AUGUST - 2005

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

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

Paper IV — PHYSICAL PHARMACEUTICS

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

Theory : Two hours and forty minutes **Theory : 70 marks**

M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

I. Long Essay : **(2 × 15 = 30)**

Answer any TWO questions.

1. Define and classify colloids with examples. Discuss their optical and kinetic properties of colloids.

2. Define rate and order of reaction. Derive first order and second order rate constant.

3. Discuss the diffusion principles in biological systems. Explain factors affecting drug pulse.

II. Short notes : **(8 × 5 = 40)**

Answer any EIGHT questions.

1. Differentiate flocculated and deflocculated Suspensions.

2. Discuss preservation of Emulsions.

3. Classify different types of complexes with brief description.

4. Define and classify Emulsifying agents.

5. Explain purification of colloids.

6. Discuss any one instrument used to measure the viscosity of Newtonian system.

7. Explain various factors affecting solubility.

8. Describe particle size measurement by microscopic method.

9. Derive Gibb's adsorption Equation.

10. Explain Mechanism of protein binding.

FEBRUARY - 2006

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Time : Three hours — Maximum : 90 marks

Theory : Two hours and forty minutes — Theory : 70 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

I. Long Essay : $(2 \times 15 = 30)$

Answer any TWO questions.

1. Discuss the physical stability of emulsions.

2. Differentiate zero, first and second order reaction kinetics of Pharmaceuticals.

3. Classify complexes of pharmaceutical significance.

II. Short Notes on : $(8 \times 5 = 40)$

Answer any EIGHT questions.

1. Describe the mechanism of action of surfactant as emulsifier.

2. Classify Flocculating agents, with their importance.

3. Differentiate between hydrophillic and hydrophobic colloids.

4. Explain the stabilization of drugs susceptible for hydrolytic degradation.

5. Discuss the applications of zeta potential.

6. What is angle of repose, how is it determined?

7. Define and explain :
   (a) Latent heat of vaporisation.
   (b) Aerosol.
   (c) Liquid crystal.
   (d) Polymorphism.

8. What is drug-protein binding, how is it quantified?

9. Write a note on Semi solid dosage forms.

10. Explain any one method for determination of Sw (Specific Surface area).

AUGUST - 2006

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Paper IV — PHYSICAL PHARMACEUTICS

Time : Three hours Maximum : 90 marks

Theory : Two hours and forty minutes Theory : 70 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer any TWO questions.

I. Long Essay : (2 × 20 = 40)

1. (a) What do you mean by polymorphism? Explain.

(b) Describe the principle involved in cone and plate viscometer.

2. Explain shear thickening and shear thing systems with suitable examples.

3. Explain Freundlich and Langmuir adsorption isotherms.

4. (a) What do you mean by melting? Give its importance.

(b) How do you carry out controlled flocculation?

Answer any SIX questions.

II. Short notes : (6 × 5 = 30)

1. Explain decomposition of ascorbic acid and how do you prevent it.

2. Define angle of repose. What is its significance?

3. Differentiate Creasing and Craching of an emulsion.

4. Explain Miscellar solubilization.

5. What are Eutectic mixtures? Give example.

6. Define Fick's law of diffusion and explain.

7. What are Clatharates? Give its applications with example.

8. How do you analyse complex by solubility method?

FEBRUARY - 2007

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

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

Paper IV – PHYSICAL PHARMACEUTICS

Time : Three hours Maximum : 90 marks

Theory : Two hours and forty minutes Theory : 70 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer any TWO questions.

I. Long Essay : (2 × 20 = 40)

1. (a) Define order of a reaction. How do you determine order of a reaction?

(b) Explain various theories of emulsification. (10 + 10)

2. (a) How do you determine the particle size by sedimentation method?

(b) Define thixotropy. How do you measure thixotropic breakdown? (10 + 10)

3. Classify complexes giving examples. Explain analysis of complexes by solubility method. (20)

4. (a) Explain the principle and procedure involved in dissolution apparatus.

(b) What are protective colloids? How do they act? (12 + 8)

II. Short notes :

Answer any SIX questions. (6 × 5 = 30)

1. What do you mean by polymorphism? Give examples.

2. What are the limitations of accelerated stability studies?

3. What are structured vehicles? Give its significance.

4. State and explain Freundlich's adsorption isotherm.

5. What is critical miscellar concentration? What are the factors which affect it?

6. Define solubility and give its applications.

7. What are pseudo plastic flow systems? Explain.

8. Define bulk density and true density. How do you determine bulk density?

August-2007

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

(For candidates admitted from 2004–05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Common to II B.Pharm. admitted from 2006 onwards)

(Modified Regulations)

Paper IV — PHYSICAL PHARMACEUTICS

Time : Three hours — Maximum : 90 marks

Theory : Two hours and forty minutes — Theory : 70 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Enlist the various methods available for determination of order of a reaction and explain any one method available for order determination.

(b) Discuss the various approaches available for conferring protection against oxidative breakdown of drugs.

2. (a) With the help of rhegrams, explain the flow behaviour of newtonean and Non-newtonean systems.

(b) Define Thixotropy. How do you quantify thixotropy?

3. (a) How do you differentiate lyophilic, lyophobic and association colloids?

(b) Discuss the various electrical properties of colloidal dispersions.

4. (a) Enumerate the various methods available for particle size determination.

(b) Discuss the construction and working of a coutter counter.

(c) Deduce an expression for particle number.

SECTION B — (8 × 5 = 40 marks)

Answer any EIGHT questions.

1. Write in brief about polymorphism and give the pharmaceutical significance of polymorphs.

2. What do you mean by steady state diffusion?

3. What do you mean by gold number?

4. Discuss the origin of zetapotential in cause of biphasic systems.

5. Describe sedimentation parameters.

6. State Gibb's adsorption equation and give the interpretation of the equation.

7. Give the construction of Arrhenius plot. Mention the limitations of Arrhenius plot.

8. Write in brief about free flowing properties of powders.

9. Give the working principle of Ostwalds viscometer.

10. Write on pharmaceutical applications of complexation.

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February-2008

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

(For candidates admitted from 2004–05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Common to II B.Pharm. admitted from 2006 onwards)

(Modified Regulations)

Paper IV — PHYSICAL PHARMACEUTICS

Q.P. Code : 564229

Time : Three hours — Maximum : 90 marks

Theory: Two hours and forty minutes — Theory : 70 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

I. Long Essay : $(2 \times 15 = 30)$

Answer any TWO questions.

1. Discuss in detail the use of Film balance in understanding the Insoluble monolayers formed at the liquid interfaces and its significance. Write above ribbs adsorption equation.

2. Describe the principle and working of (a) Cup and Bob viscometer (b) Cone and plate viscometer.

3. Define complexation. Classify the complex with suitable examples. Discuss the various methods of Analysis to determine the metal complex ratio.

4. Define diffusion and discuss the diffusion laws. Write a detailed notes on diffusion of drugs through membranes and write the methods assessing the drug diffusion.

II. Short notes: $(8 \times 5 = 40)$

Answer any EIGHT questions.

(1) Write about liquid crystals and its significance.

(2) Discuss the pH partition theory and its modifications.

(3) Discuss the kinetic properties of colloids.

(4) Discuss the interfacial properties and stability of suspended particles.

(5) Define solubilisation and the factors influencing the solulbilization.

(6) Discuss the medium effects in the stability of medicinal agents.

(7) Discuss the significance of pore size in pharmaceutical powders.

(8) Write short notes on prediction of 'shelf life'.

(9) Discuss the binding equilibria of protein binding.

(10) Write the methods to determine the order of reaction.

August 2008

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

(For candidates admitted from 2004-05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Common to II B. Pharm. admitted from 2006 onwards)

(Modified Regulations)

Paper IV — PHYSICAL PHARMACEUTICS

Q.P. Code : 564229

Time : Three hours Maximum : 90 marks

I. Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Explain the phenomena of adsorption. What are the factors affecting adsorption.

(b) Write about Freundlich and Langmuir Adsorption Isotherm.

2. (a) How will you predict the stability of pharmaceutical product.

(b) Explain the decomposition Reaction of a drug with suitable eg. How will you prevent it.

3. (a) Discuss the Rheology of semisolid and gel.

(b) Quantify the Thixotrophy and write about application of Thixotrophy.

II. Short notes : (8 × 5 = 40)

Answer any EIGHT of the following.

1. Significance of particle size in pharmacy.

2. Short notes on no bond complexes.

3. What is Zeta potential and Nernst – potential. Write the importance of Zeta potential in pharmacy.

4. Short notes on Protein Binding.

5. Write about the sedimentation parameters of suspended particles.

6. Explain the eutectic Mixture.

7. Short notes on Isotonic solution.

8. Explain Noyes-Whitney equation.

9. Write about Multiple point Viscometer.

10. Preservation of emulsion.

III. Short Answers : (5 × 2 = 10)

Answer any FIVE of the following.

1. Bancraft's Rule.

2. Kraft point.

3. Gold Number.

4. Phase Volume Ratio.

5. BET Equation.

6. Edmunson Equation.

7. Stokes Equation.
