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

Total No. of Questions : 12

Pharma. D. (Sem.–1)

PHARMACEUTICAL INORGANIC CHEMISTRY

Subject Code : PD105T-19

M.Code : 78163

Date of Examination :11-12-2025

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. Define errors. Classify them.

   b. What are buffer action and buffer capacity?

   c. What do mean by Ceriometry? Explain its advantage over other oxidizing agents.

   d. Define the principle for the limit test for iron.

   e. How is the ANC of an antacid determined?

   f. Prepare 100 ml of 0.1N hydrochloric acid solution in water. Calculate the amount of acid required in grams. (density of acid = 1.49g/cm^3)

   g. What are reduction and oxidation? Give examples.

SECTION - B

2. Explain $BASO_4$ as radio-opaque contrast media.

3. What is an ionic product of water? Derive Handerson-Hasselbach equation. Give its significance.

4. Discuss the limit test for sulphates.

5. Explain Pharmaceutical aids. Give the various types of pharmaceutical aids with suitable examples.

6. What is neutralization? Discuss the neutralization of Acetic acid using Sodium hydroxide.

7. Define systemic antacids. Why they are limited in use? Explain Sodium carbonate as an antacid.

8. Elaborate potassium bromide as a sedative.

9. How is dental caries formed? Write the formulation of anticaries toothpaste. Discuss sodium fluoride as an anticaries agent.

SECTION - C

10. Explain in detail about acid-base balance in blood. What are the electrolytes used for maintaining the physiological acid-base balance? Discuss in detail about any two of it.

11. Draw a neat diagram of the Arsenic limit test apparatus & explain the procedure and the principle behind it.

12. Explain physiological acid-base balance and its importance. Discuss briefly any five electrolytes used in acid-base imbalance.

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.

Nov 2025

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 :09-12-2025

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. What are hydrocarbons? Classify them.

   b. Define protic and aprotic molecules.

   c. Classify isomers.

   d. Write the chemical equation for the reaction of methyl alcohol and hydrochloric acid.

   e. Comment: amines are more basic than alcohols.

   f. Kolbe's Synthesis

   g. Quantitative test for carbohydrates.

SECTION - B

2. Briefly write a note on the Markownikoff rule. Give example.
3. Give the reaction and mechanism of Perkin's reaction.
4. Briefly write on the polarity of molecules and bonds.

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5. Comment on the acidity of phenols using suitable examples.
6. How does substituent's presence affect carboxylic acid's acidity?
7. Give the reaction and mechanisms of the reaction used for the preparation of salicylaldehyde.
8. Define amino acids. Classify them and give their qualitative tests.
9. Write a note on activating and deactivating ortho, para and meta-directing groups.

SECTION - C

10. Explain the mechanism and reaction involved in

    a. Sandmeyer's reaction,

    b. Hofmatin rearrangement.

11. Discuss the mechanism, kinetics and stereochemistry of Aliphatic nucleophilic substitution with suitable examples.
12. Elaborate on the free radical halogenations reaction in alkenes. Compare free radical substitution with free radical addition.

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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 : 06-12-2025

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) Differentiate between active transport and passive transport.

   b) Give the structure and function of the coenzyme derived from Vitamin B6.

   c) Differentiate between Type I and Type II diabetes.

   d) Comment on glycogen storage diseases.

   e) What is the NADH/NAD coenzyme system?

   f) What do you mean by initiation codon?

   g) Name the test used to diagnose bile pigment metabolic abnormalities in the liver.

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SECTION-B

2. Differentiate glycolysis from the HMP shunt.
3. Classify enzymes according to IUB with suitable examples.
4. Describe the steps and energetics of β-oxidation.
5. Explain the mechanism of oxidative phophorylation.
6. Describe the tests for NPN (non-protein nitrogen) constituents and their diagnostic importance.
7. Discuss the physiological abnormalities generated by defective metabolism of lipids.
8. Describe *de novo* synthesis of purine nucleotides.
9. Describe the principle and diagnostic application of ELISA.

SECTION-C

10. Differentiate between (with reactions) :

    a) Glycogenesis and Glycogenolysis

    b) Ketogenesis and Ketolysis

    c) Transamination and Deamination

11. Describe the liver function tests and their diagnostic applications.
12. Describe the diagnostic application of enzyme and coenzymes with suitable examples.

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

Total No. of Questions : 18

Pharm.D (Sem.–1)

PHARMACEUTICS

Subject Code : PD102T-19

M.Code : 78160

Date of Examination : 04-12-2025

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. **Define the following:**
   a. Posology
   b. Eutectic mixture
   c. Enemas
   d. Tinctures
   e. Young's formula
   f. Suppositories
   g. Incompatibilities

SECTION - B

2. Write down the difference between suspension and emulsion.
3. Mention the classification of incompatibility in detail.
4. Difference between lotion and liniments.
5. Discuss the evaluation test for emulsion.

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6. Brief about development of British Pharmacopoeia.
7. Mention about factors affecting dose selection.
8. What do you know about surgical aids explain with suitable examples?
9. Write a note on types of bases of suppositories with examples.

SECTION - C

10. Discuss in detail about development of Indian Pharmacopoeia.
11. Detail note on method of preparation of suppositories with the help of well labeled diagram.
12. Write down the detailed procedure for preparation of spirits, tinctures andextracts.

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.-1)

HUMAN ANATOMY & PHYSIOLOGY

Subject Code : PD101T-19

M.Code : 78159

Date of Examination : 02-12-2025

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. a) Describe the functions of the pituitary gland.

   b) What are the components of prokaryotic cell?

   c) Define the term "reflex" in the context of the nervous system.

   d) What are the functions of the male and female reproductive systems?

   e) What is the role of the ear in sensory perception?

   f) Define the term "muscle contraction."

   g) What is the role of the nephrons in the urinary system?

SECTION - B

2. Explain how athletic training impacts muscle performance and cardiovascular function?
3. Explain the importance of anatomical planes in understanding the human body.
4. Differentiate between epithelial, connective, muscular and nervous tissues.
5. Explain the process of blood clotting.

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6. Explain the lymphatic system and its functions. Describe the structure and basic functions of the spleen.
7. Explain how blood circulates in the body?
8. Discuss the anatomy and functions of the digestive system. Explain the process of digestion.
9. Discuss the endocrine system and its functions. Explain the role of hormones in the body.

SECTION - C

10. Discuss the structure and functions of bones in the human skeleton. Explain the different types of joints and their movements.
11. Describe the features of thyroid gland. Explain the biosynthesis and functions of thyroid hormones.
12. Explain the anatomy of eye with a neat labelled diagram. Explain about image formation.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 12

Total No. of Pages : 02

Pharm.D (Sem.–2)

PHARMACOLOGY-I

Subject Code : PD204-T-19

M.Code. : 80145

Date of Examination : 10-12-2025

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 the mechanism of action of anticonvulsants?

   b) Define pharmacodynamics and give an example.

   c) Name two drugsacting on the respiratory tract and their functions.

   d) What are neuromuscular blockers? Give an example.

   e) What are psychotropic drugs? Give two examples.

   f) Mention two drugs used for hyperlipidemia and their mechanisms.

   g) Mention two drug interactions and their effects.

SECTION-B

2. Discuss the pharmacology of anti-anginal drugs.

3. Describe the mechanism of action and therapeutic uses of CNS stimulants.

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4. Explain the different factors modifying drug action.

5. What are autacoids? Describe the role of lipid-derived autacoids.

6. Write a short note on myasthenia gravis and the drugs used for its treatment.

7. Write a short note on nasal decongestants and their mechanism of action.

8. Explain the classification and uses of general anesthetics.

9. Discuss the adverse effects and contraindications of oral contraceptives.

SECTION-C

10. Explain the pharmacology of thyroid and antithyroid drugs with their clinical applications.

11. Discuss the classification, mechanism of action and therapeutic uses of antihypertensive drugs.

12. Describe the various routes of drug administration with their advantages and disadvantages.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 12

Total No. of Pages :02

Pharm.D (Sem.–2)

COMMUNITY PHARMACY

Subject Code :PD205T-19

M.Code : 80146

Date of Examination :12-12-2025

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) Define patient counseling.

   b) List any two advisory labels used in pharmacy practice.

   c) What is lead time in inventory control?

   d) Mention two communicable diseases with their causative agents.

   e) Define essential drugs.

   f) State any two principles of pharmaceutical care.

   g) What is rational drug therapy?

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SECTION - B

2. Discuss the role and ethical responsibilities of a community pharmacist.
3. Write a note on pharmacy space layout and design.
4. Explain the parts of a prescription with their importance.
5. Describe the barriers to patient counseling and strategies to overcome them.
6. Discuss EOQ (Economic Order Quantity) method of inventory control.
7. Write a note on OTC medications and pharmacist's role in counseling.
8. Explain health promotion and care for pregnant women and geriatric patients.
9. Discuss the pathophysiology and drug therapy for gastrointestinal disturbances (diarrhea and constipation).

SECTION - C

10. Explain in detail community pharmacy management: staff, materials (coding, stocking) and legal requirements.
11. Write detailed notes on patient information leaflets: contents, design, layout and role in improving medication use.
12. Describe in detail commonly occurring communicable diseases: Typhoid, Hepatitis and AIDS along with prevention.

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

Total No. of Questions :12

Pharm.D (Sem.–2)

PHARMACOTHERAPEUTICS-I

Subject Code :PD206T-19

M.Code : 80147

Date of Examination : 15-12-2025

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 briefly :**

   a) Differentiate between Asthma and COPD.

   b) Define hypertension and list its various etiological factors.

   c) What are the key features of drug induced pulmonary diseases.

   d) Mention the first line therapy for type-2 Diabetes Mellitus.

   e) Explain the pharmacists in rational drug use.

   f) Describe the pathophysiology of CCF.

   g) Define glaucoma and classify the different types of glaucoma.

SECTION-B

2. Explain the pharmacological management of MI.
3. Explain the pharmacotherapeutics of conjunctivitis.
4. Describe the pharmacotherapy of asthma.
5. Explain the pathophysiology of hyperlipidemia and describe the role of statins.
6. Enlist the various pulmonary function tests.
7. Describe the management of thyroid disorders.
8. Explain the management of angina.
9. What are the prescribing considerations for geriatric patients?

SECTION-C

10. Explain the electrophysiology ofheart and state the pharmacological intervention of arrhythmia.
11. Write a note on hormone replacement therapy.
12. Explain the general prescribing guidelines for pregnancy and breast feeding.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 12

Total No. of Pages : 02

Pharm.D (Sem.–2)

PHARMACEUTICAL MICROBIOLOGY

Subject Code : PD202T-19

M.Code : 80143

Date of Examination : 05-12-2025

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 microbiology and name any two major divisions of the microbial world.

   b) What are enriched media? Give one example.

   c) Define Phagocytosis.

   d) Mention onedifference betweenexotoxins andendotoxins.

   e) List two methods used in counting bacteria.

   f) Define Sterilization.

   g) What is the significance of booster dose in immunization?

SECTION-B

2. Explain briefly the classification of microbes.

3. Write a note on nutritional requirements for bacterial growth.

4. Describe any two methods used for isolation and identification of bacteria.

5. Discuss factors affecting the action of disinfectants.

6. Write a short note on antigen-antibody reactions.

7. Explain the principle and procedure of the Widal test.

8. Write a note on microbial assay of Penicillin.

9. Describe the clinical features of Typhoid fever.

SECTION-C

10. Explain in detail various staining techniques used in microbiology and their applications.

11. Describe sterility testing of pharmaceutical preparations and its importance.

12. Write an essay on HIV infection - causative agent, pathogenesis, clinical features and prevention.

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Roll No. | | | | | | | | | | | |

Total No. of Questions : 12

Total No. of Pages : 02

Pharm.D (Sem.–2)

PATHOPHYSIOLOGY

Subject Code : PD-201T-19

M.Code : 80142

Date of Examination : 03-12-2025

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) Describe the etiology and pathogenesis of amyloidosis.

   b) Name the signs and symptoms of angina and discuss their diagnostic significance.

   c) Mention the complications of inflammatory bowel diseases.

   d) Describe the etiology and pathogenesis of tuberculosis.

   e) Explain the pathogenesis of sexually transmitted diseases such as gonorrhea.

   f) Describe the etiology and pathogenesis of leprosy.

   g) Name the signs and symptoms of urinary tract infections and discuss their clinical implications.

SECTION - B

2. Discuss the role of immune tolerance in the pathophysiology of autoimmune diseases.

3. Explain the mechanisms and management of acute myocardial infarction.

4. Describe the environmental factors contributing to protein-calorie malnutrition.

5. Discuss the pathophysiology of stroke, both ischemic and hemorrhagic.

6. Explain the mechanisms of action of drugs used in the management of hypertension.

7. Discuss the histological diagnosis of malignancy and its importance in cancer treatment.

8. Describe the etiology and pathogenesis of malaria and discuss its clinical manifestations.

9. Explain the pathogenesis of chronic renal failure and discuss its management strategies.

SECTION - C

10. Discuss the etiology, pathogenesis and complications of AIDS.

11. Explain the mechanisms of action and clinical uses of drugs used in the treatment of peptic ulcer disease.

12. Describe the pathophysiology of Dengue Hemorrhagic Fever (DHF) and discuss its management approaches.

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

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

Total No. of Questions :12

Pharm.D. (Sem.–3)

PHARMACEUTICAL FORMULATIONS

Subject Code :PD306T-19

M.Code :92170

Date of Examination :13-12-2025

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) Tablet Excipient

   b) Quality control test for capsules.

   c) Ointment bases

   d) Large volume parenteral.

   e) Suspension

   f) Jellies

   g) Tablet Coating

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SECTION-B

2. Write down the concept of pharmaceutical dosage forms.
3. Mention the quality control tests for tablet dosage form.
4. Write about the production and filling of capsule dosage form.
5. Discuss the evaluation test for emulsion.
6. Write methods of evaluation of emulsion.
7. Write a note on container used for parenteral formulations.
8. Classify ophthalmic preparations with factor affecting absorption of skin.
9. Write a note on concept of controlled drug delivery system by taking examples of transdermal and ocular.

SECTION-C

10. Discuss in detail production and filling of hard gelatin capsule.
11. Explain about the container used for parenteral formulation and also, discuss the method of sterilization of paracentral formulations.
12. **Write the followings:**

    a) Quality control test for coating.

    b) Noval drug delivery system with examples.

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Roll No. | | | | | | | | | | |

Total No. of Questions : 12

Total No. of Pages : 02

Pharm.D. (Sem.–3)

MEDICINAL CHEMISTRY

Subject Code : PD305T-19

M.Code : 92169

Date of Examination : 11-12-2025

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 the following :**

   a) What is systemic mycoses?

   b) What is prodrug? Give one example.

   c) What is Polyene antibiotics? Give example.

   d) Write the structure of chloramphenicol.

   e) Name any two drugs used in X- ray contrast media.

   f) Differentiate between

      i. quinolones and quinolone

      ii. Metabolite and antimetabolite.

   g) Write the structure of Atorvastatin.

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SECTION -B

2. a) What are intrinsic and extrinsic pathway in cell apoptosis?

   b) Write the mechanism of action and structure-activity relationships of azole class of antifungal drugs.

3. What are adrenergic system inhibitors? Discuss with examples.

4. What are diagnostic agents? Give a brief account of radio opaques.

5. a) Define hormones and classify them.

   b) Write the synthesis and uses of warfarin.

6. What are folate reductase inhibitors? Discuss the antibacterial synergistic effect of sulphamethoxazole and trimethoprim.

7. a) Write mechanism of action and use of sulphonylureas. Give examples.

   b) Write the synthesis of Nifedipine.

8. Classify antiviral agents. Give the structure and synthesis of Acyclovir.

9. What are vasodilators? Give examples.

SECTION-C

10. a) Classify antibiotics. Explain SAR and mechanism of action of β-lactam antibiotics.

    b) What are β-lactamase inhibitor? Write example.

    c) What are lead molecules? Explain their role in drug discovery.

11. a) Classify antihypertensive agents.

    b) Write a note on antianginal agents. Give the structure of any two antianginal agents.

    C) What are antithyroid drugs? Why are they called goitrogens?

12. a) Write the structure and uses of spironolactone,

    b) Write the SAR of 8-amino quinolones.

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 Questions : 12

Total No. of Pages : 02

Pharm.D. (Sem.–3)

PHARMACEUTICAL JURISPRUDENCE

Subject Code : PD304T-19

M.Code : 92168

Date of Examination : 09-12-2025

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

I. **Answer Briefly :**

a) Give the recommendations of the 'Hathi Committee'.

b) Enlist the Code of Pharmaceutical Ethics in relation to his profession.

c) Define Loan licenses.

d) List out the Ex-Officio Members of PCI.

e) How to dispose of recovered alcohol as per provisions of Medicinal and Toilet Preparations Act?

f) Give four examples of Psychotropic Substances under the NDPS act.

g) Write the objectives of DPCO.

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SECTION-B

2. Explain the procedure for revocation of patents.

3. Describe the facilities to be maintained for experimentation animals under CPCSEA guidelines.

4. What are the objectives of the Drugs and Magic Remedies Act? Give offenses and penalties under the act.

5. Write the constitution and functions of the Narcotic and Psychotropic consultative committee.

6. Give offenses and penalties for medicinal and toilet preparations act.

7. Discuss approval and withdrawal of approval of institutions providing course of study and examination according to the Pharmacy Act.

8. Write the Qualification and Duties of Government Analyst.

9. Briefly mention the code of ethics for pharmacists framed by PCI.

SECTION-C

10. Explain the Registration of pharmacists detailing about first register, qualifications for entry into the first register, subsequent register and removal of name from the register as per the Pharmacy Act.

11. Describe the Publication and examination of the application for patents. Give offenses and penalties patents act.

12. Explain Warehousing of alcoholic preparation as per Medicinal and Toilet preparations act. How alcoholic goods are transported from one warehouse?

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 Questions : 12

Total No. of Pages : 02

Pharm.D. (Sem.–3)

PHARMACEUTICAL JURISPRUDENCE

Subject Code : PD304T-19

M.Code : 92168

Date of Examination : 09-12-2025

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each.
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) Give the recommendations of the 'Hathi Committee'.

   b) Enlist the Code of Pharmaceutical Ethics in relation to his profession.

   c) Define Loan licenses.

   d) List out the Ex-Officio Members of PCI.

   e) How to dispose of recovered alcohol as per provisions of Medicinal and Toilet Preparations Act?

   f) Give four examples of Psychotropic Substances under the NDPS act.

   g) Write the objectives of DPCO.

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SECTION-B

2. Explain the procedure for revocation of patents.
3. Describe the facilities to be maintained for experimentation animals under CPCSEA guidelines.
4. What are the objectives of the Drugs and Magic Remedies Act? Give offenses and penalties under the act.
5. Write the constitution and functions of the Narcotic and Psychotropic consultative committee.
6. Give offenses and penalties for medicinal and toilet preparations act.
7. Discuss approval and withdrawal of approval of institutions providing course of study and examination according to the Pharmacy Act.
8. Write the Qualification and Duties of Government Analyst.
9. Briefly mention the code of ethics for pharmacists framed by PCI.

SECTION-C

10. Explain the Registration of pharmacists detailing about first register, qualifications for entry into the first register, subsequent register and removal of name from the register as per the Pharmacy Act.
11. Describe the Publication and examination of the application for patents. Give offenses and penalties patents act.
12. Explain Warehousing of alcoholic preparation as per Medicinal and Toilet preparations act. How alcoholic goods are transported from one warehouse?

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.–3)

PHARMACEUTICAL JURISPRUDENCE

Subject Code : PD304T-19

M.Code : 92168

Date of Examination : 09-12-2025

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each.**
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) Give the recommendations of the 'Hathi Committee'.

   b) Enlist the Code of Pharmaceutical Ethics in relation to his profession.

   c) Define Loan licenses.

   d) List out the Ex-Officio Members of PCI.

   e) How to dispose of recovered alcohol as per provisions of Medicinal and Toilet Preparations Act?

   f) Give four examples of Psychotropic Substances under the NDPS act.

   g) Write the objectives of DPCO.

SECTION-B

2. Explain the procedure for revocation of patents.

3. Describe the facilities to be maintained for experimentation animals under CPCSEA guidelines.

4. What are the objectives of the Drugs and Magic Remedies Act? Give offenses and penalties under the act.

5. Write the constitution and functions of the Narcotic and Psychotropic consultative committee.

6. Give offenses and penalties for medicinal and toilet preparations act.

7. Discuss approval and withdrawal of approval of institutions providing course of study and examination according to the Pharmacy Act.

8. Write the Qualification and Duties of Government Analyst.

9. Briefly mention the code of ethics for pharmacists framed by PCI.

SECTION-C

10. Explain the Registration of pharmacists detailing about first register, qualifications for entry into the first register, subsequent register and removal of name from the register as per the Pharmacy Act.

11. Describe the Publication and examination of the application for patents. Give offenses and penalties patents act.

12. Explain Warehousing of alcoholic preparation as per Medicinal and Toilet preparations act. How alcoholic goods are transported from one warehouse?

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

Total No. of Questions : 12

Pharm.D. (Sem.–3)

PHARMACEUTICAL JURISPRUDENCE

Subject Code : PD304T-19

M.Code : 92168

Date of Examination : 09-12-2025

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of SEVEN questions carrying TWO marks each.**
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) Give the recommendations of the 'Hathi Committee'.

   b) Enlist the Code of Pharmaceutical Ethics in relation to his profession.

   c) Define Loan licenses.

   d) List out the Ex-Officio Members of PCI.

   e) How to dispose of recovered alcohol as per provisions of Medicinal and Toilet Preparations Act?

   f) Give four examples of Psychotropic Substances under the NDPS act.

   g) Write the objectives of DPCO.

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SECTION-B

2. Explain the procedure for revocation of patents.

3. Describe the facilities to be maintained for experimentation animals under CPCSEA guidelines.

4. What are the objectives of the Drugs and Magic Remedies Act? Give offenses and penalties under the act.

5. Write the constitution and functions of the Narcotic and Psychotropic consultative committee.

6. Give offenses and penalties for medicinal and toilet preparations act.

7. Discuss approval and withdrawal of approval of institutions providing course of study and examination according to the Pharmacy Act.

8. Write the Qualification and Duties of Government Analyst.

9. Briefly mention the code of ethics for pharmacists framed by PCI.

SECTION-C

10. Explain the Registration of pharmacists detailing about first register, qualifications for entry into the first register, subsequent register and removal of name from the register as per the Pharmacy Act.

11. Describe the Publication and examination of the application for patents. Give offenses and penalties patents act.

12. Explain Warehousing of alcoholic preparation as per Medicinal and Toilet preparations act. How alcoholic goods are transported from one warehouse?

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

Total No. of Questions : 12

Pharm.D. (Sem.–3)

PHARMACOTHERAPEUTICS-II

Subject Code : PD303T-19

M. Code : 92167

Date of Examination : 06-12-2025

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

1. **Answer briefly :**

   a) Write a note on etiology and treatment of systemic fungal infections.

   b) What are the different types of Psoriasis?

   c) Discuss the risk factors of Gout.

   d) Write a note on the complications of chronic kidney disease.

   e) What is tumour lysis syndrome?

   f) Explain the causative organism and pharmacotherapy of Gonorrhoea.

   g) Briefly discuss about the pharmacotherapy of Scabies.

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SECTION -B

2. Detail of invasion and metastasis in cancer.
3. Write the management for drug induced renal disease.
4. Discuss etiopathogenesis of Syphilis.
5. Explain the guidelines related to the rational use of antibiotics.
6. Management of chemotherapy induced nausea and vomiting.
7. Write about different types of viral infections and their management.
8. Write a note on Respiratory tract infections.
9. Write a note on hemodialysis.

SECTION-C

10. Explain the clinical manifestations and management involved in endocarditis.
11. Explain the pathophysiology of rheumatoid arthritis and add a note on disease modifying antirheumatic drugs.
12. Explain the causes, clinical presentation and treatment for lower respiratory tract infections.

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

Total No. of Questions : 12

Pharm.D (Sem.–3)

PHARMACEUTICAL ANALYSIS

Subject Code : PD-302T-19

M.Code : 92166

Date of Examination : 4-12-2025

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. **Answer briefly :**

   a) Define Ilkovic's equation.

   b) Differentiate between diffusion current and limiting current.

   c) Write down the significance of finger print region in IR.

   d) What is red shift in UV?

   e) What is the function of grating monochromators in spectrophotometer?-

   f) Explain factors affecting ion exchange.

   g) Why $CDCl_3$ is used as a solvent in NMR spectroscopy instead of $CHCl_3$?

SECTION-B

2. Discuss in detail about physical properties and factors affecting ion exchange chromatography.

3. Write a detailed note on detectors used in UV-Visible spectroscopy.

4. Elaborate about GLP.

5. Write in detail about paper chromatography.

6. Describe conductometric titration with its applications.

7. What is an electromagnetic spectrum? Name the various spectroscopic methods based on electromagnetic radiations.

8. Discuss principle and applications of DSC.

9. Elaborate instrumentation of IR spectroscopy.

SECTION-C

10. Give an account of principle and applications of gas chromatography.

11. Compare HPLC and HPTLC. Give instrumentation of HPLC and pharmaceutical applications of HPTLC.

12. Define validation explain its types and write in detail about Total quality management.

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Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] Total No. of Pages : 02

Total No. of Questions : 12

Pharm.D (Sem.–3)

PHARMACOLOGY-II

Subject Code : PD-301T-19

M.Code : 92165

Date of Examination : 2-12-2025

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 Thrombolytics.

   b) Give examples of plasma expanders.

   c) What are Antidiuretics?

   d) Give the composition and uses of co-trimoxazole.

   e) What is the mode of action of penicillins?

   f) Write examples of aminoglycosides antibiotics.

   g) What are Immunosuppressants?

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SECTION-B

2. Discuss the pharmacology of anticoagulants.
3. Write a note on cephalosporins.
4. Discuss classification, mode of action and pharmacological uses of antiviral agents.
5. Explain the chemotherapy used for tuberculosis.
6. Write an exhaustive note on anthelmintic drugs.
7. Discuss acute, subacute and chronic toxicity.
8. Explain the various cellular macromolecules.
9. Write a note on DNA replication.

SECTION-C

10. What are diuretics? Discuss their pharmacology in detail.
11. Discuss in detail the chemotherapy of cancer (Neoplasms).
12. Write a detailed note on transcription and transcription factors.

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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 : 12-12-2025

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 bioavailability.

   b) What is the significance of compartment models in pharmacokinetics?

   c) List two factors affecting drug absorption.

   d) What is Michaelis-Menten constant?

   e) Explain drug elimination briefly.

   f) State any two methods of assessment of bioavailability.

   g) What is meant by drug distribution?

SECTION - B

2. Explain the mathematical model used in pharmacokinetics.

3. Describe one compartment open model with suitable diagram.

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4. Discuss the factors causing non-linearity in pharmacokinetics.

5. Explain the absorption of drugs from the gastrointestinal tract.

6. Write about the methods used for bioavailability study protocol.

7. Describe the difference between intravenous bolus and intravenous infusion.

8. Explain the concept and protocol of repetitive intravenous injections.

9. Discuss the statistical moment theory in non-compartmental pharmacokinetics.

SECTION - C

10. Explain in detail the pharmacokinetic compartment models and discuss their application in clinical studies.

11. Discuss the different methods of assessment of bioavailability and critically compare them.

12. Describe non-compartmental pharmacokinetic model and explain how Mean Residence Time (MRT) is estimated for various compartment models?

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Total No. of Questions :12

Total No. of Pages :02

Pharm.D. (Sem.–4)

BIOSTATISTICS AND RESEARCH METHODOLOGY

Subject Code :PD404T-19

M.code:93763

Date of Examination :10-12-2025

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

I. **Write short notes on :**

a) Define Variance.

b) Define Null hypothesis.

c) Calculate mean for 8,5,3,4 and 10.

d) Define degrees of freedom.

e) Name the software's are used in biostatistics.

f) Define power of study.

g) Define Sample size.

SECTION - B

2. Give a brief account of histogram and Pie charts.

3. Write a note on Relative risk and Attributable risk.

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4. **Calculate mean and mode for the given data :**

Class interval	0-5	5-10	10-15	15-20	20-25
Frequency	1	4	10	6	5

5. Describe about salient features of Chi squareTest.

6. ***"How computers are useful in community pharmacy?"*** Justify your answer with examples.

7. Discuss salient features of report writing.

8. Give an account of computerized retrieval.

9. Write a brief note on drug labels and list along with its importance.

SECTION - C

10. a) **Perform Two Way ANOVA for the data :**

Plots of land	Treatment			
	A	B	C	D
I	38	40	41	39
II	45	42	49	36
III	40	38	42	42

For (3,6) d.f. $F_{0.05} = 4.76$; For (6,2) d.f. $F_{0.05} = 19.33$; For (2,6) d.f. $F_{0.05} = 5.14$; For (6.3) d.f. $F_{0.05} = 8.94$; Take the appropriate d.f value and interpret the result.

b) Give a note on Correlation.

11. a) **In the correlation study the following data are obtained :**

	X	Y
Mean	65	67
Standard Deviation	2.5	3.5
Coefficient of correlation	0.8	

Find the two regression equations that are associated with the above values.

b) Describe inventory control and its use in statistics

12. Discuss in detail about computer applications in Pharmacy

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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 : 03-12-2025

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 Gastroesophageal Reflux Disease (GERD).

   b. Mention two complications of peptic ulcer disease.

   c. Name two drugs causing drug-induced liver injury.

   d. What is venous thromboembolism?

   e. List two clinical features of Parkinsonism.

   f. Give two symptoms of anxiety disorders.

   g. What is evidence-based medicine?

SECTION - B

2. Explain the etiopathogenesisof inflammatory bowel disease.

3. Discuss the pharmacotherapy of alcoholic liver disease.

4. Write short notes on viral hepatitis with reference to jaundice.

5. Outline the management of anemia's.

6. Explain the pharmacological treatment of stroke.

7. Discuss the role of antipsychotics in schizophrenia.

8. Describe the pain pathways involved in pain perception.

9. Explain the clinical features and management of sleep disorders.

SECTION - C

10. Discuss in detail the pathogenesis and pharmacotherapy of Alzheimer's disease.

11. Explain the types, clinical features and management of Obsessive Compulsive Disorder (OCD).

12. Writea detailed account of drug-induced blood disorders.

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

Total No. of Questions : 12

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

CLINICAL TOXICOLOGY

Subject Code : PD406T19

M.Code : 78152

Date of Examination :08-12-2025

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 are thegeneral principleinvolve in themanagement ofpoisoning?

   b) Describe the role of supportive care in clinical toxicology.

   c) Define toxicokinetic and its significance in the management of poisoning.

   d) Identify the key clinical symptoms of acute antidepressant overdose.

   e) Whatare the primary clinical symptoms of hydrocarbonpoisoning?

   f) Identify the toxic effects of mushroom poisoning.

   g) Whatare the signs and symptoms of CNS stimulant abuse?

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SECTION-B

2. Discuss the general principles involved in the management of poisoning.

3. Compare and contrast different methods of gut decontamination.

4. Explain the principles of toxicokinetic and how they influence the management of poisoningcases?

5. Discuss the management of acute opiate overdose.

6. Discuss the mechanisms of toxicity, clinical symptoms and management of acute salicvlate poisoning.

7. Write clinical manifestations and treatment strategies for acute paracetamol overdose.

8. Compare the toxic effects and clinical management of ethanol and methanol poisoning.

9. Describe the clinical symptoms and management strategies for acute poisoning with atropine.

SECTION-C

10. Discuss the comprehensive management of acute pesticide poisoning in detail.

11. Explaintheprinciples and practices of elimination enhancement in clinical toxicology. Discuss the role of haemodialysis, hemoperfusion and other techniques in the managementof specific poisonings.

12. Write a detailed discussion on the types of venomous snakes, the composition of their venomand the appropriate first aid and medical treatment protocols.

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Roll No. | | | | | | | | | | |

Total No. of Questions :12

Total No. of Pages :02

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

BIOPHARMACEUTICS AND PHARMACOKINETICS

Subject Code :PD405T19

M.Code :78151

Date of Examination :05-12-2025

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 "total clearance"? What are its units?

   b) What is the difference between drug elimination and excretion?

   c) Mention the pharmaceutical factors influencing drug absorption.

   d) Distinguish between absolute and relative availability.

   e) What are therapeutic equivalent products?

   f) Mention the equation for characterizing plasma drug concentration after oral administration and draw the representative profile.

   g) Differentiate between linear and non-linear pharmacokinetics.

SECTION – B

2. Write a note on drug distribution and protein binding.

3. Write a note on factors influencing drug elimination.

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

5. Explain MRT, MAT and MDT.

6. Explain Km and Vm.

7. Give an overview of a balanced incomplete block bioequivalence design.

8. Write a note on physiological factors influencing drug absorption.

9. What are the advantages of IV bolus administration followed by IV infusion? Mention the equation for this type of drug administration.

SECTION - C

10. Discuss the causes and tests for non-linear pharmacokinetics.

11. Discuss the factors influencing drug clearance.

12. Discuss various bioequivalence designs and mention the advantages and limitations of each.

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Roll No. | | | | | | | | | | |

Total No. of Pages :03

Total No. of Questions : 12

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

BIOSTATISTICS AND RESEARCH METHODOLOGY

Subject Code : PD404T-19

M.Code : 78150

Date of Examination :03-12-2025

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 are the differences between Observational and Interventional Studies?

   b. What are the key characteristics of SPSS statistical software?

   c. What are the key features of pie chart?

   d. Differentiate between Paired and independent t test.

   e. Define the terms 'Level of Significance' and 'Null Hypothesis'.

   f. What is the need for General Ledger system in Community Pharmacy?

   g. What is the purpose of Drug Labels and List in hospital pharmacy?

SECTION - B

2. Write a note on Chi Square test.

3. Describe the various steps in writing a report.

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4. Calculate Mean and Median of following distribution:

X:	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Y:	6	10	15	25	35	50	20

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

6. What are the advantages of Computerized Retrieval System in Pharmacy?

7. What are the properties of Normal Distribution Curve? Discuss deviations from normal distribution.

8. What are the factors that influence sample size? How sample size for simple comparative experiments is determined?

9. Write a note on Mann Whitney U test.

SECTION - C

10. Discuss in detail applications of Computer system in Hospital Pharmacy.

11. **Write notes on:**

    a. Statistical methods in predicting Incidence and prevalence of diseases.

    b. Epi Info statistical software.

12. a. Determine if there is a difference in the mean daily calcium intake for people with normal bone density, osteopenia and osteoporosis at a 0.05 alpha level. The data was recorded as follows:

Normal Density	Osteopenia	Osteoporosis
950	610	490
750	900	650
960	600	710
920	910	640
1000	540	460
820	640	350

b. Two test drugs were subjected to antianxiety activity evaluation in using elevated plus maze. Each group comprising randomly selected 6 mice. Mean time spent in sec. by animals in open arms of EPM was noted. Is there any significant difference exist between tested drugs?

Test Drug I	Test Drug II
13.8	3.6
12.3	3.3
13.2	2.8
15.6	3.9
14.2	4.1
13.8	2.6

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Total No. of Questions : 18

Total No. of Pages :02

Pharm.D. (Sem.–5)

CLINICAL RESEARCH

Subject Code :PD501T-19

M.Code :90289

Date of Examination : 18-11-2025

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

Answer the following :

1. Write briefly about high throughput screening.
2. Write briefly about mutagen city testing.
3. Define drug characterization.
4. Expand ANDA and state its significance.
5. Write the role and responsibilities of sponsor in clinical trials as per ICH GCP.
6. Write briefly about CDSCO.
7. Define IEC and IRB.

SECTION-B

8. Explain the general steps involved in drug development.
9. What is the importance of toxicological evaluation in drug development?
10. Give an overview of the various phases of clinical trials.

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11. Discuss the importance and components of informed consent.
12. Discuss the main components of data management in clinical trials.
13. Discuss the salient features and principles of ICH GCP guidelines.
14. Compare and contrast the regulatory environments of the USA. Europe and India in relation to clinical trials.
15. Describe methods of post – marketing surveillance.

SECTION-C

16. Describe the contents and designing of clinical study protocol and CRF in detail.
17. Explain the preclinical requirements such as pharmacological and toxicological studies before filing an IND application.
18. Describe in detail the composition, responsibilities and procedures of IRB / IEC.

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–5)

CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING

Subject Code :PD503T-19

M.Code :90291

Date of Examination :24-11-2025

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 :**

   a. Define hepatic extraction ratio. Mention two drugs with high extraction ratio.

   b. Define population pharmacokinetics.

   c. Define creatinine clearance. Write four major causes of decreased levels of GFR.

   d. Enlist various indications and contraindications for therapeutic drug monitoring.

   e. Define lean body mass and body mass index.

   f. Define pharmacogenetics and enlist four drugs as candidates for CYP450 isoenzymes related genetic polymorphism.

   g. Define nomogram with suitable example.

SECTION - B

2. Describe methods of determination of creatinine clearance from blood, samples.

3. Describe pharmacokinetic basis of drug-drug interactions.

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4. Describe the significance and methods of dose adjustment in obese subjects.

5. Describe pharmacokinetic models for dose adjustment during extracorporeal removal of drugs.

6. Describe the causes of variability for determining individualization of drug dosage regimen.

7. Describe pharmacogenetic variations attributed to CYP2D6 & CYP3A4 inhibition/induction.

8. Describe the basis of dose calculation for converting from intravenous to oral regimen of drug therapy.

9. Describe the Bayesian adaptive method of dosing.

SECTION - C

10. Describe various indications and protocol for conducting TDM.

11. Describe the concept, need and method of dose adjustment in renal impairment.

12. Describe genetic polymorphism in drug transporter genes with suitable examples.

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.