

II - Analysis

Code No: H-8100/PCI

FACULTY OF PHARMACY
M. Pharmacy (Pharma. Analysis) II-Semester (PCI) (Main & Backlog)
Examination, December 2025

Subject: Quality control and Quality assurance

Time: 3 Hours

Max Marks: 75

Note: Answer any Five Questions.

(5X15=75 Marks)

1. Write a short note on the following
 - (a) Quality control. (5)
 - (b) Quality assurance. (5)
 - (c) Non clinical testing. (5)
2. Explain the various CPSCEA guidelines for laboratory animal facility. (15)
3. Define IPQC. Explain in detail about various IPQC tests for
 - (a) Capsules. (8)
 - (b) Parenterals. (7)
4. Give a brief note on
 - (a) Quality audit plan. (5)
 - (b) Protocols and reports. (5)
 - (c) Distribution records. (5)
5. Discuss the Good laboratory practices for a quality control laboratory in detail. (15)
6.
 - (a) Explain the various documents to be maintained by the quality control department. (7)
 - (b) Explain Master formula and Batch formula records. (8)
7. Explain various cGMP guidelines according to schedule M. (15)
8. Write a note on
 - (a) Sanitation of manufacturing premises (5)
 - (b) Drug product inspection. (5)
 - (c) Production record review. (5)



Code No. H-8099/PCI

FACULTY OF PHARMACY

M. Pharmacy (Phar. Analysis) II - Semester (Main & Backlog)

Examination, December 2025

Subject: Modern Bio analytical techniques

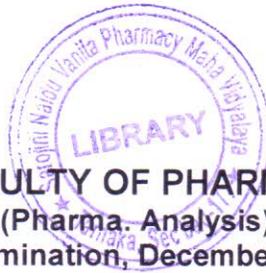
Time: 3 Hours

Max. Marks: 75

Note: Answer any five following questions.

(5 x 15 = 75 Marks)

1. a) Summarize the general principle and procedure involved in protein precipitation sample treatment methods.
b) Explain the Bioanalytical method validation as per USFDA guidelines.
2. a) Describe the compendial methods of dissolution testing.
b) Explain different experimental methods for solubility determination.
3. a) Discuss about Cytochrome P450 based drug interactions.
b) Explain about different Pharmacokinetic and Pharmacodynamic drug interactions with examples.
4. a) Write about different cell culture media.
b) Discuss different techniques for the characterization of cells along with their applications.
5. a) Write about the clinical significance of Bioequivalence studies.
b) Explain different methods for assessment of the bioavailability of new drug products.
6. a) Write about basic equipment used in cell culture lab.
b) Discuss about Biopharmaceutical factors affecting drug bioavailability.
7. a) Explain about in-vivo and in- vitro methods for checking cellular permeability of new drug products.
b) Explain about principles, instrumentation and applications of flow cytometry.
8. a) Write about Rat liver microsomes and Human Liver microsomes.
b) Discuss about different approaches for quantification of metabolites.



Code No. H-8102/PCI

FACULTY OF PHARMACY
M. Pharm II-Semester (Pharma. Analysis) (PCI) (Main & Backlog)
Examination, December 2025

Subject: Advanced Instrumental Analysis

Time: 3 Hours

Max. Marks: 75

Note: Answer any Five following questions.

(5X15=75 Marks)

1. Write the principle and Instrumentation of HPLC and explain the following parameters (a) Peak shape (b) Capacity factor (c) Resolution.
b) Write about Chiral analysis and explain about enantiomeric separation?
2. a) Discuss about Size-Exclusion Chromatography and Affinity chromatography?
b) Explain about head space sampling and derivitization in Gas chromatography
3. a) Write the instrumentation and applications of Super critical Fluid Chromatography?
b) Explain about Crown ethers and buffer additives in capillary electrophoresis?
4. Explain the following Ionization techniques in mass spectrometry a) Electron Impact b) Chemical Ionization C) Field Ionization
5. a) What is chemical shift? Explain the various factors influencing it?
b) Write about 2DNMR?
6. a) Write about Preparative chromatography?
b) Discuss the detectors used in Gas chromatography?
7. a) Explain about columns and column problems in HPLC?
b) Discuss the instrumentation of HPLC.
8. a) Explain about LC-MS analysis?
b) Write about a) coupling constant b) Shielding and de shielding in NMR spectroscopy?



Code No: G-13154/PCI

FACULTY OF PHARMACY

M. Pharmacy (PCI) II - Semester (Pharm. Analysis) (Backlog) Examination, June 2025

Subject: Advanced Instrumental Analysis

Time: 3 Hours

Max. Marks: 75

Note: Answer any five questions. All questions carry equal marks.

(5 x 15 = 75 Marks)

1. (a) Explain about various parameters in HPLC.
 - (i) Peak shape
 - (ii) Capacity factor
 - (iii) Plate number and plate height
 - (iv) Resolution.(b) Write about Chiral analysis?
2. (a) Discuss about Size-Exclusion Chromatography and Affinity chromatography?
(b) Explain about head space sampling in Gas chromatography.
3. (a) Write the instrumentation and applications of SFC.
(b) Explain about Crown ethers and buffer additives in capillary electrophoresis.
4. Explain about Electron impact, CI, FAB, ESI Ionization techniques in mass spectrometry.
5. (a) What is chemical shift? Explain the various factors influencing it?
(b) Write about 2DNMR.
6. (a) Write about Preparative chromatography.
(b) Discuss the derivatization methods of Gas chromatography.
7. (a) Explain about columns and column problems in HPLC.
(b) Discuss about NOESY.
8. (a) Explain about LC-MS analysis?
(b) Write about
 - (i) Coupling constant
 - (ii) Shielding and deshielding in NMR spectroscopy



Code No. G-13157/PCI

FACULTY OF PHARMACY

M. Pharmacy (Pharma Analysis) II - Semester (PCI) (Backlog) Examination, June 2025
Subject: Herbal and Cosmetic Analysis

Time: 3 Hours

Max. Marks: 75

Note: Answer any five questions. All questions carry equal marks.

1. (a) Discuss the standardization of herbal drugs according to AYUSH guidelines. [10]
(b) Explain the pharmacokinetic issues of herbal drugs. [5]
2. Discuss the protocol of Indian patent law as applicable to herbal drugs and natural products. [15]
3. (a) Write a note on Stability testing of natural products. [10]
(b) Explain the effect of herbal medicine on clinical laboratory testing. [5]
4. (a) Describe the spontaneous reporting schemes for bio drug adverse reactions? [8]
(b) Write a note on bio drug-food interactions with suitable examples? [7]
5. (a) Explain the procedure involved in determination of acid value and Iodine value of cosmetic products. [8]
(b) Write the analysis of Skin creams preparations as per BIS. [7]
6. Discuss the sampling and testing of baby care products and lipsticks as per BIS. [15]
7. (a) Explain AYUSH guidelines for safety monitoring of natural medicine. [10]
(b) Explain the challenges in safety monitoring of herbal drugs. [5]
8. Explain Siddha and Unani pharmacopoeias. [15]



Code No: G-13214/PCI

FACULTY OF PHARMACY
M. Pharmacy (Common to All) III - Semester (PCI) (Main & Backlog) Examination,
June 2025

Subject: Research Methodology and Biostatistics

Time: 3 Hours

Max Marks: 75

Note: Answer any five Questions. All Questions carry equal marks.

1. (a) Write a note on types of research. (7)
(b) What are the strategies to eliminate errors/bias? (8)
2. (a) Write a note on paired and unpaired student t test. (7)
(b) Explain in brief about importance of sample size in research. (8)
3. (a) Describe in brief about values in medical ethics. (7)
(b) Write a note on euthanasia and informed consent. (8)
4. (a) Describe about the necessary SOPs required to maintain laboratory animals. (7)
(b) Write a note on treatment and control of diseases in laboratory animals. (8)
5. (a) Write a note on history of declaration of Helsinki. (7)
(b) Write the basic principles of medical research. (8)
6. (a) Explain in brief about objectives of research (7)
(b) Write a note on placebo and blinding technique. (8)
7. (a) Write about t-test. (7)
(b) Write a note on correlation co-efficient. (8)
8. (a) Explain about the double effect and medical research ethics committee. (7)
(b) Write a note on transport of laboratory animals. (8)
