Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharma. D. (Sem.–1)

# MEDICINAL BIOCHEMISTRY

Subject Code : PD103T-19

M.Code : 78161

Date of Examination : 19-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write briefly :**

a) Give one biochemical function each of ATP and cAMP.

b) What is the importance of deamination of amino acids?

c) What is Ketolysis?

d) Differentiate between oxidative phosphorylation and substrate-level phosphorylation.

e) What is the NADPH/NADP coenzyme system?

f) What do you mean by a termination codon?

g) Give the normal ranges for Lipid profiles.

## SECTION-B

2. Describe the hormonal regulation of glucose.

3. Describe the factors affecting enzyme activity.





4. Describe the steps of ketogenesis.

5. Explain the mechanism of energy capture by the electron transport chain (ETC).

6. Describe the principle of diagnostic test for Kidney stone.

7. Explain semi-conservative model for DNA replication.

8. Describe de novo synthesis of pyrimidine nucleotides.

9. Describe the principle and diagnostic application of RIA.

## SECTION-C

10. Describe the reactions and energetics of citric acid cycle.

11. Describe the various steps involved in the biosynthesis of cholesterol and its catabolism to steroid hormones.

12. Describe the various types of coenzyme derived from vitamins and their physiological importance.

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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D (Sem.-1)

# HUMAN ANATOMY & PHYSIOLOGY

Subject Code : PD101T-19

M.Code : 78159

Date of Examination : 16-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.**
2. **SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.**
3. **SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.**

## SECTION - A

1. **Answer the following question:**

a) Define a synovial joint.

b) What is haemopoiesis?

c) Define lymph.

d) What is cardiac output?

e) Define hypoxia.

f) What is peristalsis?

g) Name any two cranial nerves.

## SECTION-B

2. Describe the structure and functions of mitochondria.
3. Classify connective tissues with examples.





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4. Explain types of joints and their movements.
5. Describe composition and functions of blood.
6. Explain mechanism of blood clotting.
7. Describe structure and functions of spleen.
8. Explain pulmonary and systemic circulation.
9. Describe respiratory volumes and capacities.

## SECTION-C

10. Describe in detail the anatomy and physiology of the heart.
11. Explain the anatomy and physiology of GIT.
12. Describe structure and functions of the cerebrum and cerebellum.

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Roll No. | | | | | | | | | | | | Total No. of Pages :02

Total No. of Questions : 12

Pharma. D. (Sem.–1)

# PHARMACEUTICAL ORGANIC CHEMISTRY

Subject Code : PD104T-19

M.Code : 78162

Date of Examination :13-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.**
2. **SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.**
3. **SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.**

## SECTION-A

**1. Answer the following questions:**

a) Write the IUPAC name of the following compounds:

(a) $C_2H_5COOC_3H_7$

(b) $C_2H_5COC_3H_7$

(c) $C_2H_5OC_3H_7$

(d) $NH_2CH_2COOCH_2Cl$

b) Define tautomerism with one example.

c) Enlist the methods for determining melting and boiling point of organic compounds.

d) Give an example of free radical substitution of methane using halogen.

e) Define E1 reaction with example.

f) Give Riemer-Tiemann reaction with intermediate formed.

g) Is benzene an aromatic compound? Justify as per Huckel's rule of aromaticity.





## SECTION-B

2. Classify organic compounds and give the example of each class with structure.
3. Define isomerism. Describe functional isomerism and metamerism with examples.
4. Discuss conformational isomerism with reference to butane.
5. Describe factors affecting solubility of organic compounds and give examples of protic and aprotic molecules.
6. Discuss dehydrohalogenation of alkyl halides with rearrangement of carbocation formed.
7. Describe SN1 and SN2 mechanisms with suitable example.
8. Explain stability and reactions of conjugated dienes.
9. What are nucleophilic addition reactions? Give suitable examples of nucleophilic addition reactions of aldehydes and ketones.

## SECTION-C

10. Define stereoisomerism and explain optical and geometrical isomerism with suitable examples.
11. Classify amino acids and give the qualitative and quantitative tests for proteins.
12. Give the following reactions with mechanisms and synthetic importance:

(a) Aldol condensation

(b) Cannizzaro reaction

(c) Benzoin condensation

(d) Perkin's reaction

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Total No. of Questions: 12

Pharm.D. (Sem.–1)

# PHARMACEUTICAL INORGANIC CHEMISTRY

Subject Code: PD105T-19

M.Code: 78163

Date of Examination: 11-06-2026

Time: 3 Hrs.  Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION A

1. **Answer the following questions:**

   (a) Define accuracy and precision.

   (b) Define redox indicator.

   (c) Define limit test.

   (d) State the common ion effect.

   (e) What are medicinal gases. Give examples.

   (f) What is a primary standard.

   (g) What is non-aqueous titration.





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## SECTION B

2. Classify antacids. Give ideal properties and examples of antacids.
3. Describe principle and applications of complexometric titrations.
4. Define dentifrices. Write an account on calcium carbonate and zinc chloride.
5. Discuss buffer solutions and Henderson–Hasselbalch equation.
6. Explain types of precipitation titrations and endpoint detection.
7. Describe preparation and standardization of perchloric acid in non-aqueous titration.
8. Explain basic concepts and steps involved in gravimetric analysis.
9. Classify errors in quantitative analysis and explain any two types.

## SECTION C

10. Discuss limit tests for chlorides, sulphates, iron, arsenic, lead, and heavy metals with procedures.
11. Write a detailed note on electrolytes used in replacement therapy and acid-base balance, including combination therapy and oral rehydration salts.
12. Explain acid-base titrations in detail including theory of indicators, neutralization curves, and choice of indicators.

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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D (Sem.–1)

**PHARMACEUTICS**

Subject Code : PD102T-19

M.Code : 78160

Date of Examination : 09-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Define the following :**

a) Define hygroscopic and deliquescent powder.

b) How to dispense potent powders?

c) Define 'surgical dressing'.

d) What are deflocculated suspensions?

e) Write the equation of stokes' law.

f) What is displacement value?

g) Why is the marc pressed in certain extraction processes?

## SECTION-B

2. Describe salient features of the latest edition of the Indian Pharmacopoeia.
3. Describe in detail the simple maceration process for extraction.





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4. Define catgut. How will you prepare catgut?
5. Discuss various physical and therapeutic incompatibilities.
6. Describe in detail various types of ointment bases.
7. What are suppositories? What are the various methods of preparation of suppositories?
8. Discuss various methods for the preparation of suspension.
9. Write a short note on the history of the pharmacy profession.

## SECTION-C

10. Discuss in detail various solubility enhancement techniques.
11. What are emulsions? Discuss in detail about formulation of emulsion.
12. Why imbibition is necessary before packing the drug in a percolation? Write in brief about percolation processes for concentrated preparation.

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Total No. of Questions: 12

Pharm.D (Sem.–2)

# COMMUNITY PHARMACY

Subject Code: PD205T-19

M.Code: 80146

Date of Examination: 25-05-2026

Time: 3 Hrs. Max. Marks: 70

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write a brief note on the following**

   (a) Define community pharmacy and state its scope.

   (b) Write any two legal requirements for running a community pharmacy.

   (c) Name the essential parts of a prescription.

   (d) What is ABC analysis in inventory control?

   (e) Define pharmaceutical care.

   (f) Mention any two barriers to patient counselling.

   (g) Define OTC drugs and give two examples.





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## SECTION - B

2. Describe the responsibilities of a community pharmacist.

3. Explain the factors to be considered in selection of site for a community pharmacy.

4. Write a short note on maintenance of registers in community pharmacy.

5. Discuss various stages of patient counselling.

6. Explain VED analysis in inventory control.

7. Describe methods for screening blood pressure and blood sugar.

8. Discuss common communicable diseases: Tuberculosis and Malaria.

9. Explain the role of pharmacist in family planning services.

## SECTION - C

10. Explain in detail the use of computers in community pharmacy including business and health care software.

11. Describe pharmaceutical care – definition, principles and role of pharmacist.

12. Write in detail on patient medication adherence: definition > factors affecting and role of pharmacist in improving adherence.

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Pharm.D (Sem.–2)

**PHARMACOTHERAPEUTICS-I**

Subject Code: PD206T-19

M.Code: 80147

Date of Examination: 29-05-2026

Time: 3 Hrs. Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions. Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions. Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION A

**1. Answer the following questions:**

a) Define hypertension.

b) What is pulmonary function test?

c) Define diabetes mellitus.

d) What is hormone replacement therapy?

e) Define glaucoma.

f) What is rational drug use?

g) Define arrhythmia.

## SECTION B

2. Explain etiopathogenesis of angina pectoris.

3. Describe management of congestive cardiac failure.







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4. Explain bronchial asthma and its pharmacotherapy.

5. Write a note on drug-induced pulmonary diseases.

6. Explain pharmacotherapy of diabetes mellitus.

7. Describe thyroid disorders and their management.

8. Explain general prescribing guidelines in pediatric patients.

9. Describe bacterial conjunctivitis and its treatment.

## SECTION C

10. Discuss etiopathogenesis and pharmacotherapy of myocardial infarction and hyperlipidaemia.

11. Explain drug therapy in pregnancy and breastfeeding along with risks and precautions.

12. Discuss rational drug use, essential drug concept, and role of pharmacist in promoting rational therapy.

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Total No. of Questions : 12

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Pharm.D (Sem.–2)

**PHARMACOLOGY-I**

Subject Code : PD204-T-19

M.Code. : 80145

Date of Examination : 21-05-2026

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly :**

   a) Define general anesthesia.

   b) Define pharmacokinetics and hst its components.

   c) Define drug interaction

   d) Mention the advantages of intravenous route of drug administration.

   e) What are mucolytics?

   f) What are enzyme inducers?

   g) What are beta-blockers?

## SECTION-B

2. Classify cholinergic drugs with examples and uses.

3. Discuss sedative and hypnotic drugs with examples.

4. Write short note on drugs used in Parkinsonism.

5. Explain factors modifying drug response.





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6. Explain oral hypoglycaemic agents with examples.

7. Classify anti-anginal drugs and explain mechanism of nitrates.

8. Describe absorption of drugs and factors affecting it.

9. Write a note on bronchodilators and their mechanism.

## SECTION-C

10. Classify antihypertensive drugs and discuss their mechanism, uses, adverse effects and contraindications

11. Explain thyroid hormones and antithyroid drugs in detail including pharmacokinetics, mechanism, uses and adverse effects.

12. Discuss pharmacology of analgesic and anti-inflammatory drugs including classification, mechanism, uses and adverse effects

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Total No. of Questions : 12

Pharm.D(Sem.–2)

# PHARMACOGNOSY & PHYTOPHARMACEUTICALS

Subject Code : PD203T-19

M.Code : 80144

Date of Examination : 18-05-2026

Time : 3 Hrs.  Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly :**

(a) Define Pharmacognosy.

(b) What is chemotaxonomy?

(c) Define crude drugs with example.

(d) What are cell inclusions?

(e) Give two factors affecting cultivation of crude drugs.

(f) What is adulteration?

(g) Define alkaloids.

## SECTION-B

2. Explain scope and importance of Pharmacognosy.

3. Describe morphological classification of crude drugs with examples.







4. Write short note on drying techniques of crude drugs.

5. Explain method of cultivation of Senna.

6. Describe macroscopy and microscopy of Clove.

7. Write short note on identification tests of alkaloids.

8. Explain classification and properties of tannins.

9. Describe methods of evaluation of crude drugs.

## SECTION-C

10. Explain different systems of classification of crude drugs in detail with advantages and limitations.

11. Describe in detail:

(a) Cultivation and collection of Cardamom

(b) Storage and preservation of crude drugs

12. Write detailed notes on:

(a) Morphology and microscopy of Ginger

(b) Chemical classification and identification of glycosides.

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Total No. of Questions: 12

Pharm.D (Sem.–2)

# PHARMACEUTICAL MICROBIOLOGY

Subject Code: PD202T-19

M.Code: 80143

Date of Examination: 14-05-2026

Time: 3 Hrs.  Max. Marks: 70

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A contains SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write a brief note on the following:**

   (a) Define fungi and mention one pharmaceutical importance.

   (b) What is selective media? Give an example.

   (c) Mention two biochemical tests for bacterial identification.

   (d) What are bacteriostatic agents? Give one Example.

   (e) Define active immunity.

   (f) Write one application of PCR in diagnostics.

   (g) What is meant by microbial culture sensitivity testing?

## SECTION - B

2. Write a note on viruses and their classification
3. Discuss the cultivation of anaerobic bacteria
4. Explain the principle of total and viable bacterial count.
5. Write a note on validation in sterilization.
6. Explain the role of toxoids in active immunity.
7. Write a note on ELISA test and its applications.
8. Discuss microbial assay of Vitamin B12.
9. Describe the clinical manifestations of Malaria.

## SECTION - C

10. Write in detail about disinfectants and antiseptics – mechanism of action and evaluation.
11. Describe the preparation, standardisation, and storage of vaccines and sera.
12. Write a detailed account on Tuberculosis – causative organism, pathophysiology, diagnosis, and prevention.



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Total No. of Questions : 12

Pharm.D (Sem.–2)

PATHOPHYSIOLOGY

Subject Code : PD-201T-19

M.Code : 80142

Date of Examination : 11-05-2026

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type).Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type).Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly:**

   a) Define kwashiorkor.

   b) Define inflammation and write the cardinal signs of inflammation.

   c) Classify different autoimmune diseases.

   d) Define leprosy.

   e) Define cell injury.

   f) What is depression?

   g) Differentiate between benign and malignant tumor.

## SECTION – B

2. Write a note on the mechanism and stages of shock.
3. Write a note on repairs of wound in the skin.
4. Discuss the pathophysiology of asthma.
5. Explain in brief about hypersensitivity reactions.
6. Discuss the pathophysiology of hepatitis.
7. Write a note on abnormalities of glycogen storage disease.
8. Write in brief about classification of tumors.
9. Briefly describe fat-soluble vitamins.

## SECTION – C

10. Discuss the causes and pathogenesis of cell injury.
11. Discuss in brief about the pathophysiology of malaria and the malaria life cycle.
12. Describe transplantation rejection.



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Total No. of Questions : 12

Pharm.D. (Sem.–3)

# PHARMACEUTICAL JURISPRUDENCE

Subject Code : PD304T-19

M.Code : 92168

Date of Examination : 20-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each attempt any FIVE.**
2. **SECTION-B contains EIGHT questions carrying FIVE marks each and student have to attempt any SIX questions.**
3. **SECTION-C contains THREE questions carrying FIFTEEN marks each student have to attempt any TWO questions.**

## SECTION-A

1. **Answer Briefly :**

a) What is confidentiality in pharmaceutical ethics?

b) What is Schedule X?

c) Define labelling requirements.

d) What is the disqualification of pharmacist?

e) What is excise duty?

f) Define infringement?

g) Define essential commodities.





## SECTION-B

2. Describe a brief layout of pharmaceutical legislation.
3. Discuss the ethical responsibilities in dispensing narcotics.
4. Discuss role of DTAB and DCC.
5. Discuss various functions of PCI and State Pharmacy Councils.
6. Differentiate bonded and non-bonded drugs.
7. Define the term magic remedies. Discuss various the classes of advertisement prohibited.
8. Discuss drug price control order in detail.
9. What are the objectives of Pharmacy Act? Write constitution and functions of state pharmacy council.

## SECTION-C

10. Discuss in detail ethical dilemmas in modern pharmacy practice.
11. Evaluate the role of the government in drug regulation.
12. Critically analyze the NDPS Act's effectiveness.

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Total No. of Questions : 12

Pharm.D. (Sem.–3)

# PHARMACOTHERAPEUTICS-II

Subject Code : PD303T-19

M. Code : 92167

Date of Examination : 17-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each, attempt any FIVE questions.**
2. **SECTION-B contains eight questions carrying FIVE marks each and student have to attempt any SIX questions.**
3. **SECTION-C contains THREE questions carrying FIFTEEN marks each student have to attempt any TWO questions.**

## SECTION-A

**I. Answer briefly :**

a) Define rational use of antibiotics.

b) What is septicemia?

c) Define rheumatoid arthritis.

d) What is acute renal failure?

e) Define chemotherapy.

f) What is psoriasis?

g) Define opportunistic infection.

## SECTION-B

2. Explain guidelines for surgical prophylaxis of antibiotics.

3. Describe etiopathogenesis of tuberculosis.





4. Explain management of osteoarthritis.

5. Describe etiopathogenesis of gout.

6. Explain causes and management of chronic renal failure.

7. Describe general principles of cancer chemotherapy.

8. Explain pharmacotherapy of breast cancer.

9. Describe etiopathogenesis of scabies.

## SECTION-C

10. Discuss etiopathogenesis and pharmacotherapy of HIV infection and opportunistic infections.

11. Explain in detail acute renal failure and renal dialysis including indications and complications.

12. Discuss etiopathogenesis and pharmacological management of malaria.

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Total No. of Questions : 12

Pharm.D (Sem.–3)

**PHARMACOLOGY-II**

Subject Code : PD-301T-19

M.Code : 92165

Date of Examination : 15-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write briefly :**

a) What is Grey baby syndrome? How it occurs?

b) Define Genetic Code.

c) Mention examples of $P_2Y_{12}$ receptor inhibitors.

d) What do you mean by gene therapy?

e) Enlist various drugs used in the treatment of Amoebiasis.

f) Define Mutations.

g) What is the primary role of Proteosomes?

## SECTION-B

2. Write a short note on antiplatelet agents.

3. Discuss about the recombinant DNA technology and its applications.





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4. Give an account of Chronic toxicity studies.

5. What are tetracyclines? Describe its pharmacology.

6. Describe malarial cycle and explain different drugs targeting in the malarial life cycle.

7. Describe the pharmacology of immunosuppressive agents.

8. Classify the types of chromosome structure and its functions.

9. Describe about PI3 kinase pathway.

## SECTION-C

10. Classify Anti-cancer agents along with examples. Discuss in detail about pharmacology of any two classes.

11. Give an account of:

(a) Quinolines

(b) Anti-Viral agents

12. Discuss in detail pharmacology of any two:

(a) Loop Diuretics

(b) Cephalosporins

(c) Haemopoietics

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Total No. of Questions :12

Pharm.D. (Sem.–3)

# PHARMACEUTICAL FORMULATIONS

Subject Code :PD306T-19

M.Code :92170

Date of Examination :12-06-2026

Time : 3 Hrs.  Max. Marks :70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A Is COMPULSORY Consisting of SEVEN Questions Carrying TWO Marks Each. Attempt Any Five.**
2. **Section-B Consisting Of EIGHT Questions Carrying FIVE marks Each. Attempt Any SIX.**
3. **Section-C Consisting Of THREE Questions carrying FIFTEEN marks each. Attempt Any Two.**

## SECTION-A

1. **Explain briefly :**

a) Define Ocusert.

b) Give two examples of anti-oxidants and preservatives used in liquid orals.

c) Name the methods for isotonicity adjustment.

d) What are transdermal patches?

e) What are the advantages of coating of tablets?

f) Define Creaming.

g) What is sedimentation volume?

## SECTION-B

2. Describe Limulus amoebocyte lysate (LAL) test for pyrogens.

3. Mention the names for evaluating tablet dosage forms and discuss any two in detail.





4. Define jellies. Classify and explain its formulation along with storage and labeling.

5. Discuss the evaluation parameters of emulsion dosage forms.

6. Distinguish between hard gelatin capsules and soft gelatin capsules.

7. Write a note on Ocular drug delivery system.

8. Explain factors influencing the solubility of drugs while preparing liquid orals.

9. Discuss the physicochemical factors to be considered in designing controlled drug delivery systems.

## SECTION-C

10. Describe in detail the formulation, evaluation and packaging of ointment dosage forms.

11. (a) Discuss in detail about the production facilities for parenteral formulation.

    (b) Give an account of QC tests for soft gelatin capsule.

12. (a) Explain in detail about different excipients used in tablets.

    (b) Write a note on stability of suspensions.

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Roll No. | | | | | | | | | | | |  Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D (Sem.–3)

# PHARMACEUTICAL ANALYSIS

Subject Code : PD302T-19

M.Code : 92166

Date of Examination : 10-06-2026

Time : 3 Hrs.  Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A contains SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.**
2. **SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.**
3. **SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.**

## SECTION-A

1. **Write Briefly :**

a) Define Quality Assurance and list sources of quality variation.

b) What is Statistical Quality Control?

c) Define $R_f$ value in Thin Layer Chromatography.

d) What is the role of carrier gas in Gas Chromatography?

e) Discuss the deviation of the Beer-Lambert Law.

f) What is a reference electrode? Give one example.

g) How is fluorescence quenched?

## SECTION-B

2. Explain validation of analytical instruments with suitable examples.

3. Classify chromatography techniques and explain the choice of method.





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4. Describe the principle and applications of Ion-exchange chromatography.

5. Explain the instrumentation and working of HPLC.

6. Discuss potentiometric titrations and methods of endpoint detection.

7. Explain the Beer-Lambert Law and its limitations in pharmaceutical analysis.

8. Describe the principle and applications of IR spectroscopy.

9. Explain the working and applications of Flame photometry.

## SECTION-C

10. Discuss Total Quality Management, GLP, ISO 9000, and ICH guidelines in the pharmaceutical industry.

11. Compare and analyse TLC, Paper Chromatography, and HPLC.

12. Describe UV-Visible spectroscopy, including theory, instrumentation, and applications.

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Roll No. | | | | | | | | | | | | Total No. of Pages: 02

Total No. of Questions: 12

Pharm.D. (Sem.–3)

**MEDICINAL CHEMISTRY**

Subject Code: PD-305T-19

M.Code: 92169

Date of Examination: 08-06-2026

Time: 3 Hrs. Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION A

1. **Answer briefly:**

   (a) What are antiarrhythmic drugs?

   (b) Define diagnostic agents.

   (c) Define antiprotozoal agents.

   (d) Define antineoplastic agents.

   (e) What are antisense molecules?

   (f) Define combinatorial chemistry.

   (g) What are sulphones?

## SECTION B

2. Discuss urinary tract anti-infective agents with examples.





3. Explain the concept of prodrug with suitable examples.
4. Explain β-lactam antibiotics with examples and mechanism.
5. Discuss SAR of antimalarial drugs.
6. Explain synthesis and uses of any one sulphonamide.
7. Describe mechanism of action and classification of anticancer drugs.
8. Discuss thyroid and antithyroid drugs.
9. Explain antihyperlipidemic agents with examples.

## SECTION C

10. Explain cardiovascular agents including antihypertensives, antiarrhythmics, and anticoagulants.
11. Write a detailed note on diuretics including classification, mechanism of action, and therapeutic applications.
12. Discuss anti-infective agents in detail including classification, mechanism of action, and therapeutic uses.

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Roll No. ☐☐☐☐☐☐☐☐☐☐ Total No. of Pages: 02

Total No. of Questions: 12

**Pharm.D. (Post Baccalaureate) (Sem.–4)**
**PHARMACOTHERAPEUTICS- I & II**
**Subject Code: PD407T19**
**M.Code: 78153**
**Date of Examination: 23-05-2026**

Time: 3 Hrs. Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A contain SEVEN questions. Attempt any FIVE quest ions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions. Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION – A

**1. Write briefly:**

a) Define rational drug use in the context of pharmacotherapy.

b) List two examples of conditions that require rational use of antibiotics.

c) Name one drug that is generally avoided during pregnancy due to potential teratogenic effects

d) Mention commonly prescribed medication for osteoporosis.

e) What is the primary therapeutic goal in the management of asthma?

f) Name two biomarkers used in the diagnosis of myocardial infarction.

g) List two symptoms of hypothyroidism







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## SECTION – B

2. Explain the clinical features and treatment options for congestive cardiac failure
3. Explain the guidelines for the rational use of antibiotics in infectious diseases:
4. Explain the general prescribing guidelines for pediatric patients, highlighting the importance of dosing considerations and drug formulations.
5. Describe the management of osteoporosis
6. Write Explain the pharmacological and non-pharmacological management of chronic obstructive pulmonary disease (COPD).
7. Explain the electrophysiology of the heart and the mechanisms leading to common arrhythmias.
8. Explain the management of thyroid diseases. Discuss the mechanisms of action, benefits, and risks of oral contraceptives.
9. Describe the electrophysiological basis of cardiac arrhythmias

## SECTION – C

10. Describe the principles of cancer therapy and management of chemotherapy-induced nausea and emesis.
11. Analyse the management of thyroid disorders, including hyperthyroidism and hypothyroidism.
12. Discuss the pharmacological and non-pharmacological management of osteoporosis.

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Total No. of Questions : 12

Total No. of Pages : 02

D. Pharma (Post Baccalaureate) (Sem.–4)

CLINICAL TOXICOLOGY

Subject Code : PD406T19

M.Code : 78152

Date of Examination : 21-05-2026

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write briefly :**

a) Define envenomation

b) Define antidote.

c) Define elimination half-life

d) What are caustic poisons?

e) What is gastric lavage?

f) Define hallucinogenic drugs.

g) Mention different signs ofsalicylate poisoning.

## SECTION-B

2. Discuss anti-depressant poisoning and its management.

3. Explain the role ofantidotes in poisoning management.





4. Explain toxicity and management of NSAIDs poisoning.

5. Describe signs and treatment of cannabis and amphetamine abuse

6. Describe methods of enhanced elimination in toxicology.

7. Describe clinical features and management of radiation poisoning.

8. Explain mushroom poisoning and mycotoxins.

9. Discuss management of benzodiazepine overdose.

## SECTION-C

10. Explain chronic poisoning due to LSD including clinical features and treatment.

11. Describe arthropod envenomation: types, clinical manifestations, and management.

12. Discuss alcohol poisoning: clinical features and management.

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Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Sem.–4)

# CLINICAL TOXICOLOGY

Subject Code : PD406T-19

M. Code : 93765

Date of Examination : 21-05-2026

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write briefly :**

a) Define Toxicokinetics

b) Name two commonly used antidotes and their indications

c) List early signs of organophosphate poisoning,

d) What is the role of gastric lavage in poisoning?

e) Mention two clinical symptoms of methanol toxicity.

f) List any two supportive care measures in toxicology.

g) What is the mechanism of toxicity of salicylates?

## SECTION-B

2. Explain the clinical features and treatment of carbamate poisoning,
3. Describe the management of paracetamol overdose.





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4. Discuss the principles of gut decontamination.
5. Compare and contrast organochlorine and pyrethroid poisoning.
6. Outline the management of a patient with benzodiazepine overdose.
7. Discuss the role of dialysis in enhancing elimination of poisons.
8. Describe complications associated with caustic alkali ingestion
9. Write a short note on clinical toxicology supportive care strategies.

## SECTION-C

10. Elaborate on the diagnosis and management of heavy metal poisoning with reference to arsenic and lead.
11. Describe the clinical symptoms, first aid, and management of venomous snake bites
12. Explain the pathophysiology, clinical features, and treatment of ethanol vs. methanol poisoning.

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Total No. of Questions : 12

Pharma.D (Post Baccalaureate) (Sem.–4)

# BIOSTATISTICS AND RESEARCH METHODOLOGY

Subject Code : PD 404T-19

M.Code : 78150

Date of Examination :15-05-2026

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly :**

a) What is meant by Power of a study?

b) Distinguish between Correlation and Regression Analysis.

c) What is Semilogarithmic plot?

d) Differentiate between Parametric and Non-parametric tests.

e) Define the terms 'Null Hypothesis' and 'Alternative Hypothesis'.

f) What are the benefits of computerizing the prescription dispensing system?

g) Why management reports in hospital pharmacy are crucial?

## SECTION – B

2. Write a note on Student t test.

3. Describe various methods of data presentation.





4. Calculate Mean and standard deviation of following distribution:

| X: | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|
| Y: | 8 | 16 | 24 | 32 | 8 | 40 | 32 |

5. What are key features, advantages and disadvantages of SPSS statistical software.

6. What is the use of computers for pharmaceutical care in community pharmacy?

7. What are ideal characteristics of a 'Measure of Dispersion'? How coefficient of variation is determined?

8. What are the different approaches for designing a methodology?

9. Write a note on Wilcoxon Rank Sum test.

## SECTION – C

10. Discuss in detail role of statistical methods in epidemiological studies.

11. Discuss the importance of computer system in hospital pharmacy with respect to:

(a) Inventory Control

(b) Medication Order Entry

12. (a) Find correlation coefficient of following data:

| X: | 18 | 15 | 14 | 12 | 10 | 9 | 7 |
|---|---|---|---|---|---|---|---|
| Y: | 21 | 29 | 36 | 48 | 56 | 62 | 69 |

Also test for statistical significance.

(b) A company conducts a survey to determine whether there's a relationship between age groups and preferred beverages. The data collected is as follows:

| Age Group | Coffee | Tea | Soft Drinks | Water |
|---|---|---|---|---|
| 18-25 | 30 | 20 | 25 | 15 |
| 26-35 | 25 | 30 | 20 | 25 |
| 36-45 | 20 | 25 | 30 | 25 |
| 46-55 | 15 | 20 | 25 | 40 |

Use a Chi square test to determine if there is an association between age group and preferred beverage

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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Sem.–4)

# BIOSTATISTICS AND RESEARCH METHODOLOGY

Subject Code : PD404T-19

M.code : 93763

Date of Examination : 15-05-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions. Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions. Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write short notes on :**

   a) Define Standard Deviation

   b) Define Median along with formula

   c) Define level of significance

   d) Give the degrees of freedom formula in Two Way ANOVA

   e) Define confidence interval

   f) Define retrieval

   g) Define relative risk

## SECTION-B

2. Give a brief account of regression
3. Write a note on incidence and prevalence





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4. Calculate mean and mode for the given data

| Class interval | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
|---|---|---|---|---|---|
| Frequency | 2 | 12 | 4 | 3 | 5 |

5. Describe about advantages of computerized literature retrieval
6. How various graphs are useful in biostatistics to represent the data
7. Discuss salient features of research methodology
8. Give an account of accounting and general ledger system
9. Write a brief note on Software's used in biostatistics

## SECTION-C

10. a) A drug is given to eleven patients and differences in BP were recorded to be:

| Before Drug A: | 112 | 113 | 118 | 120 | 119 | 113 | 110 | 122 | 126 | 115 | 119 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| After Drug A: | 116 | 120 | 117 | 125 | 126 | 111 | 111 | 117 | 126 | 112 | 129 |

Use the wilcoxan signed rank test to the hypothesis that the drug has no effect on the change of BP? [ z value at 5% is 1.96]

b) Give the salient features of Spearman's correlation

11. Discuss in detail on ANOVA ( one way and Two way)
12. a) Use of computers in community pharmacy

    b) Range, coefficient of variation and standard error mean

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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Post Baccalaureate) (Sem.–4)

# BIOPHARMACEUTICS AND PHARMACOKINETICS

Subject Code : PD405T 19

M.Code : 78151

Date of Examination : 18-05-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. **Write briefly :**

a) What is "Vd"? What are its units?

b) What is the relation between pKa of drug and pH of biological fluid?

c) Mention the GIT factors influencing drug absorption.

d) Distinguish between absolute and relative availability.

e) What are bioequivalent products?

f) Mention the equation for characterizing plasma drug concentration after IV bolus injection and draw the representative profile.

g) Differentiate between one- and two-compartment models with the help of a representative plasma drug concentration Vs time profile for oral administration.





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## SECTION-B

2. Discuss various processes of drug elimination.

3. Write a note on physiological pharmacokinetic model.

4. Derive equations to explain the plasma drug concentration Vs time profile after IV administration of a drug following one-compartment open model.

5. Explain MRT, MAT, and MDT.

6. Write a note on the reasons for very high and very low Vd.

7. Give an overview of a complete crossover bioequivalence design.

8. Write a note on drug distribution and the factors influencing drug distribution.

9. What are single blind and double blind studies?

## SECTION-C

10. Mention the key features of non-linear pharmacokinetics. Discuss the tests conducted for determining such behavior of drugs.

11. Discuss the factors influencing drug metabolism.

12. Explain the pharmacokinetics of drugs after IV bolus dosing followed by IV infusion.

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Roll No. | | | | | | | | | | | | Total No.of Pages : 02

Total No. of Questions : 12

Pharm.D. (Sem.–4)

## BIOPHARMACEUTICS & PHARMACOKINETICS

Subject Code : PD405T-19

M.Code : 93764

Date of Examination : 18-05-2026

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

### SECTION - A

I. **Write briefly :**

a) Define biopharmaceutics.

b) What do you mean by drug levels in blood?

c) List any two uses of multiple dose regimens.

d) What is Physiological pharmacokinetic modelling?

e) Differentiate between bioavailability and bioequivalence.

f) Name any two parameters estimated using Michaelis-Menten model.

g) State the purpose of statistical moment theory.

### SECTION-B

2. Describe absorption of drugs and factors influencing it.
3. Explain the pharmacokinetic study design and its significance.





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4. Discuss the one compartment open model for extravascular dosing.
5. Write about methods of elimination of drugs from the body.
6. Explain the role of two compartment open model in pharmacokinetics.
7. Discuss the protocol for long-term multiple dose regimens.
8. Describe IV bolus, IV infusion and oral administration in multicompartment models.
9. Explain how physiological pharmacokinetic models are developed and used.

### SECTION-C

10. Describe the multiple dose regimen concept and explain how it is applied in two compartment open models with examples.
11. Explain the methods for conducting bioavailability and bioequivalence studies in detail.
12. Discuss non-linear pharmacokinetics, detailing factors causing non-linearity and the methods used for parameter estimation.

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Total No. of Questions: 13

Pharm.D. (Sem.–4)

# CLINICAL PHARMACY

Subject Code : PD403T-19

M. code : 93762

Date of Examination: 12-05-2026

Time: 3 Hrs. Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each. students have to attempt any FIVE questions.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise FOUR questions AND students have to attempt any TWO questions. Each question carries FIFTEEN marks.

## SECTION-A

1.**Answer briefly:**

(a) Define clinical pharmacy. List any two daily activities of a clinical pharmacist.

(b) What is a medication chart review? Why is it important?

(c) Write the normal range for the following:

(i) Blood urea

(ii) Serum creatinine

(d) Define adverse drug reaction (ADR). Give one example of a predisposing factor for ADR.

(e) What are the components of a complete patient case history?

(f) List any four common medical abbreviations used in clinical practice.

(g) What is the purpose of a drug information centre?





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## SECTION-B

2.Explain the role of a clinical pharmacist in ward round participation. How does it contribute to patient care?

3.Describe the systematic approach to answering a drug information query.

4.Discuss the classification of adverse drug reactions with suitable examples.

5.What is patient counselling? Explain the key steps involved in the patient counselling process.

6.How are hematological tests (Hb, TLC, DLC, platelets) interpreted in the evaluation of disease states?

7.Explain the concept of drug utilization evaluation (DUE). Describe its importance in a hospital setting.

8.Write a short note on quality assurance of clinical pharmacy services.

9.Discuss the role of a pharmacist in obtaining a medication history interview.

## SECTION-C

10. (a) Draw and explain the structure of a typical patient case history.

(b) Describe the role of a clinical pharmacist in detecting, assessing, and monitoring ADRs. Mention any one causality assessment scale used.

11. Discuss in detail the various clinical laboratory tests used in the evaluation of:

(a) Liver function (any three tests with interpretation)

(b) Renal function (any two tests with interpretation)

(c) Cardiac disorders (any one test with interpretation)

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Total No. of Questions : 12

Pharm.D. (Post Baccalaureate) (Sem.–4)

# CLINICAL PHARMACY

Subject Code : PD403T-19

M.Code : 78149

Date of Examination : 12-05-2026

Time : 3 Hrs.  Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contains SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly :**

a) Define drug utilization evaluation and review.

b) Define and enlist various pulmonary function tests.

c) What is the significance of patient case history?

d) Enlist primary, secondary and tertiary sources of data.

e) Define and enlist various liver function tests.

f) Define pharmacist intervention and pharmaceutical care.

g) What is the role of poison information specialists in drug and poison information centre?

## SECTION-B

2. Briefly describe common medical abbreviations and terminologies used in clinical practice.

3. Briefly describe about cardiac biomarkers and its significance.





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4. Classify and describe various resources of drug information with suitable examples.

5. Describe the significance and role of Pharmacist in drug therapy monitoring.

6. Describe stepwise approach of patient counseling.

7. Briefly describe various renal function tests for checking glomerular function.

8. Differentiate between medication order review and clinical review.

9. Briefly describe various techniques for planning Pharmaceutical Care.

## SECTION-C

10. Describe the goal and objectives and structure of pharmacovigilance program of India (PvPI).

11. Describe the organization and functions of drug and poison information center.

12. Describe lab function tests for diagnosing acute and chronic liver disorders.

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Total No. of Questions: 12

Pharm.D. (Post Baccalaureate) (Sem.-4)

**PHARMACOTHERAPEUTICS-III**

Subject Code: PD401T19

M.Code : 78147

Date of Examination: 06-05-2026

Time: 3 Hrs. Max. Marks: 70

**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A contains SEVEN questions carrying TWO marks each. Attempt any FIVE.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise of THREE attempts any TWO questions. Each question carries FIFTEEN marks.

## SECTION – A

**1. Write briefly:**

1. Define evidence based medicine.
2. Define headaches.
3. Pain management.
4. Viral hepatitis.
5. Explain narcolepsy.
6. Stroke.
7. Antiepileptic drugs.

## SECTION – B

2. Discuss the Prehospital management of stroke.
3. Discuss the Etiopathogenesis of GERD
4. Write in detail the role of Carbidopa/levodopa and its motor complications in the management of Parkinson's disease.
5. Clinical presentation of a patient with migraine headache.
6. Write a brief note on venous thromboembolism.





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7. Write about the etiology and risk factors for Peptic ulcer disease.
8. Explain in detail Pharmacological management of Alzheimer's disease.
9. Elaborate on the different resources used in practicing evidence based medicine.

## SECTION – C

10. Describe the pathophysiology, clinical manifestations and pharmacotherapy of viral hepatitis including jaundice.
11. Discuss in detail the pathogenesis of peptic ulcer disease. Give an account on clinical signs and symptoms-and investigations involved in diagnosis of peptic ulcer disease.
12. Elaborate on etiology of various types of anemia and treatment of megaloblastic anemia

**NOTE: Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**

Roll No. | | | | | | | | | | |  Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Sem.-04)

PHARMACOTHERAPEUTICS-III

Subject Code : PD401T-19

M.Code : 93760

Date of Examination : 06-05-2026

Time : 3 Hrs.  Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION - A

1. Write short notes on :

a) Define peptic ulcer disease.

b) Write two symptoms of GERD.

c) List two drugs used in the treatment of epilepsy.

d) Mention two types of anaemia.

e) Write two risk factors for Alzheimer's disease

f) Mention two features of schizophrenia.

g) Define neuralgia.

## SECTION-B

2. Explain the pharmacotherapy of drug-induced liver disorders.
3. Describe the etiopathogenesis of peptic ulcer disease
4. Write short notes on venous thromboembolism.
5. Explain the management of Parkinsonism.





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6. Discuss the pharmacological treatment of affective disorders.
7. Describe the pharmacotherapy of anxiety disorders
8. Write short notes on pharmacological management of headaches.
9. Explain the role of evidence-based medicine in clinical decision making.

## SECTION-C

10. Discuss in detail the pharmacotherapy of inflammatory bowel disease.
11. Explain the types, pathogenesis, and management of sleep disorders.
12. Describe in detail the etiopathogenesis and pharmacotherapy of stroke.

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**

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Total No. of Pages : 02

Total No. of Questions : 12

Pharm. D. (Sem.-4)

# HOSPITAL PHARMACY

Subject Code : PD-402T-19

M.Code : 93761

Date of Examination : 09-05-2026

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each. Students have to attempt any FIVE questions.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C contains THREE questions carrying FIFTEEN marks each and students have to attempt any TWO questions.

## SECTION - A

1. **Write briefly :**

a) Define hospital organization.

b) What is hospital formulary?

c) Define inventory control.

d) What is unit dose drug distribution system?

e) Define total parenteral nutrition.

f) What are radiopharmaceuticals?

g) Define continuing professional development.

## SECTION – B

2. Describe the organization and functions of a hospital.
3. Explain the organizational structure of hospital pharmacy including staff and infrastructure.
4. Describe material management in hospital pharmacy.
5. Explain the role and functions of the Pharmacy and Therapeutics Committee (PTC).
6. Describe VED analysis in inventory control.
7. Explain different methods of drug distribution in hospitals.
8. Describe the manufacturing of sterile formulations (large volume parenterals).
9. Explain the handling and packaging of radiopharmaceuticals.

## SECTION – C

10. Discuss hospital pharmacy organization and management including staff, infrastructure, workload statistics, and responsibilities of the pharmacist.
11. Explain hospital drug policy including the formulary system, PTC, and development of therapeutic guidelines.
12. Describe procurement, warehousing, and inventory control techniques (ABC, EOQ, safety stock, lead time) in detail.



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Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Post Baccalaureate) (Sem.–4)

HOSPITAL PHARMACY

Subject Code : PD402T19

M. Code : 78148

Date of Examination : 09-05-2026

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contains SEVEN questions carrying TWO marks each and students have to attempt any FIVE questions.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C contains THREE questions carrying FIFTEEN marks each and students have to attempt any TWO questions.

## SECTION - A

1. Write a short notes on :

   a) Define hospital pharmacist.

   b) What is safety stock?

   c) Define floor stock system.

   d) What is total parenteral nutrition (TPN)?

   e) Define infection control committee.

   f) What is EOQ?

   g) Define continuing professional development (CPD).

## SECTION-B

2. Explain roles and responsibilities of hospital pharmacist.

3. Describe workload statistics in hospital pharmacy.

4. Write short note on hospital budget preparation.





5. Explain hospital formulary and its importance.

6. Describe distribution of narcotic and controlled drugs.

7. Write short note on central sterile supply services (CSSD).

8. Explain manufacturing of tablets and capsules.

9. Write short note on handling and packaging of radiopharmaceuticals.

## SECTION-C

10. Explain inventory control methods including EOQ, lead time, and safety stock.

11. Discuss manufacturing of sterile preparations including large and small volume parenterals.

12. Describe hospital committees (infection, research, ethical) and their roles in patient care.

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Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D. (Sem–5)

# CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING

Subject Code : PD503T-19

M.Code : 90291

Date of Examination : 13-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contains EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contains THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write short note on the following :**

(i) Define binary clearance.

(ii) Describe the formula for finding lean body weight in obese male and female subjects.

(iii) Define therapeutic drug monitoring.

(iv) Define principle of Bayesian theorem.

(v) Define pharmacogenetics. Enlist four drugs that act as metabolic enzyme inducers.

(vi) Describe principle of superposition.

(vii) Define extracorporeal removal of drugs.





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## SECTION-B

2. Draw and explain Siersback-Nielson and Traub and Johnson nomograms for finding renal clearance.
3. Describe methods for population pharmacokinetic data analysis.
4. Describe the significance and methods of dose adjustment in elderly subjects.
5. Describe various methods of estimating creatinine clearance from blood sample.
6. Briefly describe mechanism of drug interactions based on drug metabolism inhibition and induction.
7. Briefly describe genetic polymorphism in drug transporter genes with a suitable example.
8. Describe the pharmacokinetic basis of TDM of Digoxin.
9. Describe methods for population pharmacokinetic data analysis.

## SECTION-C

10. Describe the basis and various methods of dose adjustment in paediatric patients.
11. Describe the genetic polymorphism in drug target genes with suitable examples.
12. Describe pharmacokinetic basis of various drug-drug interactions with suitable examples.

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Roll No. | | | | | | | | | | |  Total No. of Pages :02

Total No. of Questions :12

Pharm.D. (Sem.–5)

# PHARMACOEPIDEMIOLOGY & PHARMACOECONOMICS

Subject Code :PD502T-19

M.Code :90290

Date of Examination : 11-06-2026

Time : 3 Hrs.  Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.
2. SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.
3. SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.

## SECTION-A

1. **Write briefly :**

   (a) Define pharmacoepidemiology.

   (b) Differentiate between defined daily doses and prescribed daily doses.

   (c) Define relative risk and odds ratio.

   (d) Define cohort studies.

   (e) Define quality of life and quality adjusted life years (QALY).

   (f) Define spontaneous reporting.

   (g) Define and enlist various costs and outcomes.

## SECTION-B

2. Define and classify costs and outcomes associated with pharmacoeconomic studies.
3. Discuss outcome measures to analyze prescription data.





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4. Describe overview of prescription event monitoring system.
5. Describe methods of measuring risk in prospective studies.
6. Briefly describe utilization of epidemiologic studies data in determining drug-induced birth defects.
7. Describe use and limitations of case-report and case-series study designs.
8. Describe automated data sources for epidemiologic studies.
9. Describe the role of pharmacoeconomic studies in formulary management decisions.

## SECTION-C

10. Describe various methods of conducting pharmacoepidemiologic studies.
11. Describe designs and methods involved in drug utilization review studies.
12. Describe cost-effectiveness and cost-utility methods of pharmacoeconomic analysis with suitable examples.

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Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D./Pharm.D.(Post Baccalaureate) (Sem.–5)

# CLINICAL RESEARCH

Subject Code : PD501T-19

M.Code : 90289

Date of Examination : 09-06-2026

Time : 3 Hrs. Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A contain SEVEN questions. Attempt any FIVE questions. Each question will carry TWO marks each.**
2. **SECTION-B contain EIGHT questions (Short Essay Type). Attempt any SIX questions. Each question will carry FIVE marks.**
3. **SECTION-C contain THREE questions (Long Essay Type). Attempt any TWO questions. Each question will carry FIFTEEN marks.**

## SECTION-A

1. **Answer the following :**

a) Define double blind method in clinical trials and its importance.

b) What are the differences between monitoring & auditing?

c) Write a note on the objectives of Phase-I clinical trials.

d) Define CRF.

e) Write a brief note on investigator's brochure.

f) Write a note on registration of clinical trials.

g) Write about the role of dosage form in drug development process.

## SECTION-B

2. Discuss the pharmacological approaches to drug discovery.

3. Discuss about randomization in clinical trials and its various types.





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4. Discuss the role and responsibilities of IRB / IEC in clinical trials as per ICH GCP.

5. Describe the procedure of communicating ADR reports & Periodic Safety Update Reports (PSUR).

6. Discuss the process for obtaining permission to conduct clinical trials in India & USA?

7. Write a note on the investigator's responsibility in the conduct of clinical trials.

8. Discuss the role of CDSCO in regulating clinical research in India.

9. Discuss about the purpose and responsibilities of Data Safety Monitoring Board.

## SECTION-C

10. Explain the objectives of various phases of clinical trials and criteria for approval of new drugs by regulatory agencies.

11. Write in detail various components of a clinical trial "protocol". Add notes on protocol amendments.

12. Discuss the types of preclinical studies with regulatory requirements for conduct of studies.

    Discuss various animal pharmacology testing required for discovery of new drugs.

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