

DIPLOMA IN PHARMACY

Assignment

2nd Year

Session 2024-2025



Mahatma Gandhi University

Daramdin , Sikkim

Email :- mgusikkim@gmail.com

Website : www.mgusikkim.com

Submission Guidelines:

- **Deadline:** 10-Dec-2024
- **Format:** Handwritten, cleanly presented, and stapled in order.
- **Assessment Criteria:** Clarity, accuracy, and detail in explanations will be evaluated. Diagrams, where required, should be neatly labeled.

Tips for Completion:

1. Review lecture notes and textbooks for accurate answers.
2. For short and long questions, incorporate labeled diagrams where applicable.
3. Ensure answers in each section are within the word limits to demonstrate concise understanding.

You will find it useful to keep the following points in mind:

a) **Planning:** Read the assignment carefully. Go through the units on which they are based. Make some points regarding each question and then re-arrange these in a logical order in your own words.

b) **Organisation:** Be a little more selective and analytical before drawing up a rough outline of your answer. In an essay-type question, give adequate attention to your introduction and conclusion. The introduction must offer your brief interpretation of the question and how you propose to develop it. The conclusion must summarise your response to the question.

Make sure that your answer:

- is logical and coherent;
- has clear connections between sentences and paragraphs;
- is written correctly giving adequate consideration to your expression, style and presentation;
- does not exceed the number of words indicated in your question.

a) **Presentation:** Once you are satisfied with your answers, you can write down the final version for submission, writing each answer neatly and underlining the points you wish to emphasise.

b) **Interpretation:** Interpretation is a constant process in history writing. It is already reflected in your planning and selection. Explanatory comments with phrases like may be, because, could be, etc., immediately introduce an element of interpretation in writing itself. Here you have to be careful that these comments can be supported by the material you have in the answer.

Submit your assignment at MGU , Sikkim Campus Address

Assignment: Pharmacology

Course: D.Pharma, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide labeled diagrams, examples, and explanations where appropriate.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define pharmacology.
 2. What is the difference between a drug and a medicine?
 3. What is the meaning of "bioavailability" in pharmacology?
 4. Explain the term "therapeutic index."
 5. What is meant by "half-life" of a drug?
 6. Define "agonist" and "antagonist."
 7. Name two types of drug receptors.
 8. What are "side effects" in pharmacology?
 9. Define "dose-response relationship."
 10. What is the role of the liver in drug metabolism?
 11. What is the function of the blood-brain barrier in pharmacology?
 12. What is "first-pass metabolism"?
 13. What is the significance of the dose in pharmacology?
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Explain the difference between pharmacokinetics and pharmacodynamics.
 2. Discuss the factors affecting drug absorption.
 3. Explain the process of drug metabolism, including the role of cytochrome P450 enzymes.
 4. Describe the mechanism of action of opioids. Give examples of commonly used opioids.
 5. Discuss the adverse drug reactions (ADRs) and their classification.
 6. Write a note on the different routes of drug administration and their advantages and disadvantages.
 7. Describe the principle of "drug receptors" and how they influence drug action.
 8. Discuss the role of pharmacology in the development of new drugs.
 9. Explain the concept of "drug-drug interaction" with examples.
 10. Write a note on the pharmacology of antihypertensive drugs.
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Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss in detail the pharmacokinetics of drugs, including absorption, distribution, metabolism, and excretion (ADME). Explain the factors influencing each of these processes.
2. Explain the mechanism of action, therapeutic uses, and side effects of any three classes of antibiotics.
3. Describe the pharmacological actions of adrenergic drugs. Include their clinical uses and potential adverse effects.
4. Discuss the role of the autonomic nervous system in pharmacology. Explain how drugs affecting the sympathetic and parasympathetic systems are used in clinical practice.
5. Write in detail about the pharmacology of non-steroidal anti-inflammatory drugs (NSAIDs), including their mechanism of action, therapeutic uses, and side effects.
6. Discuss the pharmacology of drugs used in the management of diabetes mellitus. Include their classification, mechanism of action, and therapeutic uses.

Assignment: Community Pharmacy and Management

Course: D.Pharma, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide relevant examples, definitions, and explanations where appropriate.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define community pharmacy.
 2. What is the primary role of a pharmacist in community pharmacy practice?
 3. Explain the term "dispensing."
 4. What is the difference between "over-the-counter" (OTC) drugs and prescription drugs?
 5. What does the term "pharmaceutical care" refer to in community pharmacy?
 6. Define the term "inventory management."
 7. What is the significance of "patient counseling" in community pharmacy?
 8. What is "medication therapy management" (MTM)?
 9. What are the core components of a community pharmacy business plan?
 10. Define "drug interaction" in the context of community pharmacy.
 11. What is the role of a pharmacist in patient health education?
 12. What is a "dispensing error"?
 13. What is "stock rotation," and why is it important?
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Explain the different types of services provided by community pharmacies.
 2. Discuss the steps involved in the process of dispensing a prescription.
 3. Describe the role of a community pharmacist in managing chronic diseases.
 4. Explain the principles of inventory management in a community pharmacy setting.
 5. Discuss the importance of patient counseling and the key aspects that should be covered during counseling.
 6. What are the key strategies for ensuring the safe and effective use of medications in community pharmacies?
 7. Explain the concept of "ethical practice" in community pharmacy and its importance.
 8. What are the various methods for ensuring proper drug storage in a community pharmacy?
 9. Discuss the significance of a "patient medication profile" in community pharmacy practice.
 10. Explain the factors that influence the pricing of pharmaceuticals in a community pharmacy.
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Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Describe the management of a community pharmacy, focusing on staffing, financial planning, and inventory control. Explain how these factors contribute to the success of the pharmacy.
2. Explain the role of community pharmacy in health promotion and disease prevention. Discuss how a pharmacist can be involved in public health initiatives.
3. Discuss the legal and ethical responsibilities of a community pharmacist while dispensing medications. Include regulations related to controlled substances.
4. Write in detail about the process of managing pharmaceutical inventory in a community pharmacy, including ordering, receiving, and stock control. Discuss the impact of inventory management on pharmacy operations and profitability.
5. Explain the concept of "pharmacy business management" and the steps involved in running a successful community pharmacy. Discuss how marketing strategies, customer service, and business ethics play a role.
6. Discuss the challenges faced by community pharmacists in providing pharmaceutical care in rural or underserved areas. Suggest strategies for overcoming these challenges.

Assignment: Biochemistry and Clinical Pathology

Course: D.Pharma, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide detailed explanations, relevant examples, and diagrams where applicable.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define biochemistry.
 2. What is the role of enzymes in biochemical reactions?
 3. Name any two functions of lipids in the body.
 4. What is the significance of the pH value in human blood?
 5. Define the term "metabolism."
 6. What is the normal range of blood glucose levels in humans?
 7. What is "osmolarity" and how is it calculated?
 8. Explain the role of vitamins in metabolism.
 9. What is the difference between "saturated" and "unsaturated" fats?
 10. Define "acidosis."
 11. What are "amino acids" and their role in the body?
 12. What is the significance of bilirubin in clinical pathology?
 13. What is a "biochemical marker" and give one example?
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Explain the process of glycolysis and its significance in cellular energy production.
 2. What are the different types of carbohydrates? Discuss their role in human metabolism.
 3. Explain the concept of enzyme kinetics and the factors affecting enzyme activity.
 4. Write a note on the process of protein synthesis and its biochemical importance.
 5. Discuss the role of the liver in carbohydrate and fat metabolism.
 6. Explain the biochemical basis of diabetes mellitus and the importance of blood glucose monitoring.
 7. Discuss the different types of lipids and their function in the human body.
 8. What are the primary clinical tests to assess kidney function? Explain their significance.
 9. Describe the role of hemoglobin in oxygen transport and the biochemical basis of anemia.
 10. What is the principle behind the clinical test for liver function? Discuss the significance of liver function tests.
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Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss in detail the biochemical pathways involved in the breakdown of glucose. Include the process of glycolysis, the Krebs cycle, and oxidative phosphorylation, highlighting their importance in energy production.
2. Explain the process of lipid metabolism. Discuss the synthesis and degradation of triglycerides and the role of fatty acids and cholesterol in human physiology.
3. Describe the clinical significance of blood urea nitrogen (BUN), creatinine, and uric acid tests. How are these tests used to assess kidney function in patients?
4. Write a comprehensive note on the biochemical mechanisms underlying the pathophysiology of diabetes mellitus. Include the role of insulin and glucose metabolism, and discuss the types of diabetes.
5. Discuss the clinical relevance of liver function tests, including ALT, AST, ALP, and bilirubin. Explain the conditions in which these tests are elevated and their diagnostic importance.
6. Describe the clinical laboratory tests commonly used for diagnosing infections, including blood culture, urinalysis, and the significance of C-reactive protein (CRP) levels.

Assignment: Pharmacotherapeutics

Course: D.Pharma, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide detailed explanations, relevant examples, and references where necessary.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define pharmacotherapeutics.
 2. What is the difference between pharmacodynamics and pharmacokinetics?
 3. What is the therapeutic index of a drug?
 4. Name two commonly used analgesics.
 5. What is the mechanism of action of antipyretics?
 6. Define "drug interactions" and give one example.
 7. What is meant by "adverse drug reactions" (ADRs)?
 8. What is the role of the pharmacist in pharmacotherapeutics?
 9. What is "polymorphism" in pharmacology?
 10. What is the function of antacids in the treatment of acid-related disorders?
 11. Name two classes of drugs used to treat hypertension.
 12. What is the mechanism of action of antibiotics?
 13. Define "pharmacokinetics" and list its four key processes.
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Explain the therapeutic uses of analgesics and describe the difference between non-steroidal anti-inflammatory drugs (NSAIDs) and opioids.
2. Discuss the factors influencing drug absorption in the body. How does the route of administration affect drug absorption?
3. What are the different phases of drug metabolism? Discuss the significance of Phase I and Phase II reactions.
4. Explain the mechanism of action of antidiabetic drugs and the therapeutic strategies used in the management of type 2 diabetes.
5. Describe the pharmacology of beta-blockers and their role in the treatment of cardiovascular diseases.
6. What are the common drug therapies for the treatment of asthma? Discuss the role of bronchodilators and anti-inflammatory agents.
7. Describe the clinical application of diuretics and discuss their use in the management of edema and hypertension.
8. Explain the pharmacokinetics of orally administered drugs, covering absorption, distribution, metabolism, and excretion.
9. Discuss the role of the pharmacist in managing adverse drug reactions (ADRs) and drug interactions.

10. What are the key differences between antibiotic therapy and antiviral therapy in terms of their pharmacodynamics and uses?
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Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss in detail the principles of drug therapy. Include the process of choosing the appropriate drug for a particular disease, considering factors like drug efficacy, safety, and patient-specific conditions.
2. Explain the therapeutic management of hypertension. Discuss the classes of drugs used in its treatment, such as ACE inhibitors, ARBs, calcium channel blockers, and diuretics, highlighting their mechanisms of action and clinical uses.
3. Write a comprehensive note on the pharmacotherapy of diabetes mellitus, focusing on both oral and injectable medications. Include insulin therapy, oral hypoglycemics, and emerging therapies in the treatment of diabetes.
4. Explain the principles of antibiotic therapy. Discuss the different classes of antibiotics, their mechanisms of action, spectrum of activity, and the factors influencing their use in clinical practice.
5. Discuss the pharmacotherapeutic management of cardiovascular diseases (CVD), including the use of anti-hypertensives, antiarrhythmic drugs, and lipid-lowering agents. Provide details on the drug classes and their clinical applications.
6. Explain the role of pharmacists in pharmacovigilance. Discuss the significance of monitoring adverse drug reactions (ADRs), reporting systems, and how they contribute to the safe and effective use of drugs in clinical settings.

Assignment: Hospital and Clinical Pharmacy

Course: D.Pharma, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide detailed explanations, relevant examples, and diagrams where applicable.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define hospital pharmacy.
 2. What is the primary role of a clinical pharmacist in a hospital?
 3. Name any two hospital formulary systems.
 4. What is the difference between inpatient and outpatient pharmacy services?
 5. Define "therapeutic drug monitoring."
 6. What is the purpose of an intravenous (IV) admixture service in a hospital pharmacy?
 7. List two common side effects of antibiotics.
 8. What is meant by "medication error" in a clinical setting?
 9. Name two types of parenteral nutrition formulations.
 10. Define "drug information service" in the context of hospital pharmacy.
 11. What is the role of a pharmacist in drug selection?
 12. What is the significance of patient counseling in hospital pharmacy practice?
 13. What are the basic functions of the pharmacy and therapeutics committee (P&T committee)?
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Describe the various functions of a hospital pharmacy.
2. Discuss the role of a clinical pharmacist in preventing drug interactions and managing adverse drug reactions (ADRs) in a hospital setting.
3. Explain the significance of hospital formulary systems. Discuss the factors considered when including drugs in a hospital formulary.
4. Explain the concept of total parenteral nutrition (TPN). Discuss the role of a hospital pharmacy in managing TPN therapy.
5. What are the different drug storage conditions required in a hospital pharmacy? Discuss the importance of maintaining the right conditions.
6. Discuss the importance of patient medication history taking in hospital pharmacy practice and how it contributes to safe and effective therapy.
7. Explain the role of a hospital pharmacist in the preparation and dispensing of chemotherapy drugs.
8. Discuss the concept of therapeutic drug monitoring (TDM). Provide examples of drugs that require TDM.
9. What is the significance of drug utilization review (DUR) in a clinical setting? How does it benefit patient care?
10. Describe the key components of a drug information service in a hospital pharmacy.

Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss the roles and responsibilities of a hospital pharmacist in the clinical setting. Include their role in drug therapy monitoring, patient education, and interdisciplinary collaboration.
2. Write a detailed note on the various drug preparation and dispensing practices in hospital pharmacies. Discuss the procedures for preparing sterile products like injections, IV fluids, and parenteral nutrition.
3. Explain the concept and principles of drug information services in hospitals. How do pharmacists in hospitals provide accurate drug information to healthcare professionals and patients? Discuss the significance of this service.
4. Discuss the steps involved in managing medication errors in a hospital setting. Explain how hospital pharmacists can reduce the incidence of medication errors through appropriate practices.
5. Write a comprehensive note on the role of a hospital pharmacy in the management of infectious diseases. Include the pharmacist's role in antimicrobial stewardship, drug selection, dosing, and monitoring.
6. Discuss the importance of hospital pharmacy ethics and law. Explain how hospital pharmacists ensure compliance with legal regulations regarding drug use, dispensing, and patient confidentiality.

Assignment: Pharmacy Law and Ethics

Course: D.Pharm, 2nd Year

Total Marks: 100

Instructions: Answer all questions in each section as specified. Provide detailed explanations, relevant examples, and diagrams where applicable.

Section A: Very Short Answer Questions (2 marks each)

Answer any 10 questions. Each question carries 2 marks.

[Total Marks: 20]

1. Define "pharmacy law."
 2. What is the primary objective of the Drugs and Cosmetics Act, 1940?
 3. Name two key ethical principles in pharmacy practice.
 4. What is the role of a pharmacist in ensuring drug safety and efficacy?
 5. What does the term "controlled substances" mean in the context of pharmacy law?
 6. What is the difference between a prescription drug and an over-the-counter (OTC) drug?
 7. Define "ethical dilemma" in the context of pharmacy practice.
 8. What is the purpose of the Pharmacy Act, 1948?
 9. What is meant by "patient confidentiality" in pharmacy ethics?
 10. Name two key responsibilities of a pharmacist under the Consumer Protection Act.
 11. What is the significance of the Drug Price Control Order (DPCO) in India?
 12. Define "counterfeit drugs" according to Indian pharmacy law.
 13. What is the role of the Pharmacy Council of India (PCI)?
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Section B: Short Answer Questions (5 marks each)

Answer any 8 questions. Each question carries 5 marks.

[Total Marks: 40]

1. Explain the role of a pharmacist in preventing drug abuse under the Narcotic Drugs and Psychotropic Substances Act, 1985.
 2. Describe the key provisions of the Drugs and Cosmetics Act, 1940, with respect to the manufacturing and sale of drugs.
 3. Discuss the importance of the Code of Ethics for pharmacists and its application in daily pharmacy practice.
 4. Explain the concept of "informed consent" and its importance in pharmacy practice.
 5. Discuss the role of a pharmacist in managing medication errors, in light of pharmacy ethics.
 6. What are the ethical considerations for pharmacists when dealing with patient information and confidentiality?
 7. Describe the process of drug registration as per the Drugs and Cosmetics Act. What role do pharmacists play in this process?
 8. Discuss the importance of the Consumer Protection Act, 1986, in pharmacy practice. How does it protect consumers' rights?
 9. Explain the regulatory requirements for the sale and distribution of narcotic drugs in India.
 10. Discuss the role of a pharmacist in maintaining the quality of medicines in light of pharmacy law.
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Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss the key provisions of the Pharmacy Act, 1948. Explain how this Act governs the registration and practice of pharmacists in India.
2. Explain the principles of professional ethics in pharmacy. Discuss with examples the ethical challenges faced by pharmacists and how they can be addressed in daily practice.
3. Discuss the role of the pharmacist in ensuring compliance with the Drugs and Cosmetics Act, 1940, and its importance in the safe use of medicines. Include the process of drug manufacturing, distribution, and sale.
4. Explain the Narcotic Drugs and Psychotropic Substances Act, 1985, and its impact on the control and regulation of controlled substances in India. What is the pharmacist's role in this?
5. Describe the duties and responsibilities of a pharmacist under the Consumer Protection Act, 1986. How does this Act affect pharmacy practice and consumer rights?
6. Discuss the ethical issues that arise in the promotion and marketing of pharmaceutical products. How should pharmacists navigate these ethical dilemmas while adhering to the law?