February 2009

[KU 738] **Sub. Code: 4229**

FIRST B.PHARM. DEGREE EXAMINATION
(Common to Second B.Pharm Paper I. Admitted from 2006 onwards)
(Regulations 2004)
(For Candidates admitted from 2004-05 onwards)
Paper IV – PHYSICAL PHARMACEUTICS
Q.P. Code : 564229

Time : Three hours **Maximum : 90 marks**

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. **a)** Write about different types of collidal systems. **(5)**
   b) Discuss the optical and electrical properties of colloids **(15)**
2. **a)** Explain the term micromeritics and its applications in pharmacy **(5)**
   b) Explain any two methods for determining the surface area of a powder. **(15)**
3. **a)** Explain the term rheology and its application in pharmacy. **(6)**
   b) Write about ostwald viscometer and cone and plate viscometer **(14)**

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Effect of temperature in solubility with examples.
2. Explain the Half life with equation.
3. Significance of protein binding.
4. Describe the steady state diffusion through a membrane diagramatically.
5. Write a short note on accelerated stability testing of pharmaceutical products.
6. Isotonic solutions.
7. Define surface tension and its determination.
8. Differentiate flocculated suspension from deflocculated suspension.
9. Applications of emulsion in pharmacy.
10. Andreason apparatus – Explain.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Osmosis.
2. Surface free energy.
3. Order of a reaction.
4. Critical micellar concentration.
5. HLB value.
6. Liquid crystals.
7. Complexation.

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August 2009

[KV 738] **Sub. Code: 4229**

FIRST B.PHARM. DEGREE EXAMINATION
(Common to Second B.Pharm Paper I. Admitted from 2006 onwards)

(Regulations 2004)
(For Candidates admitted from 2004-05 onwards)
Paper IV – PHYSICAL PHARMACEUTICS
Q.P. Code : 564229

Time : Three hours **Maximum : 90 marks**

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. **a)** What is oxidation. How drugs undergo decomposition by oxidation. Describe methods to prevent oxidative degradation.
   b) Explain accelerated stability testing. Give its advantages and limitations.
2. Describe various methods of determining particle size distribution.
3. **a)** What is thixotropy? Give it's applications.
   b) Describe multipoint viscometers.

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Explain eutectic mixtures.
2. Write short notes on pseudoplastic and dialatant flow.
3. Instabilities of emulsions.
4. Write short notes on Donnan membrane effect.
5. Determination of solubility.
6. Inclusion complexes.
7. Classification of surfactants.
8. Formulation of suspensions.
9. Write short notes on liquid.
10. Describe the rate and order of reactions.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Polymorphism.
2. Fick's law of diffusion.
3. Gold number.
4. Zeta potential.
5. Porosity.
6. Rheophexy.
7. Clathrates.

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February 2010

[KW 738] **Sub. Code: 4229**

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(Common to Second B.Pharm Paper I. Admitted from 2006 onwards)
(Regulations 2004)
(For Candidates admitted from 2004-05 onwards)
Paper IV – PHYSICAL PHARMACEUTICS
Q.P. Code : 564229

Time : Three hours **Maximum : 90 marks**

I. Essay Questions : Answer any TWO questions (2 x 20= 40)

1. **a)** Explain different types of colloids.
   b) Describe the electrical properties of colloids.
2. **a)** Explain non Newtonian flow of fluids.
   b) Explain single and multiple point viscometers.
3. **a)** Give the differences between flocculated and deflocculated suspensions.
   b) How will you formulate a stable suspension?

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Applications of thixotropy in pharmacy.
2. Preservation of emulsions.
3. Describe noyes whitneyi equation.
4. Zeta potential and Nernst equation.
5. Write short notes on protein binding.
6. Structured vehicle.
7. Short note on overages.
8. Surface tension and one method of its determination.
9. Monomolecular inclusion complexes.
10. Cup and pob viscometer.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Eutectic mixture.
2. Define angle of repose.
3. Stocke's equation.
4. Plastic flow.
5. Isotonic solutions.
6. Define critical miscellar concentration.
7. Kraft's point.

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September 2010

[KX 738] **Sub. Code: 4229**

FIRST B.PHARM. DEGREE EXAMINATION

(Common to Second B.Pharm Paper I. Admitted from 2006 onwards and 2009-2010 Lateral Entry Batch)

(Regulations 2004)

(For Candidates admitted from 2004-05 onwards)

Paper IV – PHYSICAL PHARMACEUTICS

Q.P. Code : 564229

Time : Three hours **Maximum : 90 marks**

I. Essay Questions : **(2 X 20 = 40)**

Answer any TWO questions.

1. a) Discuss the methodology and limitations of accelerated stability Testing.
   b) Explain the measurement of Thixotropic co-efficient.

2. a) Classify the different types of complexes with brief descriptions.
   b) Enumerate the methods for analysis of complexes and explain in detail about pH titration method.

3. Describe the method to determine particle size and particle size distribution.

II. Write Short Notes : **(8X 5 = 40)**

Answer any EIGHT questions.

1. Explain the various methods for determination of order of reaction.
2. Write a note on liquid crystals.
3. Explain the factors affecting adsorption.
4. Describe controlled flocculation.
5. State and explain Freundlich Isotherm.
6. Explain the Fick's law of diffusion.
7. Explain Kinetic properties of colloids.
8. What is Protein binding of drugs? Explain its significance.
9. Explain about Non-Newtonian System.
10. Explain the formation of Electrical double layer around a dispersed particle and define Zeta potential and Nernst potential.

III. Short Answers: **(5X2 = 10)**

Answer any FIVE questions.

1. Eutectic mixture.
2. BET Equation.
3. Coalescence and breaking.
4. Burger's model.
5. Stoke's law
6. Kinematic viscosity.
7. Isotonic Solution.

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[KY 738] **Sub. Code : 4229**

FIRST B. PHARM. DEGREE EXAMINATION.

(Common to Second B.Pharm Paper I. Admitted from 2006 onwards and 2009-2010 Lateral Entry Batch)

(Regulations 2004)

(For Candidates admitted from 2004–2005 onwards)

Paper IV — PHYSICAL PHARMACEUTICS

Q.P. Code : 564229

Time : Three hours Maximum : 90 marks

I. Essay Questions: (2 × 20 = 40)

Answer any TWO questions.

1. (a) Describe the various types of rheological systems with suitable rheogram and examples.

   (b) With suitable diagram explain the commercial Ferrante – Shirley cone and plate viscometer.

2. (a) Explain the stability of colloids by DLVO theory.

   (b) Describe the various methods of purification of colloids.

3. Explain the various theories of emulsification.

II. Write short notes: (8 × 5 = 40)

Answer any EIGHT questions.

1. Give the various applications of complexes.

2. Explain the cryoscopic and sodium chloride equivalent methods to adjust tonicity of hypotonic solutions.

3. Write note on surface and interfacial tension.

4. Explain the solubility method for the analysis of complex.

5. Differentiate flocculated and deflocculated suspensions.

6. How will you determine shelf life of a drug?

7. Briefly describe protein binding of drugs and discuss its significance.

8. Describe the diffusion principles in biological systems.

9. Explain the electrical method to determine particle volume.

10. What the various factors affecting adsorption? Briefly Explain each.

III. Short answer: (5 × 2 = 10)

Answer any FIVE questions.

1. Fick's laws.

2. Dissolution.

3. Coalescence and breaking.

4. Stoke's law.

5. Kraft point and cloud point.

6. Clathrates.

7. Zeta potential.

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