

St. Pauls College of Pharmacy

Approved by PCI and Affiliated to Osmania University, Hyderabad.
Accredited by NBA-UG Program, NAAC A+ Grade.
Recognition of College under Section 2(f) of the UGC Act 1956,
UGC Autonomous Institution



M.Pharmacy (Common for all) I Sem (PCI) (Main & Backlog) Examination Mar/ Apr 2025

Subject: Modern Pharmaceutical Analytical Techniques

Time: 3 Hours

Max.Marks: 75

PART- A

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

Q.No.	Question	Marks	CO	BL
1	a) Define and derive Beer lamberts law. Add a note on its limitations.	8	1	1
	b) Explain different regions in IR spectroscopy and also discuss about detectors used.	7	1	2
2	a) What are Quenchers? Discuss the different types of Quenching	5	1	2
	b) What is Chemical shift? Explain with examples different factors influencing chemical shift.	10	2	2
3	a) Categorize different peaks observed in MS and explain isotope peaks with examples.	7	3	4
	b) Enlist the different Ionizers used in MS and explain any three in detail.	8	3	2
4	a) Explain the pumps and detectors used in HPLC.	8	4	2
	b) Discuss HPTLC and its applications.	7	4	2
5	a) Write the Principle and working conditions of paper Electrophoresis	8	5	3
	b) Classify the types of crystals and add a note on applications of X ray diffraction	7	5	3
6	a) Enlist the different electrodes used in Potentiometry and explain the construction and working of any one electrode.	8	6	1
	b) Write the Principle of TGA, What factors are responsible for affecting TGA results and write the applications of TGA.	7	6	3
7	a) Explain the sampling techniques in IR spectroscopy	7	1	2
	b) Create MS Spectrum for any two compounds and explain its peaks.	8	3	6
8	a) Add a note on Shielding and deshielding	8	2	1
	b) Enlist and explain the detectors used in Gas chromatography	7	4	1

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M.Pharmacy (Pharmacology) I Semester (PCI) (Main & Backlog) Examination Mar/ Apr 2025

Subject: Advanced Pharmacology I & MPL102T

Time: 3 Hours

Max.Marks: 75

PART- A

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

Q.No.	Question	Marks	CO	BL
1	a) Explain Mechanisms of drug absorption.	10	1	2
	b) Define Volume of distribution and add a note on it's significance.	5	1	1
2	a) Illustrate the pharmacodynamic role of the Ligand gated Ion channels.	8	3	4
	b) Write a note on Nonlinear Kinetics.	7	1	3
3	a) Explain the pharmacology of Anticholinesterases.	8	2	2
	b) Write a note on NANC Transmission.	7	3	3
4	a) Explain the significance of GABA as a CNS neurotransmitter	7	3	2
	b) Discuss the pharmacology of Adrenaline.	8	2	2
5	a) Explain the Pharmacology of Diazepam.	7	6	2
	b) Elaborate the Role of Atypical Antipsychotics in Schizophrenia Treatment.	8	5	3
6	a) Write a note on local anesthetics.	7	5	3
	b) Classify anticoagulants and Discuss about oral anticoagulants.	8	6	3
7	a) Describe pharmacology of HMG CoA reductase Inhibitors.	7	6	2
	b) Explain the pharmacology of CCBs in detail.	8	6	3
8	a) Justify the pathological role of Prostaglandins and Kinins.	8	2	5
	b) Explain the pharmacology of Antihistamines.	7	2	3



M.Pharmacy (Pharmacology) - I Semester (PCI) (Main & Backlog) Examination Mar/ Apr 2025

Subject: Pharmacological and Toxicological Screening Methods-I & MPL103T

Time: 3 Hours

Max.Marks: 75

PART- A

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

Q.No.	Question	Marks	CO	BL
1	Describe the screening methods for the following and explain any two in brief a) anti-psychotics b) Alzheimer's	[7] [8]	4	2
2	list out and explain in detail any two screening methods of the following classes of drugs a) anti-ulcer b) anti-fertility agents	[8] [7]	3	1
3	a) Discuss about anesthesia and euthanasia of experimental animals b) Discuss alternatives to animal screening methods	[8] [7]	1	2
4	Illustrate the <i>invitro</i> screening test for the following activities a) anti-diarrheal drugs b) anti-allergic agents.	[8] [7]	6	03
5	a) Define hypertension. List out the screening methods available to induce hypertension. b) Describe any four models in the screening of anti-hypertensive agents	[5] [10]	3	1 2
6	a) Define Bio-assays, and discuss about their scope, types, advantages and limitations of bioassays. b) Simplify about three point bioassay method and their applications	[9] [6]	5	1 4
7	Explain in detail about the <i>invitro</i> and <i>invivo</i> screening methods for immunosuppressants.	[15]	3	2
8	a) Write a short notes on Immunoassay of digoxin b) Discuss about the extrapolation of in vitro data to preclinical and to humans correlation.	[9] [6]	5	3 2



M.Pharmacy (Pharmacology) I Semester (PCI) (Main & Backlog) Examination Mar/ Apr 2025

Subject: Cellular and Molecular Pharmacology & MPL104T

Time: 3 Hours

Max.Marks: 75

PART- A

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

Q. No.	Question	Marks	CO	BL
1	a) Interpret the structure of the cellular organelle involved in? i) Energy production from the oxidation of glucose substances and the release of ATP. ii) Process involved in the modifications of proteins. b) Illustrate the intrinsic and extrinsic pathways of apoptosis.	5 5 5	1	4
2	a) Differentiate ligand-gated ion channel and a G-protein coupled receptor. b) Illustrate about JAK-STAT signaling pathway.	5 10	2	2
3	a) What is the primary function of a receptor in cell signaling and elaborate the any one cell surface receptor involved in cell signaling. b) Explain about secondary messengers in cell signaling.	10 5	2	2
4	a) Discuss about i) DNA electrophoresis ii) SDS Page b) Write the applications of recombinant DNA technology	10 5	3	3
5	a) Compare and contrast the various types of gene transfer techniques. b) Apply the knowledge to elaborate clinical applications of gene therapy.	10 5	3	4
6	a) Assess the role of genetic variation in health. b) Write the applications of proteomics and metabolomics.	7 8	4	5
7	a) Illustrate different types of immunotherapeutics. b) write a note on biosimilars.	8 7	4,5	4
8	a) Define cell culture. Add a note on various types of cell culture. b) Discuss the principle and applications of cell viability assay.	10 5	6	2

Code. No.M7082413



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M.Pharmacy (Pharmacology) I Semester (PCI) (Supple) Examination July/August 2024

Subject: PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS - I (MPL 103T)

Time: 3 Hours

Max.Marks: 75

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

Q.No.	Question	Marks	CO	BL
1	a) Summarize CCSEA guidelines to conduct experiments on animals?	8	1	1
	b) Give the brief account on euthanasia techniques of experimental animals?	7	1	4
2	a) Illustrate alternatives to animal screening methods?	8	1	4
	b) Summarize screening methods to evaluate the anxiolytics?	7	2	1,5
3	a) Enlist various methods employed in the screening of antipsychotics?	8	3	1,4
	b) Elaborate screening methods to evaluate the test drug for Alzheimer's disease?	7	3	4,5
4	a) Describe the screening methods used to evaluate a compound for COPD?	8	3	2,5
	b) Discuss the various methods employed in the screening of antiulcer agents?	7	3	2,3
5	a) Summarize screening methods to evaluate the aphrodisiacs?	7	3	1,5
	b) Summarize in-vitro and in-vivo techniques for screening of Anticancer agents?	8	4	1,5
6	a) Discuss the various methods employed in the screening of antiarrhythmic agents?	8	4	2,5
	b) Enumerate the screening methods for antidiabetic drugs?	7	4	2,3
7	a) Define immunoassay. Outline principles of immunoassay and illustrate different types of immunoassays?	8	5	1
	b) Elaborate immunoassay of digoxin?	7	5	5
8	a) Give a brief account on evaluation of analgesics?	8	3	4,5
	b) Summarize Limitations of animal experimentation?	7	5	1

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Code. No.M7082412



M.Pharmacy (PHARMACOLOGY) I Semester (PCI) (Supple) Examination Jul/August 2024

Subject: ADVANCED PHARMACOLOGY -1

Time: 3 Hours

Max.Marks: 75

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

Q.No.	Question	Marks	CO	BL
1	a) Discuss G-protein coupled receptors	10	1	2
	b) Explain significance of protein binding	05	1	2
2	a) Explain Neurohumoral transmission in sympathetic nervous system	09	1	2
	b) Outline synthesis and metabolism GABA	06	1	1
3	a) Discuss Pharmacological actions, therapeutic uses and adverse effects of adrenaline	12	4	2
	b) Explain mechanism of action and uses of Succinyl choline	03	3	2
4	a) Classify sedative hypnotics with suitable examples. Explain the mechanism of action and uses of Benzodiazepines	12	6	2
	b) Illustrate the pathophysiology of heart failure	03	2	3
5	a) Classify antihypertensives with suitable examples Explain the pharmacology of β blockers	12	6	2
	b) List the adverse effects NSAIDS	03	3	4
6	a) Discuss Physiological and Pathological role of serotonin	12	2	2
	b) Summarise the functions of opioid autocoids	03	3	2
7	a) Define anti-coagulant and Fibrinolytic. Summarise their uses	06	1	1
	b) Justify in detail the various steps involved in the process of neurotransmission.	09	6	5
8	a) List the drugs used in epilepsy. Discuss the pharmacology of phenytoin	12	6	1
	b) Define haematinic. Summarise the uses of haematinics	03	4	1

Code. No.M7082414



M.Pharmacy (Pharmacology) 1 Semester (PCI) (Supple) Examination Jul/August 2024

Subject & Code: Cellular and Molecular Pharmacology MPL104T

Time: 3 Hours

Max. Marks: 75

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

Q.No.	Question	Marks	CO	BL
1	a) Write about structure and functions of cell and its organelles.	10	2	1
	b) Discuss about necrosis.	5	2	2
2	a) Evaluate in detail about gene mapping.	10	5	5
	b) Examine genome organization in a cell.	5	5	4
3	a) Illustrate the signal transduction mechanisms of ligand gated ion channels with examples.	10	1	3
	b) Illustrate the role of calcium ion as a secondary messenger with examples.	5	1	3
4	Connect the principle with applications of reverse transcription PCR	15	4	4
5	a) Write about JAK-STAT pathway with an example.	8	2	2
	b) Write the principles and applications of western blotting.	7	4	2
6	a) Evaluate genetic variation in drug metabolism with examples.	8	5	5
	b) Write about applications of immunotherapeutics..	7	5	2
7	a) Investigate about cell viability assays.	10	3	5
	b) Connect cryopreservation with cell viability, media and DMSO	5	6	4
8	a) Elaborate procedure for isolation of cells.	8	6	4
	b) Differentiate cell culture medium used in cell culture.	7	6	4

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M.Pharmacy (Pharmacology) I Semester (PCI) (Main) Examination Feb/March 2024

Subject: Cellular and Molecular Pharmacology MPL104T

Max.Marks: 75

Time: 3 Hours

PART- A

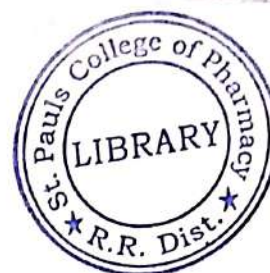
Note: Answer any FIVE questions. All questions carry equal marks.

Q.No.	Question	Marks	CO	BL
1	a) Examine cell cycle check points and cell cycle regulation.	10	5	4
	b) Discuss about autophagy.	5	5	2
2	a) Write in detail about gene expression.	10	2	1
	b) Write in brief intrinsic and extrinsic pathways of apoptosis.	5	2	1
3	a) Write the signal transduction mechanisms of G-Protein coupled receptors.	10	1	2
	b) Explain MAPK signaling pathway.	5	1	2
4	Describe basic principles of recombinant DNA technology with its applications.	15	4	3
5	a) Connect Gene Therapy with its applications.	8	4	4
	b) Examine the principles and applications of ELISA.	7	4	4
6	a) Investigate genetic variation in drug transporters.	9	5	5
	b) Comprehend the applications of Genomics & Proteomics	6	5	2
7	a) Differentiate various types of cell cultures and general procedures for cell culturing.	10	6	4
	b) Describe glucose uptake assay	5	6	2
8	a) Elaborate principles and applications of flow cytometry.	10	3	4
	b) Illustrate the Biosimilars? Explain with examples.	5	3	3



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M.Pharmacy (PHARMACOLOGY) I Semester (PCI) (Main) Examination Feb/March 2024

Subject: ADVANCED PHARMACOLOGY -1 MPL102T

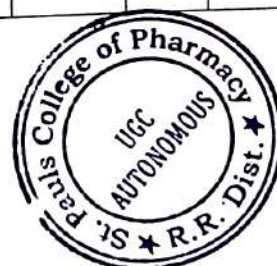
Max.Marks: 75

Time: 3 Hours

PART- A

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

Q.No.	Question	Marks	CO	BL
1	a) Discuss nuclear receptors. b) Justify how a transmission travels through a neuron with suitable examples.	10 05	3 1	2 5
2	a) Explain Neurohumoral transmission in parasympathetic nervous system. b) Outline synthesis and metabolism Dopamine	09 06	1 1	2 4
3	a) Discuss Pharmacological actions, therapeutic uses and adverse effects of acetylcholine. b) Explain mechanism of action and uses of d-tubocuarine.	12 03	4 6	2 2
4	a) Classify antipsychotics with suitable examples. Explain the mechanism of action, uses and adverse effects of Tricyclic antidepressants. b) Illustrate the pathophysiology of parkinsonism.	12 03	6 2	2 3
5	a) Classify antiarrhythmics with suitable examples Explain the basic electrophysiological actions of antiarrhythmics. b) List out the adverse effects of narcotic analgesics.	12 03	6 3	2 4
6	a) Discuss Physiological and Pathological role of histamine b) Summarise the functions of NSAIDS	12 03	2 3	2 2
7	a) Define biotransformation and elimination. b) Illustrate transmission of acetylcholine	06 09	1 6	1 3
8	a) List the drugs used in cardiac ischemia. Discuss the pharmacology of organic nitrates b) Define sympatholytic drugs. Summarise their therapeutic uses	12 03	6 4	1 1



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M.Pharmacy (Pharmacology) I Semester (PCI) (Main) Examination Feb/March 2024

Subject: Pharmacological And Toxicological Screening Methods - I MPL103T

Time: 3 Hours

Max.Marks: 75

PART- A

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

Q.No.	Question	Marks	CO	BL
1	a) Define bioassay, illustrate different types of bioassays add a note on limitations of bioassays?	8	1	1,4
	b) Discuss briefly about production and applications of transgenic animals?	7	1	2,4
2	a) Enlist applications of different species and strains of animals in experimental pharmacology?	8	1	2,4
	b) Discuss about screening methods of CNS depressant drugs?	7	2	2
3	a) Discuss experimental animal models to evaluate the test drug for Parkinsonism?	8	2	2,5
	b) Enlist various methods employed in the screening of Anti-epileptics?	7	3	2,3
4	a) Describe the methods of preclinical evaluation for antiinflammatory activity?	8	3	2,4
	b) Elaborate screening methods to evaluate antiemetic agents?	7	3	2,5
5	a) Summarize screening methods to evaluate the analgesics?	8	3	2,5
	b) Summarize screening methods to evaluate the antiatherosclerotic agents?	7	3	2,5
6	a) Enlist screening methods for antihypertensive agents and add a note on any Three models?	8	4	3,2
	b) Explain any two in vitro & in vivo methods for the screening of hepatoprotective activity?	7	4	3,2
7	a) Explain the in vivo and in vitro screening methods for immunomodulatory activity?	8	5	2,4
	b) Elaborate immunoassay of insulin?	7	5	1
8	a) Give a brief account on evaluation of antidiabetic drugs?	8	4	4
	b) Summarize alternate animal experiments?	7	5	1

