

DIPLOMA IN PHARMACY

Assignment

1st Year

Session 2024-2025



Mahatma Gandhi University

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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: Pharmaceutics

Course: D.Pharma, 1st Year

Total Marks: 100

Instructions: Answer all questions as instructed. Be sure to provide relevant examples, diagrams, and explanations 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 pharmaceutics.
 2. What is the primary aim of a pharmacist in pharmaceutics?
 3. What is an emulsion? Give an example.
 4. Define the term "pharmaceutical dosage form."
 5. Name two types of dosage forms.
 6. What is meant by "pharmaceutical compounding"?
 7. What is a suspension? Give an example.
 8. Define "drug delivery system."
 9. What are the common routes of drug administration?
 10. What is the purpose of a preservative in pharmaceutical formulations?
 11. What is the difference between "solution" and "suspension"?
 12. What is the role of a binder in tablet formulation?
 13. Define "pharmacokinetics."
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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 a solution and a suspension. Provide examples of each.
2. Discuss the importance of excipients in pharmaceutical formulations.
3. What are the different types of emulsions? Explain each with an example.
4. Describe the role of a pharmacist in the preparation of sterile products.
5. What are the factors that affect the stability of pharmaceutical formulations?
6. Explain the procedure for preparing an ointment. What are the key ingredients?
7. Discuss the concept of "bioavailability" and its significance in pharmaceutics.
8. Explain the concept of "controlled release" dosage forms and provide examples.
9. Describe the method of preparing a suspension and its advantages over other dosage forms.
10. Discuss the principles of tablet formulation, including the role of each excipient.

Section C: Long Answer Questions (10 marks each)

Answer any 4 questions. Each question carries 10 marks.

[Total Marks: 40]

1. Discuss the various types of pharmaceutical dosage forms and their significance in drug administration. Include examples and describe the advantages and disadvantages of each.
2. Explain the process of emulsion preparation. Discuss the different methods used and the factors influencing the stability of emulsions.
3. Discuss the various routes of drug administration, their advantages, and disadvantages. Provide examples where each route is preferred.
4. Describe the formulation of tablets, including the ingredients involved, the process of compression, and the factors that affect tablet hardness and disintegration.
5. Discuss the different methods of drug delivery systems, such as sustained-release and controlled-release formulations. How do these systems improve the efficacy of the drug?
6. Explain the process of preparing liquid dosage forms such as syrups and elixirs. Discuss the roles of solubility, stability, and preservative use in these preparations.

Assignment: Pharmaceutical Chemistry

Course: D.Pharm, 1st Year

Total Marks: 100

Instructions: Answer all questions as instructed. Provide clear 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. What is pharmaceutical chemistry?
 2. Define the term "pharmacopoeia."
 3. What is the difference between a "pure substance" and a "mixture"?
 4. What is the significance of solubility in pharmaceutical formulations?
 5. Define "acid-base titration."
 6. Name the primary solvents used in pharmaceutical chemistry.
 7. What are "pharmaceutical impurities"?
 8. What is the role of a "buffer" in pharmaceutical formulations?
 9. Define "molecular weight."
 10. What are "functional groups" in organic chemistry?
 11. What is the difference between an "oxidizing agent" and a "reducing agent"?
 12. Define "pharmacological activity."
 13. What is meant by "pH stability" in pharmaceutical products?
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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 methods of expressing concentration in pharmaceutical chemistry.
2. What is the significance of pH in the stability of pharmaceutical formulations? Provide examples.
3. Describe the preparation and significance of "buffer solutions" in pharmaceutical formulations.
4. Explain the principle and procedure of an acid-base titration with an example.
5. What are the common techniques for purifying organic compounds? Explain any two methods.
6. Discuss the importance of solubility and its effect on drug absorption.
7. Explain the concept of "molarity" and "molality." Provide examples of how they are used in pharmaceutical calculations.

8. Discuss the importance of the "functional group" concept in pharmaceutical chemistry, providing examples.
 9. What are the major types of chemical reactions involved in pharmaceutical chemistry? Explain with examples.
 10. Explain the role of "stabilisers" and "preservatives" in pharmaceutical formulations and their importance in maintaining drug efficacy.
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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 various methods of preparing pharmaceutical solutions, including the factors that affect their stability. Provide examples of different types of pharmaceutical solutions.
 2. Explain the concept of "pharmaceutical analysis" and its importance in quality control. Discuss the different types of pharmaceutical analysis methods used in the industry.
 3. Describe the preparation of buffer solutions. Discuss the role of buffers in maintaining the pH of pharmaceutical formulations, and explain how buffers are selected for different formulations.
 4. Explain the principle and application of volumetric analysis in pharmaceutical chemistry. Discuss different types of titrations used in the pharmaceutical industry and their significance.
 5. Discuss the process of drug solubility and its importance in the formulation of oral dosage forms. How does solubility affect the bioavailability of a drug?
 6. Describe the various types of chemical reactions that are important in pharmaceutical chemistry, such as oxidation-reduction, acid-base, and condensation reactions. Provide examples of each and explain their role in drug development.
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Assignment: Pharmacognosy

Course: D.Pharm, 1st Year

Total Marks: 100

Instructions: Answer all questions as instructed. Be sure to provide clear 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 pharmacognosy.
 2. What is the significance of pharmacognosy in pharmacy?
 3. Name two sources of natural medicines.
 4. What is the difference between crude drugs and processed drugs?
 5. What is the role of alkaloids in medicinal plants?
 6. Define the term "terpenoids."
 7. What is the importance of the "pharmacological activity" of natural products?
 8. What is meant by "plant secondary metabolites"?
 9. Name any two plants known for their anti-inflammatory properties.
 10. What are essential oils and how are they used in pharmaceuticals?
 11. Define "bioactive compounds."
 12. Name a plant used for treating diabetes.
 13. What is the difference between "tincture" and "extract"?
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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 "phytochemicals" in human health and disease prevention. Provide examples.
2. Discuss the classification of plant drugs based on their chemical constituents.
3. Describe the methods of extraction used in pharmacognosy, including maceration, percolation, and Soxhlet extraction.
4. Explain the role of glycosides in medicinal plants with examples.
5. Describe the general pharmacological actions of alkaloids. Provide at least three examples of alkaloid-containing plants and their uses.
6. What are resins? Discuss their medicinal uses and how they are obtained from plants.
7. Explain the importance of plant cell culture in the production of medicinal compounds.

8. Describe the process of drug standardization and the importance of quality control in herbal medicines.
 9. Discuss the therapeutic uses of flavonoids and provide examples of plants that contain flavonoids.
 10. Explain the concept of "herbal medicine" and its significance in modern healthcare.
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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 different methods of medicinal plant cultivation, harvesting, and storage. Explain the factors that influence the quality and potency of plant-derived drugs.
2. Describe the structure and chemical properties of alkaloids. Discuss their therapeutic applications, including examples of plants that are rich in alkaloids.
3. Explain the classification of drugs based on their origin, such as plant, animal, and mineral origins. Provide examples of drugs from each source and their uses in pharmacy.
4. Discuss the role of terpenoids in medicinal plants. Explain their chemical structure, classification, and examples of their pharmacological uses.
5. Explain the concept of "herbal drug interactions" and the precautions that need to be taken while using herbal medicines. Discuss how interactions between herbal products and conventional drugs can occur.
6. Discuss the pharmacognostic features used to identify crude drugs. Include macroscopic, microscopic, and organoleptic methods in your answer, with examples of each method.

Assignment: Human Anatomy and Physiology

Course: D.Pharm, 1st Year

Total Marks: 100

Instructions: Answer all questions as instructed. Be sure to provide clear 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 Anatomy and Physiology.
 2. What are the primary functions of red blood cells (RBCs)?
 3. Name the three main types of muscles in the human body.
 4. What is the function of the human skeleton?
 5. Define the term "homeostasis."
 6. What is the role of the nervous system in human physiology?
 7. State the difference between voluntary and involuntary muscles.
 8. What is the function of insulin in the human body?
 9. Name the main organs involved in the process of digestion.
 10. What is the significance of the hypothalamus in the body?
 11. Mention any two types of connective tissues in the human body.
 12. What is the normal pH of blood in the human body?
 13. What is the function of platelets in blood?
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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 structure and function of the heart.
 2. Explain the process of breathing and its regulation by the respiratory system.
 3. Describe the structure of the human brain and its major parts.
 4. Explain the role of the kidneys in maintaining body fluid and electrolyte balance.
 5. Describe the different types of joints found in the human body with examples.
 6. Discuss the structure of the skin and its role in protecting the body.
 7. Explain the process of blood clotting and the role of platelets in it.
 8. Describe the structure and function of the digestive system.
 9. Explain the electrical conduction system of the heart.
 10. Discuss the physiological mechanisms that regulate blood pressure.
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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 structure and function of the human skeletal system. Include the major bones, joints, and ligaments, and explain their roles in movement and support.
2. Explain the physiology of the cardiovascular system. Discuss the circulation of blood, the structure and function of the heart, and the major blood vessels.
3. Describe the anatomy and physiology of the respiratory system. Discuss the process of gaseous exchange in the lungs and the regulation of breathing.
4. Explain the structure and function of the human nervous system, including the central and peripheral nervous systems. Discuss the role of neurons and neurotransmitters in signal transmission.
5. Discuss the human endocrine system and the role of hormones in regulating body functions. Mention key glands like the pituitary, thyroid, and adrenal glands, and explain their secretions and effects.
6. Describe the structure and function of the digestive system. Explain the role of digestive enzymes, absorption in the small intestine, and the elimination process.

Assignment: Social Pharmacy

Course: D.Pharm, 1st Year

Total Marks: 100

Instructions: Answer all questions as instructed. Be sure to provide clear 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 Social Pharmacy.
 2. What is the role of pharmacists in healthcare delivery?
 3. What are the core components of pharmaceutical care?
 4. Name any two public health programs where pharmacists play a key role.
 5. What is patient counseling in social pharmacy?
 6. Define "medication therapy management."
 7. What is the importance of drug information services in pharmacy practice?
 8. Mention two examples of how pharmacists contribute to disease prevention.
 9. What is the role of pharmacists in promoting the rational use of medicines?
 10. Explain the concept of "community-based pharmacy practice."
 11. What is a "health promotion campaign" in the context of pharmacy?
 12. What is the significance of social determinants of health in pharmacy practice?
 13. Define "pharmaceutical ethics."
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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. Discuss the role of pharmacists in patient education and health promotion.
 2. Explain the concept of "medication adherence" and the factors that affect it.
 3. What are the key responsibilities of pharmacists in community health programs?
 4. Discuss the importance of drug information services in clinical pharmacy.
 5. Describe the role of pharmacists in the management of chronic diseases.
 6. Explain how pharmacists can contribute to improving the quality of life of patients.
 7. Discuss the ethical and legal responsibilities of pharmacists in social pharmacy.
 8. Explain the concept of "Pharmaceutical Care" and its significance in social pharmacy.
 9. What are the challenges faced by pharmacists in the rural healthcare system?
 10. Describe the role of pharmacists in vaccination programs and public health campaigns.
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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. Explain the role of social pharmacy in public health. Discuss how pharmacists contribute to the prevention and management of infectious diseases, chronic diseases, and health education.
2. Describe the concept of "rational drug use" and the role of pharmacists in promoting it. Explain how improper medication use affects society and how pharmacists can mitigate these issues.
3. Discuss the relationship between social pharmacy and healthcare policy. How can pharmacists contribute to healthcare policy development and implementation to improve public health?
4. Explain the importance of patient counseling in social pharmacy. Discuss the process of patient counseling, including its objectives, methods, and benefits.
5. Discuss the role of pharmacists in the promotion of mental health. Explain how pharmacists can assist in identifying, treating, and managing mental health issues within a community.
6. Explain how the concept of social pharmacy helps in addressing health disparities. Discuss the role of pharmacists in providing equitable healthcare to different populations, including underserved and marginalized communities.