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

(LP 2042) SEPTEMBER 2019 **Sub. Code: 2042**

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

Q.P. Code: 562042

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

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

1. Define and classify Colloids with suitable examples. Discuss their electrical properties.
2. Explain objectives, procedures and limitations of accelerated stability testing.
3. Describe the various types of rheological systems with suitable rheogram and examples.

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

1. Differentiate flocculated suspension from deflocculated suspension.
2. Discuss Sedimentation technique that used for particle size analysis.
3. Describe the derived properties of powders.
4. Derive first order rate constant.
5. Describe Cup and Bop viscometer.
6. Classify emulsifying agents with examples.
7. Explain the stability of colloids by DLVO theory.
8. Write a note on electrical double layer in colloids.
9. Write a note on factors influencing the chemical degradation of pharmaceutical product.

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

1. Thixotropy.
2. Glidants with examples.
3. Half-life.
4. Bulges and spurs.
5. Protective colloids.
6. Heckel equation.
7. BET equation.
8. Coacervation.
9. HLB scale.
10. Particle size distribution.

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

(LQ 2042) MARCH 2020 **Sub. Code: 2042**

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

Q.P. Code: 562042

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

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

1. Describe the factors influencing the chemical degradation of pharmaceutical products.
2. Explain the methods to determine particle size.
3. What are suspensions? Describe formulation of suspensions. Add notes on theory of sedimentation.

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

1. Instabilities of emulsion.
2. Pharmaceutical application of colloids.
3. Non-Newtonian system.
4. Decomposition and stabilization of drugs.
5. Dilatant flow.
6. Cone and Plate viscometer.
7. Rate and order of reaction.
8. Air permeability technique for measurement of specific surface.
9. Determination of half-life and Shelf life of a drug.

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

1. Coalescence and breaking.
2. Plastic flow.
3. Critical micelle concentration.
4. Kinematic viscosity.
5. Zeta potential.
6. Specific rate constant.
7. Hydrolysis.
8. Peptization.
9. Accelerated stability testing.
10. Micromeritics.

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

[BPHARM 0321] MARCH 2021 Sub. Code: 2042

(SEPTEMBER 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER – IV

PAPER III – PHYSICAL PHARMACEUTICS II

Q.P. Code : 562042

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

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

1. Explain about formulation of suspensions.
2. Summarize the derived properties of powders.
3. Explain briefly on degradation and stabilization study of medicinal agents.

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

1. Explain the electrical method to determine particle volume.
2. Discuss about instabilities of emulsion.
3. What is thixotrophy? Explain thixotropic behavior in formulations.
4. Discuss the methodology and limitations of accelerated stability testing.
5. Define colloid. Classify colloids with suitable examples.
6. Describe about multipoint viscometers.
7. Explain about micro emulsion.
8. Define specific surface. Describe about fisher's subsieve sizer.
9. Explain about donnan membrane effect.

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

1. Write about rheopexy.
2. What is Bancroft's Rule?
3. Define shelf life.
4. What is protective colloid? Give any two examples.
5. Write any two applications of micromeritics in pharmacy.
6. Define pseudo zero order reaction with example.
7. Projected diameter and stoke's diameter.
8. Define multiple emulsion.
9. Define yield value in plastic system.
10. State any two applications of colloids.

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

[BPHARM 0122] JANUARY 2022 Sub. Code: 2042
(MARCH 2021 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER IV
PAPER III – PHYSICAL PHARMACEUTICS II
Q.P. Code : 562042

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

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

1. Explain the various theories of emulsification.
2. What is meant by Rheology? Explain shear thickening and shear thinning with suitable examples.
3. Describe the electrical properties of colloids.

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

1. Discuss preservation of emulsions.
2. Compare and contrast lyophilic and lyophobic colloids.
3. Explain the various methods for determination of order of a reaction.
4. Describe the microscopic method for the determination of particle size and size distribution.
5. Giver an account of applications of rheology in pharmacy.
6. Describe controlled flocculation.
7. Explain the factors influencing rate of reaction.
8. Describe the principle and working procedure involved in cup and bob viscometer.
9. Explain the term micromeritics and its significance in pharmacy.

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

1. Define order of reaction.
2. Explain the term thixotrophy.
3. Define angle of repose.
4. Stoke’s law.
5. What is kraft and cloud point?
6. Overages.
7. Define Brownian motion.
8. Bulkiness.
9. Define emulsifying agent and give examples.
10. Newton’s law of flow.

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

[BPHARM 0522] MAY 2022 Sub. Code: 2042

(SEPTEMBER 2021 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER - IV

PAPER III – PHYSICAL PHARMACEUTICS II

Q.P. Code : 562042

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

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

1. Define colloids. Discuss their electrical properties of colloidal system.
2. Explain the objectives, procedure and limitations of accelerated stability studies.
3. Differentiate Newtonian and non-Newtonian fluids with examples.

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

1. Stability of suspension with sedimentation parameters.
2. Write about instability of emulsion.
3. Discuss the application of Micromeritics.
4. Explain the concept of Thixotropy.
5. Cone and Plate viscometer.
6. Decomposition and stabilization of drugs.
7. Nernst and Zeta potential.
8. Protective colloids.
9. Write about air permeability technique for measurement of surface area.

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

1. Multiple Emulsion.
2. Micellar Solubilization.
3. Bancroft rule.
4. Tyndall effect.
5. Viscosity.
6. Rheopexy.
7. Edmundson equation.
8. Angle Repose.
9. Half life.
10. Define rate of reactions.

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

[BPHARM 1022] OCTOBER 2022 Sub. Code: 2042
(MARCH 2022 EXAM SESSION)

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

Q.P. Code : 562042

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

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

1. Name various factors that affect rate of reaction. Describe how temperature and dielectric constant affects the rate of reaction.
2. Write in detail about thixotropy, anti-thixotropy and measurement of thixotropic coefficient.
3. How drugs undergo decomposition by oxidation? Describe various approaches to prevent oxidative degeneration.

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

1. Describe the interfacial properties of suspended particles.
2. Write a note on deformation of solids.
3. Explain the various methods to prepare lyophobic colloids.
4. Discuss the sieving technique used for particle size analysis.
5. Write a note on preservation of emulsion.
6. Explain various methods to determine order of reaction.
7. Discuss protective action of colloids.
8. Write in brief about flow properties of powders.
9. Describe different graphical presentations of particle size distribution in powder analysis.

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

1. Bingham Bodies.
2. Faraday-Tyndall effect.
3. Elastic Modulus.
4. Feret diameter.
5. Sedimentation Volume.
6. Particle Number.
7. Association Colloids.
8. Donnan Membrane effect.
9. Heavy powders and Light powders.
10. Define Shelf life.

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

[B.PHARM 0323] MARCH 2023 Sub. Code: 2042
(SEPTEMBER 2022 EXAM SESSION)

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

Q.P. Code: 562042

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

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

1. Explain the term rheology and its application in pharmacy. Write in detail about measurement of thixotropic coefficient.
2. Explain the various theories of emulsification.
3. Enumerate the various methods to determine surface area. Explain in detail about determination of surface area using Quantasorb Instrument.

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

1. Optical Properties of Colloids.
2. Emulsion formulation by HLB Method.
3. Describe the effect of temperature on the rate of reaction.
4. Differentiate Lyophilic, Lyophobic and Association colloids based on their general properties.
5. Derive second order rate constant and half life.
6. Photolytic degradation and its prevention.
7. Explain the principle, working procedure, advantage and use of Ostwald viscometer.
8. Formulation of flocculated and deflocculated suspension.
9. What is true density? Explain the determination of true density by liquid displacement method.

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

1. Types of viscometer with examples.
2. Edmundson Equation.
3. Specific acid-base catalysis.
4. Classify emulsion.
5. Degree of Flocculation.
6. Packing arrangement of powders.
7. Martin diameter.
8. Rheological properties of emulsion.
9. Recommend any two suitable remedy to prevent hydrolysis of medicinal drugs.
10. Define Micro emulsion.

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