THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LO 2033) MARCH 2019 **Sub. Code: 2033**

B.PHARM. DEGREE EXAMINATION
PCI Regulation – SEMESTER III
PAPER II – PHYSICAL PHARMACEUTICS – I

Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Explain briefly on distribution law and its limitations.
2. Explain the term surface tension & interfacial phenomena. Write the different methods used to measure surface tensions. Explain any two methods elaborately.
3. Explain various methods to analysis complexes.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Diffusion principles in biological systems.
2. Principle behind the working of aerosols.
3. Difference between amorphous & crystalline solids.
4. How the solubility of partially miscible liquids occurs and explains with one example?
5. Different types of adsorption isotherms.
6. How micellar system solubilize the poorly soluble drugs?
7. Significance of protein binding.
8. Various methods to determine pH.
9. Methods to adjust isotonicity.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. Define spreading co-efficient.
2. Henry's law-define with equation.
3. HLB scale.
4. What do you mean by binary solution and give example?
5. Examples of pharmaceutical buffers.
6. What is the nature of solvent and cosolvent and give examples?
7. pH equation for acid and alkali.
8. Examples for biological buffers.
9. Write the different between hypotonic and hypertonic solution.
10. Write the equation for Fick's law of diffusion.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LP 2033) SEPTEMBER 2019 **Sub. Code: 2033**

B.PHARM. DEGREE EXAMINATION
PCI Regulation – SEMESTER III
PAPER II – PHYSICAL PHARMACEUTICS – I

Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Define complexes. Classify the complexes with suitable examples. Write about the inclusion complexes.
2. Explain the Freundlich and Langmuir adsorption isotherm.
3. Define surfactants. Explain classification of surfactants with suitable examples.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Significance of protein binding.
2. Describe with examples of polar, non polar and semi polar solvents.
3. Crystalline structure of complexes.
4. Wilhelmy plate method.
5. Liquid crystalline state and Supercritical fluids.
6. Dielectric constant and Dipole movement.
7. Application of buffers in pharmaceutical and biological system.
8. Vapour pressure and Liquid crystals.
9. Application of surface active agent.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. Buffer equation.
2. Surface free energy.
3. Ideal solution.
4. Common ion effect.
5. Olefin complexes.
6. Latent Heat.
7. Sublimation.
8. Critical solution temperature.
9. Distribution law.
10. Mechanism action of detergent.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LR 0121] JANUARY 2021 Sub. Code: 2033

(MARCH 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI REGULATION – SEMESTER III

PAPER II – PHYSICAL PHARMACEUTICS I

Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Enumerate the methods for analysis of complexes and explain in detail about solubility method.
2. Explain the phase rule for one and two component systems.
3. Define solubility. Describe solubility expression. Write the factors influencing solubility of drugs.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain Du - nouy ring method.
2. Eutectic mixtures.
3. Wetting phenomena and its applications.
4. Solvation and Association.
5. Write note on Protein binding of drugs.
6. Job's method of Complexation.
7. Sorensen's pH scale.
8. Mechanisms of solute solvent interactions.
9. Describe methods to adjust Tonicity.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Raoult's law.
2. Buffer capacity.
3. Vaporization.
4. Isotonic solution.
5. Ferrocene.
6. Spreading co-efficient.
7. Critical micelle concentration.
8. Liquid complex.
9. Real solution.
10. Henry's Law.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0921] SEPTEMBER 2021 Sub. Code: 2033
(SEPTEMBER 2020 EXAM SESSION)

B.PHARM. DEGREE EXAMINATION
PCI Regulation 2017 – SEMESTER III
PAPER II - PHYSICAL PHARMACEUTICS I
Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Classify Complexes. Explain organic molecular complexes and inclusion Complexes.
2. What are the various methods of determination of surface tension of Liquids? Explain any two methods.
3. Explain briefly Freundlich and Langmuir adsorption Isotherms.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Solubility expressions.
2. Discuss Crystalline state of matter.
3. Critical solution temperature of Phenol-water system.
4. Describe application of Buffers.
5. The pH titration method for studying Complexation.
6. HLB scale and its significance.
7. Eutectic Mixtures.
8. Aerosols.
9. Surface active agents and their pharmaceutical applications.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define surface tension.
2. Distinguish between adsorption and absorption.
3. Define Optical rotation.
4. Define Dielectric constant.
5. What are Isotonic solutions?
6. Define Critical Micelle Concentration.
7. Sorensen's pH scale.
8. Define Refractive index.
9. Polymorphism.
10. Define relative humidity.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0122] JANUARY 2022 Sub. Code: 2033
(MARCH 2021 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER III
PAPER II - PHYSICAL PHARMACEUTICS I
Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain briefly about the various factors influencing solubility of Drugs.
2. Describe briefly about the various classification of Complexation with examples.
3. Define Isotonic solutions and explain the methods to determine the tonicity of solutions.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. HLB Scale.
2. Dielectric constant & dipole moment.
3. Eutectic mixtures.
4. Crystalline solids.
5. Spreading coefficient.
6. Relative humidity and latent heat.
7. Sorensen's pH scale.
8. Buffers in pharmaceutical & biological systems.
9. Define Vapour pressure and how the total Vapour pressures of liquid mixtures are measured?

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define surface tension & interfacial tension.
2. Raoults's law.
3. Classification of surfactants.
4. Distribution law.
5. Define Amorphous & Polymorphism.
6. Equation to determine distribution coefficient.
7. BET equation.
8. CMC.
9. CST- definition and application.
10. What is buffer capacity?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0522] **MAY 2022** **Sub. Code: 2033**

(SEPTEMBER 2021 EXAM SESSION)

B.PHARM. DEGREE EXAMINATION

PCI Regulation 2017 – SEMESTER III

PAPER II - PHYSICAL PHARMACEUTICS I

Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Discuss a descriptive note on pH determination methods.
2. Give a brief review on surface active agents.
3. Write a note on factors influencing solubility of drugs.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Explain about Azeotropic mixtures.
2. Differentiate between crystalline and amorphous solids.
3. Discuss ideal gas equation.
4. Write a note on Polymorphism.
5. Briefly write a note on HLB system.
6. Applications of complexes in pharmacy.
7. Write a note on factors affecting protein drug binding.
8. Write short notes on buffers in biological system.
9. Explain two methods of measuring tonicity.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. What is phase rule?
2. Define critical solution temperature.
3. Define partition coefficient.
4. Define latent heat.
5. Refractive index.
6. Dielectric constant.
7. Spreading coefficient.
8. Chelates.
9. Write the methods of analysis of Complexation.
10. Examples of Pharmaceutical buffers.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 1022] OCTOBER 2022 Sub. Code: 2033
(MARCH 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER III
PAPER II - PHYSICAL PHARMACEUTICS I
Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. What is partially miscible liquids, explain it with neat diagram.
2. Define complex. Write in detail about metal ion complex.
3. Explain the determination of optical rotation with neat diagram.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain about the mechanism of solute solvent interactions.
2. Dielectric constant.
3. Explain Dunouy Ring method with neat diagram.
4. Write the different methods by which the pH can be determine.
5. Describe Sublimation critical point with neat diagram.
6. Write in detail about polymorphism.
7. Explain the Job's method of analysis with neat diagram.
8. State and derive Raoult's law.
9. Thermodynamic treatment of stability constant.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define association.
2. Snell's law.
3. Define interfacial tension and write its units.
4. Write any two examples of complexation.
5. Define Sublimation.
6. Distribution Law.
7. Hypertonic solution.
8. Write few applications of buffer.
9. Define CMC.
10. Detergent.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 0323] MARCH 2023 Sub. Code: 2033
(SEPTEMBER 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER III
PAPER II - PHYSICAL PHARMACEUTICS I

Q.P. Code: 562033

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain the optical rotation determination with neat diagram.
2. Define complex. Write in detail about organic molecular complex.
3. Write about the quantitative approach to the factors influencing solubility of drugs.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write about the ideal solubility parameters.
2. Explain critical solution temperature with neat diagram.
3. State refractive index and methods to determine it.
4. Explain drop count method with neat diagram.
5. Explain Freundlich Isotherm.
6. Describe the applications of buffer in biological system
7. With neat diagram explain the Eutectic mixture.
8. Spreading co-efficient.
9. Write the pH titration and distribution method in complex analysis.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define solvation.
2. Polymorphism.
3. Sublimation critical point.
4. Define surface tension and write its units.
5. What do you mean by inorganic type of complex?
6. Chelates.
7. Buffer capacity.
8. Hypotonic solution.
9. Relative humidity.
10. Diffusion.

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