Solid to Liquid (b) Liquid to solid
(c) Liquid to gas (d) Solid to gas

(xi) Interfacial tension is (1M)
(a) Force per unit area (b) Product of force and length
(c) Force per unit length (d) Sum of force and area

(x) Spreading of oleic acid ass a film on water is possible due to (1M)
(a) Force of adhesion between water and oil molecules is greater than cohesive forces of oleic acid molecules themselves.
(b) Force of adhesion between water and oil molecules is not greater than cohesive forces of oleic acid molecules themselves.
(c) Force of adhesion between water and oil molecules is same as the cohesive forces of oleic acid molecules themselves.
(d) None of the above

(xi) HLB Scale was proposed by (1M)
(a) Griffith (b) Gibbs (c) Griffin (d) None of above

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(xii) HLB of detergents range (1M)
(a) 13-16 (b) 8-16 (c) 1-3 (d) 16-18

(xiii) Chelates are (1M)
(a) Metal ion complexes
(b) Organic molecular complexes
(c) Inclusion complexes
(d) None of above

(xiv) Complexation of caffeine and L-tryptophan was studied by (1M)
(a) pH titration method (b) H-NMR
(c) Solubility method (d) Distribution method

(xv) Impact of drug protein binding (1M)
(a) Inactivation of drug (b) Displacement of body hormones
(c) Retard the excretion of drug (d) All of above

(xvi) Molecular sieres are made up of (1M)
(a) Zeolites (b) Dextrins (c) Silica gels (d) All of above

(xvii) Henderson – Hassal bach equation for a weak acid and its salt (1M)
(a) $pH = pKa + \log \frac{[salt]}{[acid]}$ (b) $pKa = pH + \log \frac{[salt]}{[acid]}$
(c) $pH = pKa + \log \frac{[acid]}{[salt]}$ (d) None of above

(xviii) Identify non biological buffer (1M)
(a) Lacrimal fluid (b) Plasma (c) Hemaglobin (d) Borate buffer

(xix) Isotonic solutions cause (1M)
(a) Swelling (b) Contraction (c) Discomfort (d) No Discomfort

(xx) Identify the drug buffer (1M)
(a) Salicylic acid/Sodium salicylate (b) Citric acid/Na Citrate
(c) Acid/alkali protassium salts of phosphoric acid
(d) Acid/alkali sodium salts of phosphoric acid

## PART –II

2. Define Solubility. Write about factors influencing drug solubility, solubility expressions and solute-solvent interactions. (10M)

3. Write notes on the following physicochemical properties of drug: optical rotation, dielectric constant and dipolemoment. (10M)

4. Explain surface tension and surfactants, Write about the measurement of surface tension. (10M)

## PART -III

5. Write about Raoult's law, ideal and real solutions. (5M)

6. Write notes on "Liquid Crystal" and glassy state. (5M)

7. Write about sublimation critical point and eutectic mixture by taking suitable example. (5M)

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| 8. | Write a detailed note on spreading coefficient. | (5M) |
| 9. | Write a note on solubilization and detergency. | (5M) |
| 10. | Write a note on organic molecular complexes of quinhydrone and picric acid. | (5M) |
| 11. | Define diffusion; explain diffusive and convective mass transfer. Add note on ultra filtration. | (5M) |
| 12. | Define a buffer and write about determination of buffer capacity. | (5M) |
| 13. | Give an account on the adsorption and its importance in pharmacy. | (5M) |