

09.01.2019

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Paper Code : MPC / MPH /  
MPL-101-T

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**M. Pharm.**

**(Pharmaceutics / Pharmacology / Pharmaceutical Chemistry)**

**1<sup>st</sup> Semester Examination**

**Modern Pharmaceutical Analytical Techniques**

*Time : 3 Hours ]*

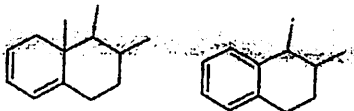
*[ Max. Marks : 75*

**Note:** 1. Attempt all questions

2. Each question carries equal marks.

1. **Shorts answer: Attempt any FIVE questions [3×5=15]**

- (a) Explain Fragmentation pattern in Mass spectroscopy.
- (b) Discuss the working of MALDI analyser.
- (c) What is spectroscopy and give its application?
- (d) Using woodward's rule predict the wavelength of maximum absorption for each of the following compounds:



- (e) What are the Chromatographic parameters?
  - (f) What are the factors affecting column efficiency in Adsorption chromatography?
  - (g) Give the principle of Gel electrophoresis.
2. **Shorts answer: Attempt any FIVE questions [3×5=15]**
- (a) Discuss the application of Chromatography technique.
  - (b) How many normal vibration modes possible in the linear molecule?

(c) Why Tetramethylsilane  $[(CH_3)_4Si]$  used as a internal standard in NMR spectroscopy?

(d) What is Mc Lafferty rearrangement?

(e) What is the Principle of mass spectroscopy?

(f) Discuss the factors affecting chemical shift.

(g) Explain shielding and De-shielding effect with examples.

**3. Long answer: Attempt any TWO questions [7.5x2=15]**

(a) Give the Instrumentation of IR Spectroscopy.

(b) What type of electronic transition possible in U.V. spectroscopy?

(c) Explain principle and application of Flame emission spectroscopy.

**4. Long answer: Attempt any TWO questions [7.5x2=15]**

(a) Explain following terms with suitable example:

(a) Red Shift      (b) Blue Shift      (c) Auxochrome

(b) Write the type of detectors used in Infrared spectroscopy.

(c) Explain modes of vibrations of atoms in polyatomic molecule.

**5. Very Long answer: Attempt any ONE question**

**[15x1=15]**

(a) Write in brief instrumentation and Pharmaceutical application of Infra red spectroscopy.

(b) Write short notes on Immunological assay.

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**M. Pharm. (Pharmaceutics)****1<sup>st</sup> Semester Examination****Drug Delivery Systems***Time : 3 Hours ]**[ Max. Marks : 75***Note: 1. Attempt all questions****2. Each question carries equal marks.****1. Attempt any FIVE questions****[3×5=15]**

- (a) Eye ointments
- (b) Barriers for transdermal drug delivery
- (c) Enzyme activated drug delivery system
- (d) Sonophoresis activated drug delivery systems
- (e) Barriers for oral delivery of proteins
- (f) Mechanism of drug absorption from buccal cavity

**2. Attempt any FIVE questions****[3×5=15]**

- (a) Structure of skin
- (b) Mechanically activated drug delivery systems
- (c) Vapor pressure activated drug delivery systems
- (d) Lacriserts
- (e) Ocuserts
- (f) Hydrodynamic pressure activated drug delivery systems.

**3. Attempt any TWO questions****[7.5×2=15]**

- (a) Discuss the various strategies for transdermal delivery of proteins
- (b) Write a note on mechanism of uptake of antigens in vaccine delivery

(c) Discuss the transdermal delivery of vaccines

4. Attempt any TWO questions [7.5x2=15]

(a) Write a note on formulation components of transdermal drug delivery systems.

(b) Write a note on 3d printing of pharmaceuticals.

(c) Explain the osmotic activated drug delivery systems with a suitable example.

5. Attempt any ONE question [15x1=15]

(a) Write a note on various methods for evaluating the buccal drug delivery systems.

(b) Classify the different activation modulated drug delivery systems and discuss the chemical based modulated drug delivery systems.

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14/11/19

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**M.Pharm (Pharmaceutics)**

**1<sup>st</sup> Semester Examination**

**MODERN PHARMACEUTICS**

*Time : 3 Hours ]*

*[ Max. Marks : 75*

**Note:** Attempt all questions as per Instructions.

- 1. Short Answer : Attempt any FIVE questions [3×5=15]**
  - (a) Stability testing guidelines
  - (b) Evaluation of small volume parenterals
  - (c) Higuchi plot
  - (d) Solid Dispersion
  - (e) Guidelines for validation of equipments
  - (f) Budget and cost control
  
- 2. Short Answer : Attempt any FIVE questions [3×5=15]**
  - (a) Describe the IQ, QQ and PQ
  - (b) Write about korresmeyer peppas plot
  - (c) What is EOQ
  - (d) Write the significance of factorial design
  - (e) Explain the physical instability markers of emulsion
  - (f) Write a note on accelerated stability study
  
- 3. Long Answer: Attempt any TWO questions[7.5x2=15]**
  - (a) Describe the methods for determining drug-excipient interaction
  - (b) What will be the optimizing parameters in tablet preparation?
  - (c) What are the guidelines for calibration of equipments.

4. **Long Answer: Attempt any TWO questions[7.5x2=15]**

- (a) Describe the methods of inventory control
- (b) Explain similarity and different factors
- (c) What will be the effect of friction in tablet compression

5. **Very Long Answer: Attempt any ONE question**

**[15x1=15]**

- (a) Define cGMP. What will be its objective? Write its content in detail.
- (b) Write the scope and merits of validation. Describe the types of validation.

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**M. Pharm. (Pharmaceutics)**  
**1<sup>st</sup> Semester Examination**  
**Regulatory Affair**

*Time : 3 Hours ]*

*[ Max. Marks : 75*

- Note:** 1. Attempt all questions  
2. Each question carries equal marks.

1. Attempt any **FIVE** questions

**[3×5=15]**

- (a) Master formula record.
- (b) Investigator Brochure (IB).
- (c) Distribution records
- (d) Drug product performance
- (e) USFDA
- (f) Write short note on Chemistry, Manufacturing and Controls (CMC).
- (g) Write short note on investigation of medical product dossier.

2. Attempt any **FIVE** questions

**[3×5=15]**

- (a) Write short note on Drug-master file.
- (b) Common technical document (CTD) format.
- (c) Pharmacovigilance safety monitoring in clinical trials.
- (d) Labeling of drugs.
- (e) Outsourcing BA and BE studies to contract research organization.
- (f) Medicines & Healthcare products Regulatory Agency.
- (g) Investigator Brochure (IB)

3. Attempt any TWO questions [7.5x2=15]

- (a) Elaborate different sections of ANDA
- (b) Institutional ethical committee.
- (c) Write various ICH guidelines for stability testing of pharmaceuticals.

4. Attempt any TWO questions [7.5x2=15]

- (a) Describe 'code of federal regulation'
- (b) Regulation of medical devices
- (c) Health Insurance Portability and Accountability Act (HIPPA)

5. Attempt any ONE question [15x1=15]

- (a) Describe 'The Drug Price Competition and Patent Term Restoration Act' (Waxman Act)
- (b) Describe in detail about regulatory requirements of EU

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