Code No: G-13215/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII - Semester (Backlog) Examination, July 2025

Subject: Instrumental Methods of Analysis

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define auxochrome and chromophore with example.
2. What is fluorescence quenching? Give examples.
3. Write the interferences in Flame photometry.
4. Write the applications of Nephelometry and turbidometry techniques.
5. Mention different types of columns used in Gas chromatography?
6. Write the ion exchange mechanism of ion exchange chromatography.
7. What are the different types of molecular vibrations in IR spectroscopy?
8. Define theoretical plate and give the formula for calculating theoretical plates.
9. Define the term Electrophoretic mobility.
10. Write the applications of Gel-permeation chromatography.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe different components of uv-visible spectrophotometer with a neat labelled diagram.
12. Explain the principles and experimental details of Gel electrophoresis for Quantitative analysis.
13. Explain the principles and instrumentation of Gas chromatography technique.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the principles of fluorescence and phosphorescence with help of Jablonski diagram.
15. Explain different sample handling techniques used in IR spectroscopy.
16. Write the different factors affecting electrophoretic mobility of ions in electrophoresis separations.
17. Describe the principle instrumentation & applications of Flame Photometry?
18. Describe the TLC and applications.
19. Write about the Detectors used in HPLC.
20. Explain the separation principles and working procedure of Capillary electrophoresis.
21. Explain any two Detectors used in GC.
22. Explain the theoretical principles and applications of Paper chrometography.

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Code No: G-13218/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII - Semester (Backlog) Examination, July 2025

Subject: Novel Drug Delivery Systems

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate reservior and matrix systems.
2. What are polymers. Classify them with examples.
3. Define microencapsulation. Write its applications
4. Write the advantages and disadvantages Nasal and Pulmonary routes of drug delivery.
5. Write the different types of nanoparticles.
6. What is transmucosal permeability.
7. Explain advantages and disadvantages of intrauterine devices.
8. Write the applications of monoclonal antibodies.
9. What are the advantages of niosomes when compared to liposomes
10. What is floating time and floating lag time.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Discuss formulation & evaluation of transdermal drug delivery systems.
12. Explain in detail coacervation phase separation method with suitable examples.
13. Discuss about in detail a) Alzet osmotic pump b) Dry powder inhaler.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain various basic components in the formulation of Transdermal patches
15. Explain the theories of mucoadhesion.
16. Explain about factors affecting permeation in transdermal drug delivery system.
17. Discuss the approaches used in development of gastroretentive drug delivery system.
18. Explain about nasal sprays and nebulizers.
19. Write a note on evaluation of niosomes.
20. Discuss the ocusert with neat sketch.
21. Explain the preparation methods of nanoparticles.
22. Explain metered dose inhalers.

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Code No: G-13217/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII – Semester (Backlog) Examination, July 2025

Subject: Pharmacy Practice

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Discuss the functions of hospital pharmacist.
2. What is Idiosyncrasy? Give examples.
3. Mention the goals of medication history interview.
4. Enlist the types of drug distribution systems.
5. Mention the different sources of drug information.
6. Discuss the interpretation of the prescription.
7. Define Clinical Pharmacy. Mention its objectives.
8. Explain the significance of OTC drugs.
9. Define inventory. Mention the objectives of inventory control.
10. Mention the role of hospital pharmacist in the investigational use of drugs.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Define Clinical Pharmacy. Explain in detail the functions and responsibilities of clinical pharmacist.
12. Define Therapeutic Drug Monitoring (TDM). Mention its objectives and explain the process involved in TDM.
13. (a) Explain in detail the objectives of Pharmacy and Therapeutic Committee (PTC).
    (b) Discuss the role of PTC in adverse drug monitoring.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Define hospital and explain its organization.
15. Explain the role and responsibilities of community pharmacist.
16. Define hospital formulary and explain its need.
17. Describe various systems involved in the dispensing of drugs to inpatients.
18. Illustrate the criteria for addition or deletion of drugs from hospital formulary.
19. Discuss the role of Pharmacist in education and training program in the hospital.
20. Discuss the role of Pharmacist in interdepartmental communication and community health education.
21. Define OTC drugs and mention their significance.
22. Mention various laboratory blood tests. Explain their significance.

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Code No: G-13216/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII - Semester (Backlog) Examination, July 2025

Subject: Industrial Pharmacy - II

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is OOS & change control.
2. What is platform technology.
3. What is technology transfer?
4. What are legal issues in technology transfer.
5. Define qualification and validation.
6. What is Investigator's Brochure (IB).
7. What is bioavailability and bioequivalence?
8. What is informed consent procedure for clinical trials.
9. Write the role of ISO in quality management.
10. What is COPP.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a note on pilot plant scale up considerations for solids and semi solid dosage forms.
12. **a)** Write the principles of QBD and applications of QbD in development of pharmaceutical products.
    b) Write a note on Total Quality Management.
13. Write a note on the **i)** Role and responsibility of regulatory affairs professionals
    ii) IND and NDA application requirement for drug approval

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on documentation in pilot plant and scale up.
15. Write the SUPAC guidelines for solid and liquid dosage forms.
16. Write a note on APCTD, NRDC, TIFAC technology transfer agencies in India.
17. Write a note on analytical method transfer.
18. Write a note on role of biostatistics in pharmaceutical product development and Data representation for FDA submissions.
19. Write a note on six sigma concept.
20. Write a note on ISO 14000.
21. Write a note on organization and functions of CDSCO.
22. Write a note on regulatory requirements and approval procedures for new drugs.

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Code No. G-13106/PCI

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (PCI) (Main & Backlog) Examination, March 2025
Subject: Instrumental Methods of Analysis

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. State and explain Beer-Lambert equation.
2. What are the different types of fundamental modes of vibration in molecules after absorption of IR radiations?
3. Define fluorescence and Phosphorescence phenomena.
4. Write the principles of Flame photometry technique.
5. Define the term Retention time and Resolution in HPLC?
6. Write the principles of partition and adsorption chromatography.
7. Write the applications of gel permeation chromatography.
8. What are the different types of Ion exchange resins used in Ion-exchange chromatography?
9. Write the principles of separation in Electrophoresis.
10. Write about the different types of columns used in GC.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe different components of UV spectrophotometer with a neat labelled diagram.
12. Explain the principles and experimental details of paper chromatography for Quantitative analysis.
13. a) Describe the different sampling preparation techniques in IR spectroscopy.
    b) Describe different types of detectors used in HPLC instruments.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss the different factors influencing intensity of fluorescence of molecules.
15. Explain the theoretical principles and applications of affinity chromatography.
16. Explain in brief about Paper electrophoresis technique.
17. Describe different methods for quantitative analysis of single component samples by UV spectrophotometry.
18. Explain the principle and measurement of Interferences in Atomic Absorption spectroscopy.
19. Explain the principles, advantages and disadvantages, and applications of thin layer chromatography.
20. Write about the Spectrophotometric titrations with examples?
21. Explain the different derivatization techniques used in Gas Chromatography?
22. Explain the instrumentation of Nephelotubiodmetry.

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Code No. G-13109/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII - Semester (Main & Backlog) Examination, March 2025
Subject: Novel Drug Delivery Systems

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define the following terms?
   a) Controlled drug delivery system
   b) Sustained drug delivery system
2. Distinguish between matrix and reservoir systems?
3. List out the methods used for liposomes?
4. Define the following
   a) Osmotic drug delivery system b) Transdermal drug delivery system
5. Classify gastro retentive drug delivery systems?
6. Define the following?
   a) Implants b) Niosomes
7. Differentiate between Zero Order and First Order release kinetics?
8. List out the different types of nanoparticles?
9. Applications of monoclonal antibodies?
10. Discuss the advantages of Ocusert?

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Discuss the formulation and evaluation of floating drug delivery systems?
12. Write in detail about the coacervation phase separation technique?
13. Write in detail about the following?
    a) Explain about the push pull systems?
    b) Mucoadhesive drug delivery system?

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss about the factors influencing formulation of sustained release system?
15. Write the polymerization techniques?
16. Explain the Wuster process for microencapsulation with an example?
17. Explain the different theories of mucoadhesion?
18. Describe the formulation of Buccal drug delivery systems?
19. Discuss about the metered dose inhalers?
20. Write about ocular controlled drug delivery systems? Describe the methods to overcome the ocular barriers?
21. Write about the applications Intrauterine devices?
22. Write about the elementary osmotic pump?

Code No: G-13108/PCI

FACULTY OF PHARMACY

B. Pharmacy VII Semester (PCI) (Main & Backlog) Examination, March 2025

Subject: Pharmacy Practice

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Classify Hospitals based on the system of medicine and speciality.
2. What is Idiosyncrasy? Give examples.
3. Define rational use of medicines.
4. Enlist the types of drug distribution systems.
5. Mention the different sources of drug information.
6. What do you mean by automatic stop orders?
7. Define Clinical Pharmacy. Mention its objectives.
8. Explain the significance of OTC drugs.
9. Define inventory. Mention the objectives of inventory control.
10. Define and classify ADR.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Define Medication Adherence. Mention the methods to measure it. What is the role of a Pharmacist in promoting medication adherence in patients.
12. a) Explain in detail the objectives of Pharmacy and Therapeutic Committee (PTC).
    b) Discuss the role of PTC in adverse drug monitoring.
13. Define Therapeutic Drug Monitoring (TDM). Mention its objectives and explain the process involved in TDM.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Define hospital and explain its organization.
15. Describe the various systems involved in the dispensing of drugs to inpatients.
16. Define hospital formulary and explain its need.
17. Explain the role and reponsibilites of community pharmacist.
18. Explain why communication skill is important for a pharmacist.
19. Discuss the role of Pharmacist in the education and training program in the hospital.
20. Discuss the role of Pharmacist in the interdepartmental communication and community health education.
21. Explain hospital budget preparation and implementation.
22. Mention the various laboratory blood tests. Explain their significance.

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Code No: G-13107/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII - Semester (Main & Backlog) Examination, March 2025
Subject: Industrial Pharmacy - II

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is scale up?
2. Write a note on documentation in pilot plant.
3. What is technology transfer?
4. Write a note on legal issues in technology transfer.
5. What is qualification and validation?
6. Write a note on Investigator's Brochure (IB).
7. What is quality assurance?
8. Why informed consent procedure is important in clinical trials?
9. Write the role of ISO in quality management.
10. Write a note on state licensing authority responsibilities.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is pilot plant? Write the general considerations for pilot plant and scale up for Tablets and Liquid dosage forms.
12. Write a note on the (i) IND and NDA application (ii) Clinical research protocol.
13. (a) Write a note on Indian drug regulatory. Write CDSCO functions.
    (b) Explain about Central Drugs Laboratory and its function.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write the SUPAC guidelines for solid and liquid dosage forms.
15. Write a note on documentation in pilot plant and scaleup.
16. Write general principles of technology transfer.
17. Write the role and responsibility of regulatory affairs professionals.
18. Write a note on APCTD, NRDC, TIFAC technology transfer agencies in India.
19. Write the Principles and applications of QBD.
20. Write a note on TQM.
21. Write a note on NABL and GLP.
22. Write a note on regulatory requirements and approval procedures for new drugs.

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