

MODEL QUESTION PAPER

II SEMESTER M. PHARM DEGREE EXAMINATION

M.PHARM (PHARMACEUTICAL CHEMISTRY)

Paper I: ADVANCED SPECTRAL ANALYSIS (MPC 201 T)

Time: 3 hrs

Answer all questions

Max marks: 75

Draw diagrams wherever necessary

ESSAYS

(3x10=30)

1. Explain the principle, instrumentation and applications of Raman Spectroscopy.
2. Explain the principle and applications of supercritical fluid chromatography.
3. Explain the principle involved in DSC and TGA.

SHORT NOTES

(9x5=45)

4. Write a note on ELIZA.
5. Radio immuno assay of insulin.
6. Principle involved in GC-MS.
7. Explain NOESY and COSY.
8. Write a note on flash fluid chromatography.
9. Explain the principle involved in HPTLC.
10. Explain fragmentation rules using two examples.
11. Interpretation of any two organic compounds using Mass spectroscopy.
12. Write notes on ID NMR and 2D NMR.

MODEL QUESTION PAPER

II SEMESTER M. PHARM DEGREE EXAMINATION M.PHARM (PHARMACEUTICAL CHEMISTRY) Paper II: ADVANCED ORGANIC CHEMISTRY-II (MPC 202T)

Answer all questions

ESSAYS

(3x10=30)

1. Discuss in detail about resins and linkers for the synthesis of peptides using BOC and Fmoc Chemistry.
2. Give a brief account on green chemistry. Add a note on synthetic applications of microwave and ultra sound assisted organic reactions.
3. Discuss about phase transfer catalysis and their applications in organic reactions.

SHORT NOTES

(9x5=45)

4. Ziegler–Natta catalysts soluble in the reaction medium.
5. Asymmetric synthesis using chiral auxiliary approach.
6. Sigma tropic hydrogen and alkyl shifts and their applications.
7. Cahn-Ingold-Prelog system of R/S nomenclature.
8. Possible side reactions of serine and tryptophan residues in peptide synthesis.
9. Synthetic applications of continuous flow reactors.
10. Photo-oxidation reactions of aromatic compounds.
11. Immobilization techniques used for homogenous catalysts.
12. Applications of stereo selective synthesis.

MODEL QUESTION PAPER

II SEMESTER M. PHARM DEGREE EXAMINATION

M.PHARM (PHARMACEUTICAL CHEMISTRY)

Paper III: COMPUTER AIDED DRUG DESIGN (MPC 203T)

Time: 3 hrs

Answer all questions

Max marks: 75

Draw diagrams wherever necessary

ESSAYS

(3x10=30)

1. Give an account on QSAR studies and their implications.
2. Explain different energy minimization methods and its applications.
3. Give a detailed account on de novo drug design.

SHORT NOTES

(9x5=45)

4. Taft steric parameter.
5. Force field used in molecular mechanics.
6. Differentiate between rigid docking and flexible docking.
7. The role of ADMET parameters in designing new molecules.
8. Pharmacophore mapping.
9. Homology modeling.
10. Hansch analysis.
11. Applications of quantum mechanics in drug design.
12. Structure based in-silico virtual screening protocols.

MODEL QUESTION PAPER

II SEMESTER M PHARM DEGREE EXAMINATION

M PHARM (PHARMACEUTICAL CHEMISTRY)

Paper IV: PHARMACEUTICAL PROCESS CHEMISTRY (MPC 204 T)

Time: 3 hrs

Answer all questions

Max marks: 75

ESSAYS

(3x10=30)

1. Explain in detail about the catalytic hydrogenation, case study on industrial reduction process.
2. Explain the types of evaporators and factors affecting evaporators.
3. Explain the reaction progress kinetic analysis including the characteristics of cost effective routes and reagent selection in detail.

SHORT NOTES

(9x5=45)

4. Give notes on the impurities in API, types and their sources including genotoxic impurities.
5. Theory of filtration and explain centrifugal filtration
6. Write notes on MSDS.
7. Production of vitamin B2 and vitamin B12.
8. Explain shortly on non metallic oxidizing agents
9. Give notes on Azeotropic distillation
10. Counter current extraction
11. Types of fire and fire extinguishers
12. Factors affecting crystallization, principle and method of preparation

MODEL QUESTION PAPER
II SEMESTER M. PHARM DEGREE EXAMINATION
M. Pharm (Pharmacy Practice)
PAPER I- PRINCIPLES OF QUALITY USE OF MEDICINES (MPP 201T)

Time: 3 hrs

Answer all questions

Max marks: 75

ESSAYS

(3x10=30)

1. Define quality use of medicine , explain in detail developing and implementing initiatives to achieve quality use of medicine
2. Define medication errors; categorize the various types of medication errors. how the pharmacist detect and prevent medication errors.
3. Explain pharmacovigilance ,what are the predisposing factors of ADR , how the ADR are detected and reported .

SHORT NOTES

(9x5=45)

4. Quality use of medicine in Ambulatory care setting.
5. Concept of evidence based medicine
6. Role of pharmacist in rational drug use
7. Regulatory aspects of quality use of medicines in India
8. Quality use of medicines in E-health
9. National essential drug policy
10. Quality use of medicines in pregnancy and lactation
11. Professional responsibility of pharmacist in quality use of medicines
12. Regulatory aspects of OTC medicines in India

MODEL QUESTION PAPER
II SEMESTER M. PHARM DEGREE EXAMINATION
M. Pharm (Pharmacy Practice)

PAPER II- PHARMACOTHERAPEUTICS II (MPP 202T)

Time: 3 hrs

Answer all questions

Max marks: 75

ESSAYS

(3x10=30)

1. What is epilepsy , classify different types of epilepsy based on clinical manifestation. Discuss the pharmacotherapy management of major epilepsy.
2. Explain the role of atypical antipsychotic drugs in schizophrenia mention its advantages and disadvantages. Explain drug induced psychiatric disorders .
3. Explain the general principles of cancer chemotherapy

Short notes

(9x5= 45)

4. HAART therapy in HIV
5. Pharmacotherapy of breast cancer
6. Clinical management of hematological malignancy
7. Hormone replacement therapy
8. Pain pathway and its management
9. New treatment guidelines for Tuberculosis in India
10. General guidelines for the rational use of antibiotics in surgical prophylaxis
11. Drug induced renal diseases
12. clinical management of dengue fever

MODEL QUESTION PAPER
II SEMESTER M. PHARM DEGREE EXAMINATION
M. Pharm (Pharmacy Practice)
Paper – III – Clinical Pharmacokinetics and Therapeutic Drug Monitoring
(MPP203T)

Time : 03 Hrs

Total marks : 75

Answer all questions

Essays

(3X10 = 30)

1. Explain the term Therapeutic Drug Monitoring? Write the different indications and applications of TDM?
2. Discuss in detail about the drug dosing in the elderly and paediatrics?
3. Discuss the methods of estimation and different determinants of Bioavailability?

Short notes

(9X5 = 45)

4. Bayesian Theory?
5. Inhibition of biliary excretion?
6. Loading dose?
7. Non – renal clearance?
8. Covariate screening methods?
9. Cytochrome P450?
10. TDM of Lithium carbonate?
11. Pharmacometric software?
12. Nomograms in designing dosage regimen?

MODEL QUESTION PAPER
II SEMESTER M. PHARM DEGREE EXAMINATION
M. Pharm (Pharmacy Practice)

Paper – IV – Pharmacoepidemiology & Pharmacoeconomics (MPP204T)

Time : 03 Hrs

Total marks : 75

Answer all questions

Essays

(3X10 = 30)

1. Discuss the different Pharmacoepidemiological methods?
2. Discuss the various pharmacoeconomic models in Current Pharmacy Practice?
3. Explain in detail about the steps involved in the measurement of HRQOL?

Short notes

(9X5 = 45)

4. Measurements of risk?
5. Estimation of different costs?
6. Quality adjusted life years?
7. Markov Modeling?
8. Applications of Pharmacoeconomics?
9. Odds ratio?
10. Medication adherence measurements?
11. Post marketing surveillance?
12. Scope and Need of Pharmacoepidemiology in Pharmacy Practice?

Model Question Paper
Second Semester M.Pharm Degree Examinations
M.Pharm (Pharmaceutical Analysis)
Paper I: Advanced Instrumental Analysis (MPA201T)

Time: 3 Hours

Total Marks: 75

Answer all Questions

Essays

(3x10=30)

1. Parameters affecting peak separation in HPLC, explain resolution
2. Explain chemical shift, factors influencing chemical shift, expand COSY techniques.
3. Explain various ionization techniques used in mass spectroscopy.

Short Notes

(9x5=45)

4. Principle and Pharmaceutical application of supercritical fluid chromatography
5. Principles of ¹³C NMR
6. MS/MS system
7. Interpretation and application of NMR spectroscopy
8. Enantiomeric separations in HPLC
9. Ion pair chromatography
10. 1-D & 2-D NMR
11. Mass analysers
12. Metastable ions and isotopic peaks.

MODEL QUESTION PAPER

SECOND SEMESTER M.PHARM DEGREE EXAMINATIONS

M.PHARM- PHARMACEUTICAL ANALYSIS

PAPER-II –MODERN BIOANALYTICAL TECHNIQUES (MPA202T)

Time: 3hrs

Total Marks: 75

Answer all Questions

Essays

(3x10=30)

1. Explain in detail about solid phase extraction techniques and its applications.
2. Define bioavailability and explain various method for assessing bioavailability. Also write about clinical significance of bioequivalence studies.
3. USFDA guidelines for Bioanalytical method validation.

Short Notes

(5x9=45)

4. Principle and applications of flow cytometry.
5. Role of LC-MS in bioactivity screening and proteomics.
6. Principle and procedure involved in protein precipitation techniques.
7. Write about various factors affecting drug bioavailability.
8. Explain about importance and applications of toxicokinetic studies.
9. Write in detail about cryopreservation.
10. Invitro-assay of drug metabolizing enzymes.
11. Principle and applications of cell viability assays.
12. Explain cytochrome P₄₅₀ based drug interactions.

MODEL QUESTION PAPER

Second Semester M-Pharm Degree Examination

(Pharmaceutical Analysis)

Paper III-Quality Control and Quality Assurance (MPA203T)

Time: 3 hrs

Maximum marks: 75

Answer all Questions

Essays:

(10 x 3=30)

1. Explain the concept of Quality control and Quality assurance. Explain ICH Guidelines with special emphasis on Q- series guidelines.
2. Describe in detail cGMP Guidelines according to schedule M, USFDA, WHO and EMEA covering.
3. Explain in detail about documentation in Pharmaceutical Industry.

Short notes

(5 x 9=45)

4. In-process quality control.
5. Master formula record.
6. Sanitation of manufacturing premises.
7. Quality control tests for containers.
8. Good ware housing practices.
9. Expiry date calculation.
10. Quality control of surgical products.
11. Standard operating procedures.
12. Aseptic process control.

Model Question Paper
Second Semester M.Pharm Degree Examinations
M.Pharm (Pharmaceutical Analysis)
Paper IV: Herbal and Cosmetic Analysis (MPA204T)

Time: 3 Hours

Total Marks: 75

- *Answer all Questions*

Essays

(3x10=30)

1. Explain Regulatory requirements for setting herbal drug industry?
2. Discuss about Indian and International patent laws applicable to herbal drugs and natural products.
3. Indian standard specification laid down on baby care products, Hair products and skin creams by the Bureau Indian Standards.

Short Notes

(9x5=45)

4. Bio drug – drug and bio drug-food interaction with suitable examples
5. WHO guidelines in quality assessment of herbal drugs.
6. Adulterant screening using modern analytical instruments.
7. WHO guidelines for safety monitoring of natural medicines.
8. Stability testing of natural products.
9. Quality of raw materials used in cosmetic manufacture as per BIS.
10. DNA finger printing technique in identification of natural products.
11. Types of adulteration / substitution of herbal drugs.
12. Study of monographs of herbal drugs.

MODEL QUESTION PAPER

Second Semester M Pharm Degree Examination July -2018

M.Pharm (Pharmacology)

Paper I- Advanced Pharmacology II (MPL201T)

Time: 3Hours

Total Marks: 75*

Answer all Questions

Essays

(3X10=30)

1. Discuss the molecular and cellular mechanism of antifungal and antiviral antibiotics
2. Discuss the pathophysiology of COPD
3. Enumerate clinically used immunosuppressants, mention their mechanism, adverse effect and contraindications

Short Notes

(9X5=45)

4. What are free radicals? Discuss their role in etiopathology of cancer
5. Explain the mechanism of action, therapeutic uses and adverse effect of thalidomide
6. Discuss the current approaches for management of Alzheimer's disease
7. Explain the different analogue insulin preparation
8. Explain the different cellular and biochemical mediators of inflammation
9. Discuss the mechanism of different drugs used for chemotherapy induced vomiting
10. Describe the drugs used for the treatment of H-pylori infection and irritable bowel syndrome
11. Application of chronotherapy in cardiovascular disease
12. Describe the role of vitamin D for the regulation of calcium level of blood

MODEL QUESTION PAPER

M.PHARM SECOND SEMESTER EXAMINATION

M.Pharm (Pharmacology)

PAPER II- PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS –II
(MPL202T)

Time 3hrs

Max marks –75

Answer all the questions

Essays

(10x3=30)

1. Discuss the different phases of Toxicokinetic studies? How does it differ from the usual Pharmacokinetic studies. Mention the applications of TK studies?
2. What is meant by OECD test guidelines? Mention the different sections of OECD test guidelines. Discuss in detail the different guidelines for acute oral toxicity studies.
3. Discuss in detail the different aspects of carcinogenicity studies in laboratory animals

Short Notes

(5x9=45)

4. Discuss the methods for testing of a new chemical for its teratogenic potential
5. Write the principal and procedure for bacterial reverse mutation test. Specify the OECD guideline for it
6. Explain the different alternative methods for assessing the toxicity of a compound instead of the routine animal experiments .
7. Outline the testing and evaluation strategy for dermal irritation by a chemical as per OECD guidelines.
8. Discuss in detail the cellular mechanisms for the development of toxicity in living tissues.
9. What is meant by a “test item” for a GLP study. Discuss the criteria for its characterization.
10. What is IND? Enumerate the different nonclinical studies to be carried out before IND filing.
11. What is HERG assay. Discuss its importance in drug development
12. Discuss the different parameters evaluated in routine male reproductive toxicity studies.

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations
M.Pharm (Pharmacology)

PAPER III- PRINCIPLES OF DRUG DISCOVERY (MPL 203T)

Time: 3 Hours

Total Marks: 75

Answer all the questions

Essays

(3X10=30 marks)

1. Explain protein structure and discuss the experimental methods employed to decipher domains, motifs, and folds in protein structure.
2. Discuss the current approaches employed in the drug discovery process emphasizing target identification, target validation, lead identification and lead optimization.
3. Enumerate the role of drug design in the drug discovery process. Compare and contrast traditional and rational drug design approaches. Add a note on virtual screening techniques.

Short notes

(9X5=45 marks)

4. 3D-QSAR approaches
5. Prodrug design
6. Quantitative analysis of Structure Activity Relationship
7. Molecular docking
8. Protein microarrays
9. Zinc finger proteins
10. Role of transgenic animals in target validation
11. Economics of drug discovery
12. siRNAs

**MODEL QUESTION PAPER
M PHARM (PHARMACOLOGY)**

SECOND SEMESTER M PHARM DEGREE EXAMINATION

**PAPER IV-CLINICAL RESEARCH AND PHARMACOVIGILANCE
(MPL 204T)**

Time :3 hours

Maximum Marks :75

Answer all questions

Essays

(10x3=30)

1. What are the different Clinical Trial Designs in Clinical Research? Explain briefly with illustrations any one of the designs.
2. Explain the Structure, Functions and Principles of ICH-GCP.
3. Explain in detail the Pharmacovigilance Programme in India

Short Notes

(5x9=45)

4. Importance and contents of Investigator Brochure.
5. Procedure for filing an IND application as per Schedule Y.
6. Randomisation in Clinical Trials.
7. Ethics Committee, its constitution and role of each member.
8. Contract Research Organisations.
9. Spontaneous Reporting of ADR with suitable examples.
10. Essential Documents in Clinical Trials.
11. Roles and Responsibilities of a Clinical Research Coordinator.
12. Guide lines for reporting ADR.

MODEL QUESTION PAPER

SECOND SEMESTER M.PHARM DEGREE EXAMINATION

M.Pharm (Pharmaceutics)

Paper I: MOLECULAR PHARMACEUTICS (Nano Technology and Targeted Drug Delivery System) (MPH 201T)

TIME: 3 HOURS

TOTAL MARKS: 75

Answer all questions.

Draw diagrams wherever necessary.

Essays

(3x10=30)

1. Write about the role and importance of nanoparticles in targeted drug delivery system.
2. Explain the importance and development of magnetic microspheres in targeted drug delivery system.
3. Discuss the role of propellants in inhalation aerosols. Add a note on quality assurance of aerosol formulation.

Short Notes

(9x5=45)

4. Write a note on monoclonal antibodies in drug targeting.
5. Write briefly about gene therapy.
6. Write a note on Recombinant DNA technology.
7. Explain with examples about the advances in pulsatile drug delivery system.
8. Write a note on Active and Passive targeting.
9. Write a note on pharomasomes.
10. What are liposomes? Explain about its application in drug delivery system.
11. Write a note on microemulsions.
12. Explain the terms Enhanced Permeation and Retention effect.

MODEL QUESTION PAPER

Second Semester M Pharm Degree examinations

M.Pharm (Pharmaceutics)

Paper II : ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS
(MPH202T)

Time :3 hr

Max marks : 75

Answer all questions

Essay

(3 x10=30)

1. Explain the role of various dosage form in the gastrointestinal absorption of drugs.
2. Discuss the design and evaluation of bioequivalence studies
3. Describe in detail about nonlinear pharmacokinetics

Short notes

(9X5=45)

4. Rate limiting steps in drug absorption
5. Invitro-invivo correlation studies
6. Multi compartment models in pharmacokinetics
7. Drug Permeability studies
8. Compendial methods of dissolution testing
9. Cytochrome P-450 based drug interactions
10. Biopharmaceutical factors affecting drug absorption
11. Drug product performance
12. Pharmacokinetics of biotechnology drugs

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations

M.Pharm (Pharmaceutics)

Paper III – Computer Aided Drug Development (MPH 203T)

Essays

(3X10=30)

1. Explain in detail about the Computer-aided formulation development of Microemulsion Drug carriers.
2. Describe the role of computers in Clinical data collection & management.
3. Explain in detail about Automation in Pharmaceutical industry.

Short Notes

(9X5=45)

4. Statistical modelling.
5. Quality by Design (QbD).
6. Drug absorption models.
7. Role of computers in Optimisation.
8. Ethics of computing in Pharmaceutical research.
9. *In vitro* – *In vivo* correlation (IVIVC).
10. Computer simulation of animal models.
11. Computers in market analysis.
12. Application of Robotics in Pharmaceutical

MODEL QUESTION PAPER

Second Semester M Pharm Degree examinations

M.Pharm (Pharmaceutics)

COSMETICS AND COSMECEUTICALS

(MPH204T)

Time :3 hr

Max marks : 75

Answer all questions

Essay

(3 x10=30)

1. Define the term Cosmetic product and explain in detail regulatory provisions for the manufacture of cosmetics in India.
2. Discuss about the different building blocks used in the formulation of cosmetic creams.
3. Classify Perfumes. Describe the various ingredients used for production of perfumes.

Short notes

(9X5=45)

4. Labelling requirement for cosmetics
5. Guidelines for formulation of herbal cosmetics
6. Structure of hair and hair growth cycle
7. Common problems of oral cavity
8. Merits and demerits of antimicrobial agents used as preservatives in cosmetics
9. Classification and regulatory aspects of sunscreen products
10. Challenges in the formulation of herbal cosmetics
11. Cosmetic products for eyes
12. Regulatory provisions for the import of cosmetics

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations

Branch: Pharmacognosy

Paper I: Medicinal Plant Biotechnology (MPG 201T)

Duration: 3 Hours

Max. Marks: 75

Answer all questions

Essays

(3x10=30 Marks)

1. What are the techniques of immobilization of plant cells and give their applications in production of secondary metabolites?
2. What are the factors affecting gene expression and how these can be used in the production of desirable characters in plants?
3. How are transgenic plants produced? What are their advantages?

Short Notes

(9x5=45 Marks)

4. Genetic code
5. What is protoplast fusion as applicable to tissue culture?
6. Advantages of plant cell cloning
7. Write briefly on production of ergot alkaloids
8. Write about PCR analysis for identification of plants.
9. What are the surface sterilization methods involved in tissue culture?
10. What are precursors and what are their applications in tissue culture?
11. Write a note on any two enzymes of Pharmaceutical interest.
12. Give a brief account of bio reactors for production of secondary metabolites.

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations

Branch: Pharmacognosy

Paper II: Advanced Pharmacognosy II (MPG 202T)

Duration: 3 Hours

Max. Marks: 75

Answer all questions

Essays

(3x10=30 Marks)

1. What are the methods of adulteration of crude drugs? Write a note on sampling procedures
2. What are the screening methods for antioxidant and antiulcer drugs?
3. What are the Pharmacodynamic methods for validation of herbal therapies?

Short Notes

(9x5=45 Marks)

4. Analysis of *Coleus forskolii*
5. In vivo methods for screening of anticancer activity
6. How are toxicity studies on mice performed as per OECD guidelines?
7. What is reverse Pharmacology?
8. What are the methods of detection of heavy metals in crude drugs?
9. How is extract of *Andrographis paniculata* analysed?
10. What is the impact of ethno botany in traditions medicine?
11. Detection of foreign organic matter and its significance
12. In vitro assay methods for Antifertility activity

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations

Branch: Pharmacognosy

Paper III: Indian System of Medicine (MPG 203T)

Duration: 3 Hours

Max. Marks: 75

Answer all questions

Essays

(3x10=30 Marks)

1. What are the aromatic oils used in aroma therapy for common ailments?
2. Write briefly on the stability studies of ISM formulations
3. What are the Government bills with regard to AYUSH drugs?

Short Notes

(9x5=45 Marks)

4. Write about Traditional Knowledge Digital Library
5. What are the advantages of meditations and relaxation techniques?
6. How is Suddhi (purification process) carried out for Sidha drugs?
7. Discuss briefly about Ayurvedic Pharmacopoea
8. GMP procedures for ISM drugs
9. What are the challenges in monitoring safety of herbal medicines?
10. What are the documentation required for manufacturing of herbal medicines?
11. Discuss about some of the importance classes of formulation as per Homeopathic system of medicine
12. What are the basic principles of naturopathy?

MODEL QUESTION PAPER

Second Semester M.Pharm Degree Examinations

Branch: Pharmacognosy
Paper IV: Herbal Cosmetics (MPG 204T)

Duration: 3 Hours

Max. Marks: 75

Answer all questions

Essays

(3x10=30 Marks)

1. What are the quality control measures for herbal cosmetics as per D&C Act?
2. Give preparation and standardization of cosmetics for nails
3. Write a note on hair colorants and hair oils

Short Notes

(9x5=45 Marks)

4. What are the procedures involved in the export of herbal cosmetics?
5. Herbal formulations for fairness creams
6. What are the toxicity screening methods for cosmetics for the face?
7. Write briefly on baby products
8. Penalties for offences related to sale of herbal cosmetics
9. What is the physiology of skin with relation to pigmentation?
10. Physical in compatibilities associated with herbal & chemical ingredients in formulation of herbal cosmetics
11. What are commonly used preservatives and surfactants used in herbal cosmetics?
12. What are the licensing requirements for manufacture of herbal cosmetics?