

**ADICHUNCHANAGIRI UNIVERSITY**

**M.Pharm II Semester Examination – October 2020**

**TIME: 2 Hours**

**MAX.MARKS: 40**

**SUB: Advanced Biopharmaceutics and Pharmacokinetics**

**QP CODE: 42202**

**Specific Instructions**

1. Answer One Question from **Long Essay** (Each question carries 10 Marks).
2. Answer Six Questions from **Short Essay** (Each question carries 5 Marks).
3. Write the Question followed by Answer.
4. Write the same question numbers as they appear in this question paper.
5. Your answer should be specific to the questions asked.
6. Draw neat labelled diagrams wherever necessary.

**Long Essay: Answer any One**

**1X10=10**

1. Define absorption. Discuss the physicochemical factors affecting drug absorption.
2. Define pharmacokinetic model. Derive mathematical equations used to calculate pharmacokinetic parameters following iv bolus administration, assuming the drug follows one compartment open model.

**Short Essay: Answer any Six**

**6X5=30**

3. What is meant by targeted drug delivery? How does gene therapy differ from targeted drug delivery?
4. Write a note on monoclonal antibodies.
5. Describe biopharmaceutics classification system.
6. Explain in vitro- in vivo correlation.
7. Describe the estimation of  $k_m$  and  $v_{max}$  in non- linear pharmacokinetics.
8. What are generic biologics? Explain the role of FDA in generic biologics.
9. What are the considerations in the evaluation of modified- release products?
10. What are the different types of drug interactions? Explain any one.

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**TIME: 2 Hours**

**MAX.MARKS: 40**

**SUB: Computer Aided Drug Delivery System**

**QP CODE: 42203**

**Specific Instructions**

1. Answer One Question from **Long Essay** (Each question carries 10 Marks).
2. Answer Six Questions from **Short Essay** (Each question carries 5 Marks).
3. Write the Question followed by Answer.
4. Write the same question numbers as they appear in this question paper.
5. Your answer should be specific to the questions asked.
6. Draw neat labelled diagrams wherever necessary.

**Long Essay: Answer any One**

**1X10=10**

1. Write the applications of computer- aided techniques in development of pharmaceutical emulsions.
2. Write the importance of statistical modelling in pharmaceutical research. Add a note on descriptive vs mechanistic models with examples

**Short Essay: Answer any Six**

**6X5=30**

3. Explain the risk assessment process
4. What is population modelling? Write the different parameters for its assessment
5. Explain computer simulations in proteins and genes drug delivery systems
6. Explain relevance of fed and fast state in bioequivalence studies.
7. Biowaiver considerations in IVIVC study.
8. Significance of statistical parameters in formulation development
9. What are the legal ethics used in protection of use of computers in R&D.
10. Enlist the pharmaceutical applications of artificial intelligence.

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**ADICHUNCHANAGIRI UNIVERSITY**

**M.Pharm II Semester Examination – October 2020**

**TIME: 2 Hours**

**MAX.MARKS: 40**

**SUB: Cosmetics and Cosmeceuticals**

**QP CODE: 42204**

**Specific Instructions**

1. Answer One Question from **Long Essay** (Each question carries 10 Marks).
2. Answer Six Questions from **Short Essay** (Each question carries 5 Marks).
3. Write the Question followed by Answer.
4. Write the same question numbers as they appear in this question paper.
5. Your answer should be specific to the questions asked.
6. Draw neat labelled diagrams wherever necessary.

**Long Essay: Answer any One**

**1X10=10**

1. Define cosmeceuticals. Discuss most commonly used building blocks in the formulation of cosmetic products.
2. What are common problems associated with oral cavity? Describe various toothpaste formulations for anti-cavity and sensitive teeth.

**Short Essay: Answer any Six**

**6X5=30**

3. Discuss the challenges in formulating herbal cosmetics.
4. Describe various chemicals used as sunscreen agents in developing sunscreen formulations.
5. What is sun protection factor (SPF)? How the pigmentation and skin wrinkles can be controlled?
6. Explain various ingredients used in the formulation of mouth washes.
7. Discuss controversial ingredients used in cosmetics.
8. Write a note on cosmetic formulations used for eyes.
9. Classify perfumes. Enumerate perfume ingredients listed as allergens in EU regulation.
10. Write a note on hand creams and lotions.

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**ADICHUNCHANAGIRI UNIVERSITY**

**M.Pharm II Semester Examination – October 2020**

**TIME: 2 Hours**

**MAX.MARKS: 40**

**SUB: Molecular Pharmaceutics**

**QP CODE: 42201**

**Specific Instructions**

1. Answer One Question from **Long Essay** (Each question carries 10 Marks).
2. Answer Six Questions from **Short Essay** (Each question carries 5 Marks).
3. Write the Question followed by Answer.
4. Write the same question numbers as they appear in this question paper.
5. Your answer should be specific to the questions asked.
6. Draw neat labelled diagrams wherever necessary.

**Long Essay: Answer any One**

**1X10=10**

1. Explain different types of nasal drug delivery system.
2. Explain different Evaluation tests for microspheres.

**Short Essay: Answer any Six**

**6X5=30**

3. Applications of Nanoparticles in drug targeting
4. Monoclonal antibodies
5. Challenges for pulmonary drug delivery system
6. Filling methods of Aerosols
7. Extracellular barriers for gene therapy
8. Antibody drug delivery systems
9. Coacervation phase separation technique
10. Feed additives in veterinary

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**ADICHUNCHANAGIRI UNIVERSITY**

**M.Pharmacy II Semester Examination – December 2021**

**TIME: 3 HOURS**

**MAX.MARKS: 75 MARKS**

**Sub: Molecular Pharmaceutics**

**Q P Code: - 42201**

**INSTRUCTIONS:** 1. Your answer should be specific to the questions asked.  
2. Write legibly.  
3. Write the same question numbers as they appear in this question paper.  
4. Draw neat labelled diagrams wherever necessary.

**Long essay (answer any three)**

**3X10=30**

- 1 Discuss the concept of passive and active targeting of cancerous cells. Describe various approaches of active targeting in cancer treatment.
- 2 Explain ideal properties of powder formulation for its administration as dry powder inhaler.
- 3 Discuss applications of gene therapy and potential target diseases for gene therapy.
- 4 Give an account on niosomes. Discuss method of preparation of niosomes. Explain the evaluation methods of niosomes.

**Short essays (answer any nine)**

**9X5=45**

- 5 Explain antisense molecules and aptamers as drugs of future.
- 6 Explain the evaluation methods of liposomes.
- 7 Discuss different methods involved in drug targeting.
- 8 Discuss the preparation and evaluation of monoclonal antibodies.
- 9 Explain tumor targeting and brain specific drug delivery.
- 10 Discuss method to study pulmonary deposition of aerosols.
- 11 Comment on propellants and container types used for aerosols.
- 12 Explain the criteria of selection of drugs and polymers for pulmonary drug delivery.
- 13 Write brief about types of nanoparticles.
- 14 Explain drenchers and tubing products in veterinary drug delivery systems.

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**ADICHUNCHANAGIRI UNIVERSITY**

**M.Pharmacy II Semester Examination – December 2021**

**TIME: 3 HOURS**

**MAX.MARKS: 75 MARKS**

**Sub: Advanced Biopharmaceutics and Pharmacokinetics**

**Q P Code: - 42202**

- INSTRUCTIONS:** 1. Your answer should be specific to the questions asked.  
2. Write legibly.  
3. Write the same question numbers as they appear in this question paper.  
4. Draw neat labelled diagrams wherever necessary.

**Long essay (answer any three)**

**3X10=30**

- 1 Discuss the biopharmaceutical factors affecting drug bioavailability. How do you compare dissolution profiles?
- 2 Describe determination of pharmacokinetic parameters upon administration of i.v. bolus injection.
- 3 Discuss in detail two compartment open model.
- 4 Explain pharmacokinetic and pharmacodynamics interactions with examples.

**Short essays (answer any nine)**

**9X5=45**

- 5 Explain the pH-partition theory.
- 6 Write a note on monoclonal antibodies.
- 7 Explain the effect of dosage form on gastrointestinal absorption.
- 8 Write a note on non-linear pharmacokinetics.
- 9 Explain invitro-in vivo correlation and its applications.
- 10 Short note on Michaelis-Menten equation and its significance.
- 11 Add a note on gene therapies.
- 12 Elaborate on biopharmaceutical considerations in drug product design.
- 13 Comment on pharmacokinetics and dynamics of biotechnological products.
- 14 Comment on problems related with variations in dissolution testing.

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M.Pharmacy II Semester Examination – December 2021

**TIME: 3 HOURS**

**MAX.MARKS: 75 MARKS**

**Sub: Computer Aided Drug Delivery System**

**Q P Code: - 42203**

- INSTRUCTIONS:** 1. Your answer should be specific to the questions asked.  
2. Write legibly.  
3. Write the same question numbers as they appear in this question paper.  
4. Draw neat labelled diagrams wherever necessary.

**Long essay (answer any three)**

**3X10=30**

- 1 Give general overview about the history of computers in pharmaceutical research and development.
- 2 What are the various computational techniques used in Absorption, Distribution and Excretion
- 3 What is optimization. What is the role of optimization in Computer Aided Formulation Development.
- 4 Define computer simulation. Discuss the various types of simulation models.

**Short essays (answer any nine)**

**9X5=45**

- 5 What is point estimation?
- 6 Write about the transporter p-gp used in computational modelling.
- 7 Define microemulsion. Write about the microemulsion drug carrier.
- 8 Write about parameter sensitivity analysis in Gastrointestinal simulation
- 9 What is Biowaiver consideration.
- 10 What is Artificial intelligence. Write advantage and Disadvantage of Artificial intelligence in Pharma industry.
- 11 Write about the application CFD in Pharma industry.
- 12 What do you understand by population modelling in statistics.
- 13 Discuss about the ethics of computer of pharmaceutical research.
- 14 How does fed and fasted state effect GI simulation?

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# ADICHUNCHANAGIRI UNIVERSITY

M.Pharmacy II Semester Examination – December 2021

**TIME: 3 HOURS**

**MAX.MARKS: 75 MARKS**

**Sub: Cosmetics and Cosmeceuticals**

**Q P Code: - 42204**

- INSTRUCTIONS:** 1. Your answer should be specific to the questions asked.  
2. Write legibly.  
3. Write the same question numbers as they appear in this question paper.  
4. Draw neat labelled diagrams wherever necessary.

**Long essay (answer any three)**

**3X10=30**

- 1 Discuss the structure of hair and hair growth cycle. Explain the reasons and treatment for dandruff
- 2 Write about the role of emollients and rheology modifiers in cosmetic products including their classification.
- 3 Explain the cosmetic preparations for cleansing and care needs for scalp, neck and face.
- 4 Discuss on the salient features of international nomenclature cosmetic ingredients. Add a note on the labeling requirements for cosmetic products.

**Short essays (answer any nine)**

**9X5=45**

- 5 Classify perfumes used in cosmetic industry with examples.
- 6 Write a note on soaps.
- 7 Explain the cosmetic preparations used in treating bleeding gum and sensitive teeth.
- 8 What are the challenges in formulating herbal cosmetics?
- 9 Explain the factors influencing performance of preservatives in cosmetics.
- 10 Explain guidelines for herbal cosmetics with respect to preservatives
- 11 Write briefly on Sun Screen agents.
- 12 Write about controversial ingredients in cosmetics.
- 13 Briefly explain the factors affecting microbial preservative efficacy
- 14 Explain various ingredients used in the formulation of mouth washes.

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