Code No.: H-8157/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII – Semester (Main & Backlog) Examination, February / March 2026

Subject: Instrumental Methods of Analysis

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

PART – A

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

1. What are the differences between chromophore and auxochrome? Give suitable examples.
2. Explain the phenomena of fluorescence?
3. What are the sources of IR radiation?
4. Define the term Chromatography. List some chromatographic techniques.
5. List the deviations from Beer-Lambert's law.
6. What is the principle of thin layer chromatography?
7. What is the difference between nephelometry and turbidometry?
8. What are the different development techniques in paper chromatography?
9. List the similarities and differences between GC and HPLC.
10. Define electrophoresis and give examples of electrophoretic techniques.

PART – B

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

11. With a labelled diagram explain the principle & instrumentation of HPLC.
12. Explain the process of separation of a mixture by gel electrophoresis.
13. Explain UV-Visible instrumentation with a labeled diagram.

PART – C

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

14. With a neat labelled diagram explain the principle of AAS.
15. Explain the sampling techniques in IR spectroscopy.
16. What is the principle and applications of flame photometry? Explain the instrumentation with a labelled diagram.
17. Explain in detail the experimental procedure for the separation of any mixture by TLC.
18. List and briefly explain any two GC detectors.
19. Explain the principle and methods to perform paper electrophoresis.
20. Explain the principle of Ion exchange chromatography.
21. What is meant by quenching? What are the different types of quenching?
22. Explain the principle and instrumentation of fluorimeter with a neat labeled diagram.

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Code No.: H-8158/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII Semester (Main & Backlog) Examination, February/March 2026

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 pilot plant and scale-up?
2. Mention SUPAC guidelines.
3. Define validation.
4. What is technology transfer.
5. Write the role of regulatory affairs.
6. Write the importance of ANDA.
7. What are various phases of clinical trials?
8. Write a note on informed consent.
9. Write a note on functions of CDL.
10. Write a note on COPP.

PART B

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

11. Write the general considerations for pilot plant and scale up for various dosage forms.
12. Write in detail about **i)** IND **ii)** NDA and **iii)** ANDA
13. a) Explain the principles of QBD.
    b) Write a note on six sigma concept.

PART C

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

14. Write general principles of Technology Transfer.
15. Write a note on Technology Transfer related documentation.
16. Write the role of regulatory affairs department in drug approval.
17. Write about clinical research protocol.
18. Write a brief note on NABL and GLP.
19. Write a note on ISO 14000.
20. Write briefly on TQM.
21. Write a note on Indian Regulatory. Write CDSCO functions.
22. Explain about Central Drugs Laboratory and its function.

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Code No: H-8159/PCI

FACULTY OF PHARMACY

B. Pharmacy VII Semester (PCI) (Main & Backlog) Examination, February/March 2026

Subject: Pharmacy Practice

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

PART – A

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

1. Define clinical pharmacy.
2. Define hospital Pharmacy
3. Define ADR
4. Classify investigational new drug.
5. Mention few drugs which require TDM
6. Define drug information center
7. Mention few counselling information while dispensing antibiotics
8. Define lead time
9. Mention different methods of inventory control
10. What do you mean by fixed dose combination (FDC)

PART – B

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

11. List the various haematological tests and explain any five tests in detail and its significance.
12. Explain economic order quantity as a method of inventory control.
13. What are the steps involved in the patient counselling. Explain the barriers of patient counselling.

PART – C

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

14. Explain organisation structure of a hospital, medical staff involved and their functions.
15. Explain various adverse drug reaction reporting and management techniques.
16. How records are maintained in wholesale and retail community pharmacy outlets
17. How drugs are dispensed to inpatients. Add a note on labelling of drugs.
18. Describe therapeutic drug monitoring.
19. What are the causes of medication non-adherence? Mention the role of pharmacist in improving adherence.
20. Explain with example how patient medication history interview is taken.
21. What is the role of pharmacist in education and training program in the hospital
22. Explain difference between prescription medicines and medication order for inpatients. What are the legal implications.

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Code No.: H-8160/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) VII Semester (Main & Backlog) Examination, February/March 2026

Subject: Novel Drug Delivery System

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

PART – A

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

1. Define controlled release dosage forms. Write its advantages.
2. What are the various ideal characters required for a drug to formulate controlled release formulations
3. Enlist the coating materials used in microencapsultion.
4. Explain mucoadhesion.
5. Define microspheres and microcapsules.
6. List out permeation enhancers used in Transdermal drug delivery system with examples.
7. Write advantages and disadvantages of implantable drug delivery systems.
8. Write the applications of targeted drug delivery system.
9. Explain the basic structural components of liposomes.
10. Explain about intra ocular barriers.

PART B

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

11. Discuss the physicochemical factors and biological factors affecting controlled drug delivery system.
12. Explain the approaches used in development of gastro retentive drug delivery systems.
13. Explain the basic components and formulation approaches used in transdermal drug delivery system.

PART C

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

14. Explain the terms: Delayed release, sustained release, prolonged release and timed release. What are the formulation additives in the formulation of Delayed release formulation.
15. Define polymer. Classify them, write their applications in controlled release formulations.
16. Discuss formulation considerations of buccal drug delivery systems
17. Write a note coacervation phase separation.
18. Discuss about intra uterine devices.
19. Explain about evaluation methods of liposomes.
20. Write about production of monoclonal antibodies.
21. Explain about ocular inserts.
22. Explain about the inflatable and gastroadhesive systems.

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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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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?

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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. Describe the various systems involved in the dispensing of drugs to inpatients.
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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