

QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations

(Model Question Paper)

### Modern Analytical and Research Methods

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What is the principle and instrumentation of FTIR. Write a note on sample handling in IR spectroscopy and give its applications.. (10+10=20)
2. Write the principle of NMR spectroscopy. Briefly explain spin-spin coupling and decoupling techniques used. Give applications of NMR spectroscopy. Write the significance of C<sup>13</sup> NMR spectroscopy in the structural elucidation of organic compounds (15+5=20)

**Short Essays:**

**(6x10=60)**

3. Compare GC with HPLC. Briefly discuss on derivatisation methods used in GC (5+5=10)
4. Write on detectors used in HPLC with neat diagram and mention the pharmaceutical applications of HPLC. (10)
5. Discuss the choice of solvents and solvent effects in UV spectroscopy. Factors influencing fluorescence intensity. (5+5=10)
6. Discuss the principle instrumentation and applications of X-ray powder diffraction technique. (10)
7. Give the theoretical principle of mass spectroscopy with the aid of neat diagram of double focussing mass spectrophotometer. Write a brief note on hyphenation of GC & LC with MS. (7+3=10)
8. Give the significance of students T- test, ANOVA, regression analysis and correlation coefficient. (10)

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutical Analysis

(Model Question Paper)

### Paper I - Analytical Techniques and Instrumentation

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What is the principle of fluorimetry. Factors influencing fluorescence intensity. Write a note on applications of fluorimetry. Explain with examples fluorescent immunoassay
2. Define chemical shift. Briefly explain the factors influencing chemical shift values. Write a note on 2D -NMR techniques. Enumerate various applications of NMR spectroscopy.

**Short Essays:**

**(6x10=60)**

3. Derive Beer Lamberts law and what are the limitations of this law. Describe the applications of UV- VIS spectroscopy. (7+3=10)
4. Explain in detail the general fragmentation patterns for the interpretation of organic compounds in mass spectroscopy. Write a brief note on MALDI. (5+5=10)
5. Discuss the principle, instrumentation and applications of HPLC.
6. Discuss the theory, instrumentation and applications of atomic absorption spectroscopy
7. Write a note on factors influencing vibrational frequencies and its applications.
8. Explain the detectors used in GC with neat labelled diagram.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutical Analysis

(Model Question Paper)

### Paper II – Advanced Pharmaceutical Analysis

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

#### Essays:

(2x20=40)

1. Explain about validation and calibration of a HPLC. Describe the quality control tests for tablets and parenterals.
2. Explain the following: (5x4=20)
  - QC of Hair care products.
  - Toxicity testing of cosmetics
  - Particle size analysis
  - Assay of rabies vaccines

#### Short Essays:

(6x10=60)

3. Write the methods for analyzing various carbohydrates in foods. What are the preservatives used in food products. Explain the estimation of any one of them. (5+5=10)
4. Explain the official methods for the determination of the following dosage forms :(2½x4=10)
  - Chloramphenicol tablets.
  - Ascorbic acid tablets
  - Phenobarbitone tablets
  - Digoxin tablets
5. Describe the radioimmunoassay and radiotracer techniques used in pharmaceutical analysis.
6. Explain the principles and procedures for the use of reagent MBTH in pharmaceutical analysis.
7. Write a detailed study of principle and procedure involved in various physico - chemical methods of analysis of sulpha drugs.
8. Enlist the different applications of instrumental methods in the development and quality control of drugs.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutical Analysis

(Model Question Paper)

### Paper III – Quality Assurance

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Write the Concepts and Philosophy of TQM. Write about the Master formula records. Write note on manufacturing documents.
2. Classify packaging materials and tests to ensure the quality of secondary packaging materials. Explain the pharmacopoeial tests for various glass containers.

**Short Essays:**

**(6x10=60)**

3. Write a note on Good Warehousing Practices. How the sanitation and sterile areas are maintained in pharma industry.
4. Write brief note on Organization and personnel in a pharma company.
5. Write a note on concepts and philosophy of GMP.
6. What are the standard operating procedures for cleaning, drying and sterilization.
7. What are the procedures required for evaluation of complaints and recall of distributed finished products.
8. Give an account on quality audits .What are the protocols to be followed in selecting vendors. Add a note on purchase, receipt, storage and release of raw materials.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutical Analysis

(Model Question Paper)

### Paper IV – Clinical Chemistry and Toxicological Analysis

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

#### Essays:

(2x20=40)

1. Explain the determination of the following: (4x5=20)
  - Blood glucose
  - Serum cholesterol
  - SGOT & SGPT
  - Serum alkaline phosphatase
2. Write in detail on DOPE tests and methods for the estimation of anabolic steroids and drugs of abuse from biological samples.

#### Short Essays:

(6x10=60)

3. Write a note on TDM and its application. Estimation of Carbamazepine from blood
4. Write methods for extraction of drugs from biological samples.
5. Enumerate screening procedure –spot tests and the use of TLC, GC and HPTLC in the identification of poisons.
6. Explain the analytical procedures for the estimation of the following:
  - Theophylline
  - Phenytoin
7. Clinical correlation and significance of abnormal values of biochemical constituents
8. Write a note on:
  - Detoxification pathway of Phenobarbitone.
  - Detection of organophosphorus poisoning.
  - Name the antidotes for Heavy metal poisoning
  - Biochemical role of Choline esterase.

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutical Chemistry**

(Model Question Paper)

**Paper I – Drug Design**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What is meant by Analog design. Explain analog approach of drug design. what is Hansch analysis. How it is useful in drug design. Monte Carlo method of conformational analysis.
2. Explain methods of parallel and mixed combinatorial synthesis. Write applications of combinatorial chemistry in drug discovery. Explain different types of molecular graphics in molecular modeling.

**Short Essays:**

**(6x10=60)**

3. Discuss energy components for inter molecular non covalent interactions with suitable examples.
4. Explain applications of recombinant DNA technology in medicinal chemistry.
5. What is topology decision tree analysis. Explain peptidomimetics in drug design.
6. Define antisense technology. How antisense oligonucleotides are used in drug design.
7. Explain in detail about phase I and phase II metabolic reactions.
8. Explain about conventional methods of drug design

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutical Chemistry**

(Model Question Paper)

**Paper II – Advanced Medicinal Chemistry**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Discuss recent advances in cancer therapy. Classify anti viral drugs. Explain the mechanism of action and synthesis of one drug from two different classes.
2. Give classification mechanism of action and SAR of anti hypertensive agents. Drugs used in neuro degenerative disorders.

**Short Essays:**

**(6x10=60)**

3. Explain how radio sensitizers are used in drug therapy
4. Discuss the agents used in management of tuberculosis. Explain the concept of multiple drug resistance in tuberculosis.
5. Discuss the chemistry of  $\beta$  lactam antibiotics. Steroidal anti inflammatory agents
6. Explain about anti hyperlipidemic agents. Give synthesis of any two drugs.
7. What are tranquillizers . Give SAR of phenothiazine derivatives. give an account of thiazide diuretics.
8. Write the important classes of anti malarial agents and give synthesis of amodiaquine and chloroquine

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutical Chemistry**

(Model Question Paper)

**Paper III – Advanced Organic Chemistry**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Explain localized and delocalized bonds with examples. Explain generation fate and biological significance of free radicals.
2. Write notes on (4X5=20)
  - Oppeneaur oxidation
  - Birch reduction
  - Wolf Kishner reduction
  - Meerwin Pondroff's reduction

**Short Essays:**

**(6x10=60)**

3. Discuss various methods of determining organic reaction mechanisms.
4. Discuss in detail the various mechanisms involved in the addition to carbon carbon multiple bonds.
5. Explain in detail about Retro synthetic analysis. Explain hyper conjugation with examples.
6. Discuss the phase transfer catalysis and its applications in reduction reactions.
7. Give a detail account of carbocations and carboanions.
8. Explain the mechanism of aromatic electrophilic substitution reaction. Write the basic theory of photochemical reactions and mention its applications.

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutical Chemistry**

(Model Question Paper)

**Paper IV –Chemistry of Natural Products**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Define alkaloids . Give the methods of isolation of alkaloids. Elucidate the structure of quinine
2. Write the applications of IR, NMR and MASS Spectroscopy in the structural elucidation of natural products. Explain the importance of GLC and HPLC in separation

**Short Essays:**

**(6x10=60)**

3. Explain the chemistry of :
  - Rutin
  - Carotenes
4. Elucidate the structure of Cholesterol
5. Outline the synthesis :
  - Progesterone
  - Reserpine
6. Write a note on role of natural products in new drug development. Explain the constitution of vitamin A.
7. Write in detail the role of recombinant DNA technology. Write about the isolation and characterization of important nutraceuticals.
8. Define terpenoids and elucidate the structure of camphor

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacognosy & Phytochemistry**

(Model Question Paper)

**Paper I –Phytochemistry**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What are the steps involved in drug discovery process from natural products. Explain the terms “ Lead “ , “ Hit “ and “ Activity Guided fractionation”
2. Explain the chemistry, methods of extraction, sources, identification tests and uses of flavanoids

**Short Essays:**

**(6x10=60)**

3. What is the extraction and evaluation technique of artimisin.
4. Give the methods of separation and identification of proteins.
5. What are the applications of docking studies with respect to natural products Z.
6. What are the uses of NMR and Mass Spectroscopic methods in identification of phytochemicals.
7. Explain the significance of alkaloids, fatty acids and volatile oils in chemotaxonomic studies.
8. Phytoestrogens

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacognosy & Phytochemistry**

(Model Question Paper)

**Paper II –Cultivation and Collection of Drugs**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Explain the cultivation methods including soil, fertilizers, irrigation and post harvest treatment of cinchona.
2. What re Good Agricultural Practices as guided by WHO.

**Short Essays:**

**(6x10=60)**

3. Auxins and Gibberellins
4. Effect of Climate and soil moisture on the yield of phytoconstituents
5. Germplasm conservation
6. Macro and micronutrients needed for cultivation of medicinal plants
7. Biopesticides
8. Different types of soil

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacognosy & Phytochemistry**

(Model Question Paper)

**Paper III –Applied Pharmacognosy**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What are the problems encountered in the development and evaluation of herbal formulations.
2. What are the standards for asavas, arishtas, churnas and lehyas. Write about any 5 medicinal plants used in Ayurveda.

**Short Essays:**

**(6x10=60)**

3. In vitro screening for anti-inflammatory activity
4. Cardioactive toxicity of herbal drugs
5. DNA Fingerprinting
6. Methods of preparation and uses of phytosomes
7. Biomarkers in HPTLC standardization of herbals
8. Determination of aflatoxins in samples of crude drugs

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacognosy & Phytochemistry**

(Model Question Paper)

**Paper IV –Medicinal Plant Biotechnology**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What are the different types of plant tissue culture methods
2. What are the genetic factors affecting the production of phytochemicals. Explain the terms gene mutation and gene transfer.

**Short Essays:**

**(6x10=60)**

3. Role of elicitors and precursors in the production of phytochemicals
4. Biotransformation
5. Role of transgenic plants in production of medicines
6. DNA Recombinant technology
7. Bioreactors
8. Uses of PCR in gene mapping

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutics

(Model Question Paper)

### Paper I – Formulation Technology

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

#### Essays:

(2x20=40)

1. Explain the design and formulation of sustained release tablets. Write the film coating process and the defects of film coated tablets.
2. Explain the Polymers used in controlled drug delivery. What are the various techniques used for microencapsulation. Explain phase separation Coacervation technique.

#### Short Essays:

(6x10=60)

3. Explain Oral Osmotic pumps and Floating drug delivery systems
4. Explain the various mechanism of drug distribution in pulmonary drug delivery. Explain the design and development of inhalation drug delivery systems
5. Write an essay on the delivery of pharmaceutical peptides and proteins. Explain the problems in the delivery of peptides and proteins in conventional form.
6. Give a brief account on the following: Applications of nanoparticles and Concepts of physical drug targeting.
7. Explain any two types of parenteral controlled drug delivery system. Explain the factors that affect the release of drug from its delivery system
8. Explain the design and various types of transdermal drug delivery systems. Explain the evaluation of transdermal delivery system.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmaceutics

(Model Question Paper)

### Paper II – Biopharmaceutics and Pharmacokinetics

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Define the terms bioavailability and bioequivalence. Discuss selection criteria of volunteers in bioavailability and bioequivalence studies. Why the bioavailability studies are carried out in healthy subjects. Explain any one method of determination of bioavailability
2. Explain flip –flop model. What are the various methods for estimation of absorption rate constant. Explain the method of residuals.

**Short Essays:**

**(6x10=60)**

3. What is meant by first –pass metabolism. Explain its clinical significance. Explain the Biopharmaceutics of intramuscular injection.
4. Discuss the methods of dose adjustment in renal impairment. Explain the need of short term i.v infusions.
5. Explain Wagner –Nelson method. Write about its merits and demerits.
6. Explain pharmacokinetic model and their objectives. Discuss assumptions of ‘one compartment model’.
7. What is capacity limited kinetics. Explain the causes of non-linearity. Discuss the application of Michaelis-Menton equation in non-linearity.
8. Discuss various biopharmaceutical factors affecting drug absorption from an injectable. Explain sigma –minus method and its limitation.

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutics**

(Model Question Paper)

**Paper III – Industrial Microbiology and Biotechnology**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Describe the production, harvest and recovery of lactic acid by fermentation
2. Give examples of toxoids . Explain the production and standardization of Diphtheria toxoid.

**Short Essays:**

**(6x10=60)**

3. What are gene libraries. Give examples of pharmaceuticals produced by recombinant DNA technology
4. What are monoclonal antibodies. Explain the term 'Cloning'
5. Give examples of viral vaccines. Explain the production of a viral vaccine by tissue culture method
6. Define the term fermentation . Describe the production of ethanol by fermentation
7. How aseptic processes are validated. Explain how the efficiency of air filters for sterilization is tested.
8. What is an allergy. List out foods, which are recognized to produce allergic reactions.

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmaceutics**

(Model Question Paper)

**Paper IV – Industrial Pharmacy**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Write a note on preformulation studies with special reference to polymorphism and solubility.. Write a note on stability of drugs in preformulation study.
2. What is called as CGMP. Explain Good manufacturing practices (GMP) in the quality control of parenteral products

**Short Essays:**

**(6x10=60)**

3. Write notes on:. Optimization parameters, Simplex method
4. Explain the various types of industrial hazards. Explain industrial effluent testing procedures.
5. Write in detail about the elements of cost. Write in detail about the Revocation of patents.
6. Write notes on: cost control, ISO 9000 series
7. Explain the factors to be considered for pilot plant scale up. Explain the requirements of New Drug Application (NDA) .
8. Explain the following terms: Inventory control, Materials management.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmacology

(Model Question Paper)

### Paper I–Pharmacological Screening Methods & Clinical Evaluation

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

#### Essays:

(2x20=40)

1. Discuss the pharmacological models employed in the screening of new drugs belonging to the following categories ( In-vivo & In- vitro models) (10+10=20)
  - Nootropics
  - Anxiolytics
2. Discuss in detail about the cell culture & cell line techniques about the (10+6+4=20)
  - Types, propagation & preservation of cultures
  - Design, equipments for cell culture laboratory
  - Application of cell cultures

#### Short Essays:

(6x10=60)

3. Briefly explain the CPCSEA guidelines for laboratory animal facility.
4. Explain the principle, methods and applications of ELISA
5. Discuss the different models of anti-inflammatory agents screening procedure.
6. Explain the applicability of – Analysis of Variance (ANOVA) with reference to biomedical research.
7. Write down the procedure involved in the following
  - Streptozotocin induced hyperglycemia
  - NSAIDs induced ulcer model
8. Explain the drug discovery approaches in (5+5=10)
  - High throughput screening
  - Combinatorial chemistry

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmacology

(Model Question Paper)

### Paper II–Biochemical & Molecular Pharmacology

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:** (2x20=40)

1. Explain the following in molecular approach (10+10=20)
  - Acute & Chronic inflammation
  - Apoptosis
2. Discuss in detail of the following: (10+0=20)
  - Replication & transcription of DNA & RNA
  - Gene therapy of genetic disorders

**Short Essays:** (6x10=60)

3. Explain the biological functions & pharmacological implications of Nitric oxide(NO)
4. Write short notes on the following : (3+3+4=10)
  - Neuropeptide Y (NPY)
  - Multidrug resistance (mtr) proteins
  - Tissue Necrosis factor ( TNF )
5. Write notes on the following techniques. (4+3+3=10)
  - Polymerase chain reaction (PCR)
  - Southern blotting
  - Northern blotting
6. What do you mean by gene cloning. Write short notes on transgenic animals & their application. (3+5+2=10)
7. Write down the biochemical pathway of reactive oxygen species & anti- oxidant defense mechanisms. (5+5=10)
8. Explain the role of pharmacogenetics with respect to drug action. What do you mean by chronopharmacology. (8+2=10)

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmacology

(Model Question Paper)

### Paper III – Recent Advances in Pharmacology

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What do you mean by Ion channel Receptors. Classify it . Explain the transduction pathway of Na<sup>+</sup>, Ca<sup>2+</sup>, Cl<sup>-</sup> Ion channel with neat diagram. Write down their therapeutic importance.
2. Discuss in detail about: (10+7+3=20)
  - The cell mediated & humoral mediated immunity with flow diagram
  - Recent approaches in drug discovery of AIDS
  - Immuno modulators of Indigenous origin

**Short Essays:**

**(6x10=60)**

3. Write short notes on the following target sites: (2½x4=10)
  - Rho Kinase
  - Caspase
  - PPAR
  - Phosphodiesterase
4. Write down the biology of stem cells and their potential in various disorders. (5+5=10)
5. Write in detail about the mechanism of anti-microbial resistance. What do you mean by MDR-TB
6. Write short notes on the following: (5+5=10)
  - Forces involved in D-R binding
  - Purinoceptors
7. Write down the methods of gene transfer technologies (Viral & non Viral). What are disease target for gene therapy. (7+3=10)
8. Write short notes on the following:
  - Nutraceuticals
  - Anti sense agents

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacology**

(Model Question Paper)

**Paper IV – Clinical Pharmacology & Toxicology**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Discuss in detail about clinical research in the following: (10+10=20)
  - Design and ethical guidelines in clinical research
  - Phases of clinical research as per ICMR guidelines.
2. Discuss the types , methods & importance of the: (10+10=20)
  - Pharmacoeconomics
  - Rational drug use

**Short Essays:**

**(6x10=60)**

3. Discuss the Pathophysiology and pharmacotherapy of diabetes.
4. Write short notes on the following: (5+5=10)
  - Helsinki declaration
  - Stakeholders in clinical research
5. What do you mean by Pharmacovigilance. Write down the protocol followed in it and mention the importance of Pharmacovigilance in clinical practice. (2+6+2=10)
6. Write short notes on the following poison management : (5+5=10)
  - Organophosphorous compounds
  - Methanol
7. Describe the pathophysiology and pharmacotherapy of Rheumatoid arthritis .
8. Discuss the importance of dose adjustments in renal & hepatic failure.

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmacy Practice

(Model Question Paper)

### Paper I – Clinical Pharmacy Practice

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. What are various markers of ischemic heart injury. How their levels change during ischemic injury. What factors are considered while analysing the patient data for case presentation. What are beneficial drug-drug interactions. Give atleast two examples with mechanism and benefits offered
2. What is Drug Use Evaluation. How is it carried out. Develop a protocol for carrying out a DUE for antimicrobial use in a tertiary care hospital.

**Short Essays:**

**(6x10=60)**

3. Discuss the setting up of Drug information centre
4. Discuss the importance of medication history in therapeutic management of patients.
5. What are the types of medication errors, explain with suitable examples from each category
6. What is Non-compliance. Explain the causes, outcome and suggestions for improving the compliance
7. What are drug induced diseases. Explain their mechanism and management
8. What are the various methods of pharmacoeconomic evaluations, explain cost benefit analysis

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacy Practice**

(Model Question Paper)

**Paper II – Pathophysiology and Pharmacotherapeutics**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Explain the etiology and pathophysiology of Diabetes mellitus . Discuss the diabetes related complications .Discuss the therapeutic management options of diabetes mellitus .
2. Describe the various etiological factors responsible for acute renal failure. How to differentiate acute renal failure and chronic renal failure diagnostically. Discuss the supportive care and pharmacotherapeutic management of Acute renal failure.

**Short Essays:**

**(6x10=60)**

3. Write the pharmacotherapeutic management of epilepsy in adult
4. Chart out and explain an algorithm for therapeutic management of rheumatoid arthritis
5. Discuss Cell cycle and the principles of cancer chemotherapy
6. Explain pain pathway. Discuss management of various types of pain using WHO pain ladder.
7. Present pathophysiology of Tuberculosis .Explain the latest antitubercular regimen for Tuberculosis
8. Write the JNC-7 classification of hypertension and explain with drug of choice in each stage

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QP Code:

Reg. No.:.....

## M Pharm Degree (Part I) Examinations – Pharmacy Practice

(Model Question Paper)

### Paper III – Clinical Toxicology and Pharmacokinetics

Time: 3 hrs

Maximum marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Describe the protocol, procedure and statistical interpretation of bioequivalence studies
2. “The Investigator’s Brochure is important and constantly evolving document.” Justify this statement. What is role and responsibilities of principal investigator as per ICH GCP guidelines. Describe briefly the content and format of NDA.

**Short Essays:**

**(6x10=60)**

3. Discuss the importance of therapeutic drug monitoring with particular reference to anticonvulsants.
4. What are the signs and symptoms observed in organophosphorus poisoning . Write its management.
5. Describe design, conduct and outcome of Phase I and Phase II of clinical trials
6. What in Institution Ethics Committee (IEC). Give its composition and responsibilities.
7. Discuss the principles of sampling in clinical trials. Differentiate parametric and non-parametric tests.
8. What are the main factors that influence drug dosing in renal failure. Explain one method for adjusting drug dose in renal disease.

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QP Code:

Reg. No.:.....

**M Pharm Degree (Part I) Examinations – Pharmacy Practice**

(Model Question Paper)

**Paper IV – Hospital and Community Pharmacy & Drug Store Management**

**Time: 3 hrs**

**Maximum marks: 100**

- *Answer all questions*
- *Draw diagrams wherever necessary*

**Essays:**

**(2x20=40)**

1. Discuss the term inventory control from the point of view of a hospital pharmacist. What are the various methods of drug distribution used in modern hospital pharmacies.
2. What is the role of Community Pharmacy practice in family planning and first aid. Write a note on code of ethics for community pharmacists. What are the barriers a community pharmacist encounters during patient counselling.

**Short Essays:**

**(6x10=60)**

3. Write notes on drug information sources Explain the term Polypharmacy and what are its consequences
4. What are OTC drugs, write patient counselling notes for any one OTC drug. IV additive service and role of pharmacist
5. Discuss the feasibility of manufacturing Large volume parenterals in district head quarter hospital
6. Explain the role of computers in hospital and clinical pharmacy
7. Write a note on organization of Hospital pharmacy. Discuss procurement procedures for various materials used in Hospital.
8. Define CSSD. Discuss the typical plan of central supply for medium sized hospital.

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