

Roll No.

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M.Pharmacy (Pharmaceutics) (Sem.-1)
MODERN PHARMACEUTICS

Subject Code : MPH-103T

M.Code : 74659

Time : 3 Hrs.

Date of Examination : 15-06-2024

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES:

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) Enumerate the techniques used for studying drug-excipient interactions. Discuss the application of dissolution studies for this purpose. 7.5
b) Mention the advantages of using optimization techniques during product development. Highlight the Factorial Designs used for this purpose. 7.5
2. a) Highlight the key steps involved in validation of a suspension dosage form. 7.5
b) Write briefly about cGMP norms for services in a pharmaceutical plant. 7.5
3. a) Highlight issues to be considered for inventory control and management in a liquid dosage form manufacturing plant. 7.5
b) Explain the distribution of forces during compaction of solids. 7.5
4. Write short notes on (any three): (5×3=15)
a) Drug excipient interactions
b) Volume changes during compaction
c) Stability testing
d) Fish - bone diagrams.

5. a) What is prospective, retrospective and concurrent validation. Highlight the situations when they are employed for pharmaceutical dosage forms. 7.5
b) Discuss the validation of an autoclave. 7.5
6. a) What is meant by materials management? Highlight issues related to materials management in a tablet production unit. 7.5
b) Explain the effect of friction during tablet compression and its remedies. 7.5

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M.Pharmacy (Pharmaceutics) (Sem.-2)
MOLECULAR PHARMACEUTICS
(NANO TECH AND TARGETED DDS)

Subject Code : MPH-201

M.Code : 74961

Date of Examination : 08-05-2024

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carry FIFTEEN marks.

1.
 - a) Explain the biological process involved in drug targeting.
 - b) Explain the rationale behind the brain specific delivery
2. **Explain the methods of preparation and evaluation of :**
 - a) Liposomes
 - b) Nanoparticles.
3. **Give preparation and evaluation of :**
 - a) Phytosomes
 - b) Electrosomes.
4. Highlight the preparation and evaluation of aerosols for pulmonary delivery system.
5. **Write short note on :**
 - a) Gene therapy
 - b) Biodistribution and pharmacokinetics
 - c) Gene expression system.
6. **Enumerate following nucleic acid based therapeutic systems :**
 - a) Aptamers
 - b) Antisense molecules.

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M. Pharmacy (Pharmaceutics) (Sem.-2)

COMPUTER AIDED DRUG DELIVERY SYSTEM

Subject Code : MPH/203

M.Code : 74963

Date of Examination : 15-05-2024

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a. Summarize the history of computers in pharmaceutical research and development.
- b. Explain :

- i) Sensitivity Analysis
- ii) Population Modeling.

2. Give the modeling techniques for

- a. BCRP and OCT Transporters.

- b. Drug absorption and solubility:

3. a. Expand with example the Qbd terminologies:

- i) CQA

- ii) CMA

- iii) CPP

- b. Enumerate the benefit of using optimization designs in the preparation of microemulsion drug carrier.

4. Write short note on :

- ### a. Model construction

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b. Fed vs Fasted state

- c. *In vitro* dissolution models.

5. Write short note on :

- ### a. Pharmaceutical Automation

- b. Robotics.

6. Write short note on :

- a. Computer simulations in isolated tissues and cell.

- b. Bio waver consideration.

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M.Pharmacy (Pharmaceutics) (Sem.-2)

COSMETIC & COSMECEUTICALS

Subject Code : MPH/204

M.Code : 74964

Date of Examination : 18-05-2024

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. **Discuss briefly:**
 - a) Spurious Cosmetic.
 - b) Prohibition of sale of cosmetics
 - c) Surfactants.
 - d) Classification of rheological additives.
 - e) Perfume ingredients listed as allergens.
2. Discuss the COSMOS guidelines with respect to use of emulsifiers in Herbal Cosmetics.
3.
 - a) Define SPF. How SPF is calculated. Classify different types of sunscreens along with examples
 - b) What are controversial ingredients in Herbal Cosmetics? Discuss the basis of their controversy.
4.
 - a) Classify antimicrobials as preservatives. Discuss their significance and limitations in formulations of cosmetics.
 - b) Discuss the building blocks of moisturizing creams.
5.
 - a) Draw a neat labelled diagram of hair cycle.
 - b) Discuss the regulatory provisions related to labeling of cosmetics.
6.
 - a) Discuss the challenges in manufacturing of herbal cosmetics?
 - b) Discuss the designing of cosmaceuticals for problems of dandruff.

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M.Pharmacy (Pharmaceutics) (Sem.-2)

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS

Subject Code : MPH/202

M.Code : 74962

Date of Examination : 11-05-2024

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
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1. a) Enumerate different types of biopharmaceutical studies. Explain the clinical relevance of these studies.
b) Explain the drug pharmacokinetics after IV infusion.
 2. a) Write a note on simulated gastric and simulated intestinal fluid for dissolution testing.
b) If the amount of drug in body declines from 100% of IV dose (bolus injection) to 25% of the dose in 8 hr, what is the elimination half-life of the drug (assume first order kinetics)?
 3. a) Enlist the formulation factors influencing drug absorption from tablet dosage form.
b) Discuss the experimental procedures to determine permeability of drugs in vitro.
 4. a) Enumerate in vitro and in situ methods used for evaluating drug permeability. Briefly explain each method.
b) Discuss in brief gene therapy.
 5. a) Write a note on CYP 450 based interactions.
b) Distinguish one compartment from two compartment model. Derive a simple equation for predicting the plasma drug concentration for one compartment open model after IV bolus injection.
 6. a) Distinguish between linear and non-linear pharmacokinetics? Discuss the causes of non-linearity and the methods employed to recognize non-linear behavior in drug pharmacokinetics.
b) What are bioequivalent products? Briefly explain various experimental designs employed for evaluating bio equivalency in drug products.

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