

**Bachelor of Pharmacy**

**Assignment**

**1<sup>st</sup> Semester**

**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: Human Anatomy and Physiology I**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in the respective sections. Write clearly and concisely.

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

*Answer any 10 questions. Each question carries 2 marks.*

**[Total Marks: 20]**

1. Define homeostasis.
  2. Name the four main types of tissues in the human body.
  3. What is the function of mitochondria?
  4. Define osmosis.
  5. Mention two functions of epithelial tissue.
  6. List the bones of the axial skeleton.
  7. What is the anatomical position?
  8. Describe the role of hemoglobin.
  9. Name two hormones produced by the pancreas.
  10. Define the term synapse.
  11. What are the components of the central nervous system?
  12. Mention the location and function of the thyroid gland.
  13. What is the difference between arteries and veins?
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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 structure and function of the cell membrane.
  2. Describe the process of blood clotting.
  3. Outline the structure and function of the spinal cord.
  4. What are the functions of connective tissue? Give examples.
  5. Discuss the structure and function of the heart valves.
  6. Differentiate between voluntary and involuntary muscles with examples.
  7. Explain the mechanism of breathing in humans.
  8. Describe the structure and function of the neuron.
  9. Write a note on the composition and function of blood.
  10. Explain the role of calcium in muscle contraction.
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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 in detail the structure of the human heart and its role in the circulatory system.
2. Explain the different types of joints in the human body, with examples and functions.
3. Discuss the structure and functions of the digestive system. Include the role of digestive enzymes.
4. Write a comprehensive note on the endocrine system, including the major glands and their functions.
5. Describe the process of urine formation in the kidneys and the role of nephrons.
6. Explain the structure of the respiratory system and the process of gas exchange in the alveoli.

## **Assignment: Pharmaceutical Analysis I**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in each section as specified. Write clearly and label any necessary diagrams.

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

*Answer any 10 questions. Each question carries 2 marks.*

**[Total Marks: 20]**

1. Define pharmaceutical analysis.
  2. What is a primary standard?
  3. State the principle of acid-base titration.
  4. Define molarity and normality.
  5. What is the purpose of an indicator in titrations?
  6. Differentiate between accuracy and precision.
  7. Name two methods for determining endpoint in redox titration.
  8. What is the pH scale, and what does it measure?
  9. List two examples of volumetric glassware.
  10. What is the principle of complexometric titration?
  11. Define limit test and its importance in pharmaceutical analysis.
  12. Mention two sources of error in analytical measurements.
  13. What are buffer solutions?
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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 steps involved in preparing a standard solution.
  2. Describe the principle and application of a potentiometric titration.
  3. Differentiate between primary and secondary standards with examples.
  4. Explain the procedure and purpose of the limit test for chlorides.
  5. Write a short note on acid-base indicators and their selection.
  6. Describe the concept of back titration and give an example.
  7. Discuss the principle of redox titration with a suitable example.
  8. Explain the use of colorimetry in pharmaceutical analysis.
  9. Write a note on the factors affecting the choice of solvents in titrations.
  10. Describe the standardization process of sodium hydroxide.
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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 in detail the principle, procedure, and applications of acid-base titration. Discuss at least two types of acid-base indicators.
2. Describe the different methods of expressing concentration in pharmaceutical analysis and their importance.
3. Discuss in detail the different types of complexometric titrations and their applications in pharmaceutical analysis.
4. Explain the principle of gravimetric analysis. Discuss the steps involved and how it is applied in pharmaceutical analysis.
5. Write a detailed note on Karl Fischer titration, including its principle, types, procedure, and significance in moisture content determination.
6. Discuss the Beer-Lambert Law and its application in UV-Visible spectrophotometry. Explain any limitations of this law.

## **Assignment: Pharmaceutics I**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in each section as specified. Write clearly, and label any necessary diagrams.

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### ***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 role of a pharmacist in pharmaceutical dosage form development?
  3. Name two common types of excipients and their functions.
  4. Define solubility.
  5. What is a suspension?
  6. Mention two advantages of using emulsions as a dosage form.
  7. Differentiate between ointments and creams.
  8. Define bioavailability.
  9. What is a capsule?
  10. State the difference between a syrup and an elixir.
  11. Name two preservatives commonly used in pharmaceutical formulations.
  12. Define dissolution in the context of pharmaceutics.
  13. What is the purpose of granulation in tablet formulation?
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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 factors affecting solubility.
  2. Write a note on the different types of tablet coating techniques.
  3. Explain the methods of preparation for emulsions.
  4. Describe the formulation and uses of suspensions.
  5. Differentiate between sustained-release and controlled-release dosage forms.
  6. Explain the importance of particle size reduction in pharmaceutics.
  7. Describe the different stages involved in the formulation of tablets.
  8. Write a note on effervescent powders and their applications.
  9. Explain the quality control tests for capsules.
  10. Describe the role of stabilizers in pharmaceutical formulations.
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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 in detail the different types of dosage forms, with examples and their applications.
2. Discuss the process of tablet manufacturing. Include the various methods and the challenges faced in tablet formulation.
3. Describe in detail the formulation, types, and evaluation of semisolid dosage forms.
4. Explain the factors affecting drug absorption and bioavailability, with emphasis on the influence of formulation and route of administration.
5. Discuss the concept of preformulation in drug development. Describe the different parameters studied during preformulation.
6. Write a comprehensive note on sterile dosage forms, including types, formulation considerations, and quality control measures.



## **Assignment: Pharmaceutical Inorganic Chemistry**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in each section as specified. Write clearly, and label any necessary diagrams.

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

*Answer any 10 questions. Each question carries 2 marks.*

**[Total Marks: 20]**

1. Define pharmaceutical inorganic chemistry.
  2. What are the primary uses of antacids in pharmacy?
  3. Name two examples of acidifying agents.
  4. What is the role of buffers in pharmaceutical formulations?
  5. Define isotonic solutions with an example.
  6. Mention two examples of cathartics.
  7. What are radioisotopes? Give one example.
  8. Define astringents and their applications.
  9. What is the difference between hard water and soft water?
  10. Name two compounds used as anti-infective agents.
  11. What are the main uses of electrolytes in the body?
  12. Define "limit test" in pharmaceutical analysis.
  13. Name two examples of dental products in inorganic chemistry.
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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 principle and procedure of the limit test for chloride.
  2. Describe the preparation and uses of magnesium hydroxide.
  3. Discuss the pharmaceutical applications of sodium bicarbonate.
  4. Explain the role of iodine and its compounds in pharmacy.
  5. Write a note on the properties and uses of hydrogen peroxide.
  6. Differentiate between antidotes and absorbents with examples.
  7. Describe the composition, preparation, and uses of Oral Rehydration Salts (ORS).
  8. Explain the physiological role of iron and its compounds as hematinics.
  9. Describe the importance of purity in pharmaceutical inorganic compounds.
  10. Write a short note on antacids, including their mechanism of action.
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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 electrolytes in maintaining physiological functions in the body, including their significance in pharmaceutical formulations.
2. Discuss in detail the importance of quality control in pharmaceutical inorganic chemistry, with examples of common limit tests.
3. Describe the preparation, properties, and pharmaceutical uses of any two commonly used astringents.
4. Explain in detail the different types of inhalants, their preparation, and their applications in respiratory conditions.
5. Discuss the various types of radiopharmaceuticals and their applications in diagnostics and therapy. Include examples.
6. Write a comprehensive note on the importance of acidifying and alkalizing agents in pharmaceuticals, with examples and their applications.

## **Assignment: Communication Skills**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in each section as specified. Write clearly, and include examples where relevant.

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

*Answer any 10 questions. Each question carries 2 marks.*

**[Total Marks: 20]**

1. Define communication.
  2. Name two types of verbal communication.
  3. What is nonverbal communication?
  4. Define active listening.
  5. What is a communication barrier?
  6. Mention two examples of written communication.
  7. Define interpersonal communication.
  8. What is feedback in communication?
  9. State two qualities of an effective speaker.
  10. What does the term “body language” refer to?
  11. Name two examples of visual communication.
  12. What is a presentation?
  13. Define empathy in the context of communication.
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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 importance of communication skills for a healthcare professional.
  2. Describe the elements of the communication process.
  3. Differentiate between verbal and nonverbal communication with examples.
  4. Write a note on active listening skills and their importance in effective communication.
  5. Discuss the main barriers to effective communication and ways to overcome them.
  6. Explain the significance of feedback in communication.
  7. Describe the role of empathy in patient counseling.
  8. Write a note on the importance of body language in communication.
  9. Discuss the difference between formal and informal communication.
  10. Explain how to structure an effective presentation.
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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 different types of communication (verbal, nonverbal, written, and visual) and explain their importance in healthcare settings.
2. Explain the role of communication in building a therapeutic relationship with patients. Include examples of effective and ineffective communication.
3. Discuss the essential skills required for effective public speaking. Include tips for managing speech anxiety.
4. Describe the importance of cultural sensitivity in communication, especially in diverse healthcare settings. Provide examples of effective cross-cultural communication.
5. Explain the significance of written communication in the pharmaceutical industry. Discuss different types of written communication used in this field.
6. Describe the impact of technology on modern communication. Include examples of how digital tools enhance or hinder communication in professional settings.

## **Assignment: Remedial Biology**

**Course:** B.Pharm, 1st Semester

**Total Marks:** 100

**Instructions:** Answer all questions in each section as specified. Use diagrams where necessary and label them clearly.

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

*Answer any 10 questions. Each question carries 2 marks.*

**[Total Marks: 20]**

1. Define prokaryotic and eukaryotic cells.
  2. What is photosynthesis?
  3. Name two functions of the cell membrane.
  4. Define osmosis.
  5. What are enzymes? Give an example.
  6. Mention the role of mitochondria in cells.
  7. Define biodiversity.
  8. What is a gene?
  9. Name two types of plant tissues.
  10. What is the main function of xylem?
  11. Define digestion.
  12. What is transpiration?
  13. Name two types of animal tissues.
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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 structure and function of the nucleus.
  2. Describe the process of mitosis.
  3. Discuss the difference between plant and animal cells.
  4. Write a short note on the structure and functions of carbohydrates.
  5. Explain the role of chlorophyll in photosynthesis.
  6. Describe the human digestive system briefly.
  7. Explain the process and importance of transpiration in plants.
  8. Differentiate between monocot and dicot plants with examples.
  9. Describe the structure and function of DNA.
  10. Write a short note on any two types of epithelial tissues in animals.
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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 structure and functions of the cell organelles in a eukaryotic cell.
2. Explain the respiratory system in humans, including the process of gas exchange.
3. Discuss the life cycle of angiosperms, including the processes of pollination and fertilization.
4. Explain the types of connective tissue found in animals, along with their structure and functions.
5. Describe the different stages of meiosis and explain its significance in genetics.
6. Discuss the structure and function of the cardiovascular system, including the role of blood components.