Pharmaceutical Analysis

QP Code:41101

Hall Ticket Number

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA (Co-Ed.)(Autonomous)
M.Pharmacy (PCI) SEMESTER I (Main) Examination, APRIL-2026

Course:Modern Pharmaceutical Analytical Techniques

Time: 3 Hours Max. Marks: 75

Question No.	Question	CO	BL
PART-A	**Answer any 5 questions.**	**5 × 15 = 75**	
1	Determine the theory of IR spectroscopy, the different modes of molecular vibrations, and the factors affecting vibrational frequency with suitable explanations.	*I*	*5*
2	Explain in detail the principle and applications of Nuclear Magnetic Resonance Spectroscopy with suitable examples.	*II*	*2*
3	Write the principle, theory, and instrumentation of Mass Spectrometry with suitable explanations and diagrams.	*III*	*1*
4	Explain High Performance Liquid Chromatography (HPLC), with neat and well-labeled diagrams, explaining their principles and working mechanisms	*IV*	*1*
5	Illustrate the principle, instrumentation, factors affecting separation, and applications of gel electrophoresis with suitable diagrams	*V*	*2*
6	What is the principle, procedure, and applications of Bioluminescence Immunoassay (BIA) with suitable examples	*VI*	*1*
7	Explain in detail the principle and instrumentation of a double beam spectrophotometer with a neat labelled diagram.	*I*	*2*
8	Illustrate the techniques of paper chromatography and thin layer chromatography (TLC), and discuss their advantages and disadvantages with suitable examples	*IV*	*2*

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QP Code:42102

Hall Ticket Number

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA (Co-Ed.)(Autonomous)
M.Pharmacy (PCI) SEMESTER I (Main) Examination, APRIL-2026

Course:Advanced Pharmaceutical Analysis

Time: 3 Hours Max. Marks: 75

Question No.	Question	CO	BL
PART-A	**Answer any 5 questions.**	**5 × 15 = 75**	
1	A) Define impurity. Give the classification of impurities in drug substances/API. 8M B) List and explain the quantification of impurities as per ICH guidelines. 7M	*I*	*1*
2	A) What is meant by residual solvents? Give the classification of residual solvents 8M B) Provide the analytical methods for quantifying residual solvents. 7M	*I*	*1*
3	A) What are the potential sources of elemental impurities in drug formulations, and how does their presence affect the quality of pharmaceuticals? 8M B) Briefly explain the various classes of elemental impurities and the measures to control them. 7M	*II*	*2*
4	Compare and contrast the stability testing guidelines as per WHO and ICH.	*III*	*4*
5	Describe the accelerated stability testing and shelf-life calculation in the development and approval of pharmaceutical products.	*III*	*3*
6	Describe HPTLC fingerprinting in stability testing of phytopharmaceuticals.	*IV*	*3*
7	Explain the biological assay of A) Heparin 8M B) Oxytocin 7M	*V*	*2*
8	Describe the different methods used for the separation of bound and unbound drug in immunoassays.	*VI*	*2*

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QP Code:42103

Hall Ticket Number

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA (Co-Ed.)(Autonomous)
M.Pharmacy (PCI) SEMESTER I (Main) Examination, APRIL-2026

Course:Pharmaceutical Validation

Time: 3 Hours Max. Marks: 75

Question No.	Question	CO	BL
PART-A	**Answer any 5 questions.**	**5 × 15 = 75**	
1	Define Qualification and Validation. Explain Different Phases of Instrumental Qualification with examples.	*I*	*3*
2	Elaborate on the different Qualification Parameters of UV/Visible Spectrophotometer.	*II*	*4*
3	a) Explain Validation Mechanism for Compressed air and Nitrogen system. (8 Marks) b) Mention application areas for compressed air and Nitrogen. (7 Marks)	*III*	*1*
4	a) Discuss the validation of Analytical Methods as per ICH guidelines. (10 Marks) b) Explain the significance of Computer System Validation. (5 Marks)	*IV*	*2*
5	a) Expand PCT and WIPO. Write a brief note on the same. (8 Marks) b) Explain the significance of IPR in Pharma industry. (7 Marks)	*V*	*2*
6	Define and contrast Factory Acceptance Testing (FAT) and Site Acceptance Testing (SAT) in the context of Equipment Qualification. Discuss the critical components of a FAT/SAT	*I*	*4*
7	(a) What the importance Qualification of Analytical Glassware in a Quality Control Lab. (7 Marks) (b) Explain Qualification of Measuring Cylinder and Analytical Pipette. (8 Marks)	*II*	*3*
8	What Parameters in HVAC are to be examined during Validation.	*III*	*3*

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QP Code:42104

Hall Ticket Number

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA (Co-Ed.)(Autonomous)
M.Pharmacy (PCI) SEMESTER I (Main) Examination, APRIL-2026

Course:Food Analysis

Time: 3 Hours Max. Marks: 75

Question No.	Question	CO	BL
PART-A	**Answer any 5 questions.**	**5 × 15 = 75**	
1	Describe carbohydrate changes during processing and evaluate their analytical significance	*I*	*5*
2	Describe digestion, absorption and metabolism of proteins and their relevance in food analysis	*I*	*3*
3	Classify vitamins and explain analytical methods used for their estimation	*II*	*2*
4	Explain methods for measurement of spoilage in fats and fatty foods	*II*	*4*
5	Differentiate permitted and non-permitted synthetic dyes and detection methods	*III*	*4*
6	Evaluate testing strategy for milk vs cheese sample in complaint case	*IV*	*5*
7	Discuss role of BIS, Agmark, FDA and US-FDA in food safety	*V*	*2*
8	Explain analysis of organochlorine pesticides and compare with organophosphorus compounds	*V*	*5*

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