Code No: E-12418/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, October 2023

Subject: Bio-pharmaceutics and Pharmacokinetics

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write any three differences between active absorption and passive absorption.
2. Describe any three factors affecting distribution of drugs.
3. Define renal clearance.
4. Write a note on excretion of drugs through lungs.
5. Define absolute bioavailability and relative bioavailability.
6. Define C_{max}, t_{max} and AUC?
7. If equation of the curve is $C=30.e^{-0.46t}$ for a drug administered by IV route and following one compartment open model, then calculate its biological half-life.
8. Write Michaelis menten equation.
9. Write formulas for calculating loading dose and maintenance dose.
10. Describe the cause of non-linearity in absorption.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. A 50kg woman was given a single IV dose of an antibacterial drug at a dose level of 6mg/kg. Blood samples were taken at various time intervals. The concentration of the drug was determined in the plasma fraction of each blood sample and the following data was obtained. Assume that it follows one compartment open model. Calculate all possible Pharmacokinetic parameters.

Time (Hrs)	0.25	0.5	1.0	3	6	12	18
Plasma Concentration (mg/ml)	8.21	7.87	7.23	5.15	3.09	1.11	0.4

12. Describe factors influencing distribution of drugs.
13. Describe methods to enhance dissolution rate of drugs.

PART-C

Note: Answer any seven questions **(7 x 5 = 35 Marks)**

14. Discuss about dosage form factors affecting absorption of drugs.
15. Describe tissue permeability of drugs.
16. Explain briefly factors affecting protein-drug binding.
17. Explain conjugation reactions in metabolism of drugs.
18. Discuss about in-vitro dissolution models.
19. Describe estimation of K_m and V_{max} in non-linear kinetics.
20. Derive kinetic parameters for IV bolus administration in Two compartment open model.
21. Describe factors causing non-linearity.
22. A 650mg I.V.dose of a drug is administered to a 65kg subject, the plasma drug concentration was found to decline biexponentially. The equation that best describes the drug kinetics $C=67.e^{-14t}+ 33.e^{-3t}$; C is in mg/lt Calculate the different volumes of distribution Vc,Vp, Vd_{β}, Vd_{area}, Vd_{ss}.

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Code No: E-12417/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, October 2023

Subject: Herbal Drug Technology

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 marks)**

1. Define Herb and Herbal medicine.
2. Classify nutraceuticals with examples.
3. Differentiate Asava and Arista preparations with examples.
4. Give various parameters involved in the evaluation of Churna,
5. Give the significance of authentication of plant material.
6. Explain Fenugreek as health food
7. Give the composition and functions of ASU DCC.
8. What are the objectives of Schedule Z for ASU drugs?
9. Explain raw material of herbal origin used in skin care products
10. Write about natural sweeteners.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain WHO and ICH guidelines for the evaluation of herbal drugs.
12. Describe the role of Ashwagandha and Ginger as a nutraceuticals.
13. Explain the sources and processing of herbal raw materials.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on organic forming.
15. Explain the role of nutraceuticals in CVS disorders.
16. Explain herb-drug interactions of Hypericum and Garlic.
17. Describe biopiracy case of Neem.
18. Explain in detail about bioprospecting.
19. Explain the methods of preparation and standardization of Bhasma.
20. Give the composition and functions of ASU DTAB.
21. Explain the authentication of herbal material.
22. Explain the principle involved in Ayurveda system of medicine.

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Code No: E-12415/PCI

FACULTY OF PHARMACY

B. Pharmacy VI Semester (PCI) (Main & Backlog) Examination, October 2023
Subject: Medical Chemistry-III

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are Monobactams?
2. Write the uses of Neomycin & Oxytetracycline.
3. Write the uses of Clindamycin.
4. Write the uses of Erythromycin & Pyrimethamine.
5. Write the uses of Cycloserine & Ciprofloxacin.
6. Give the uses of Miconazole and Mebendazole.
7. What are folate reductase inhibitors?
8. Write the mechanism of action of Macrolides.
9. Write the applications of prodrugs.
10. Define Partition coefficient, Hammet's electronic parameter.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Write a note on β-lactam antibiotics.
    (b) Write the synthesis and uses of Chloramphenicol.
12. Give the chemical classification of antitubercular drugs. Write the synthesis, mode of action and uses of Isoniazid.
13. Explain mechanism of action and SAR of Sulphonamides and Write the synthesis of Sulfacetamide.

PART - C

Note: Answer any seven questions **(7 x 5 = 35 Marks)**

14. Give a note on chemical degradation of cephalosporins.
15. Write the structure, SAR and uses of Streptomycin.
16. Write the structure, synthesis, mode of action and uses of Dapsone.
17. Give a short note on Prodrugs.
18. Write the structure, synthesis and uses of Chloroquine.
19. Write the structure, synthesis, mode of action and uses of Acyclovir.
20. Give the concept and applications of combinatorial chemistry.
21. Write the structure, synthesis, mode of action and uses of Diethylcarbamazine citrate.
22. Give the structure, synthesis and uses of Metronidazole.

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Code No: E-12419/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main& Backlog) Examination, October 2023

Subject: Pharmaceutical Biotechnology

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Classify the Immunoglobulins.
2. Give a brief note on DNA ligase.
3. Write the difference between toxoid and anti-toxin.
4. Describe in brief about restriction endonucleases.
5. Describe in brief about transposons.
6. Write about storage condition of vaccines.
7. Define Mutation. What are the various types of mutagenic agents?
8. Describe the spargers used in fermentation technology.
9. Give the examples for Class I MHC antigens.
10. Draw the general structure of bacteriophage.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is recombinant DNA technology, Explain the production of Insulin by r-DNA Technology?
12. Write the significance of microbial biotransformation, Explain various methods of biotransformation.
13. Describe fermentative production of Pencillin.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain basic principles of genetic engineering.
15. Explain production and uses of Pencillinase enzyme.
16. Explain in brief about the significance of polymerase chain reaction.
17. Explain in brief about cloning vectors.
18. Explain the structure of any one immunoglobulin.
19. What is hybridoma technology and write its applications.
20. Write in-detail about biosensors used in pharmaceutical industry.
21. Write in detail about preparation of Toxoids.
22. Explain about various plasma substitutes.

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Code No: E-12416/PCI

FACULTY OF PHARMACY

B. Pharmacy VI Semester (PCI) (Main & Backlog) Examination, October 2023

Subject: Pharmacology - III

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 marks)**

1. What are antiemetics?
2. What are expectorants?
3. Define poisoning and list the antidotes used for poisoning.
4. Explain cell cycle.
5. What are the causative organisms of syphilis and gonorrhoea?
6. Define acute and sub-acute toxicity.
7. What are respiratory stimulants?
8. Write about biosimilars.
9. What are causes and symptoms of tuberculosis?
10. Define and classify purgatives.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What are immunosuppressants? Write the MOA, therapeutic uses and adverse effects of inhibitors of cytokine production or action.

12. Discuss the symptoms and treatment of
    (a) Barbiturate poisoning (b) organophosphorous poisoning

13. Classify the agents used in treatment of peptic ulcer disease. Write about the pharmacological actions and therapeutic uses of Ranitidine and Omeprazole.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on cephalosporin antibiotics.
15. Describe the symptoms and treatment of lead poisoning.
16. Explain the disease pathology and therapeutic agents for COPD.
17. Write short notes on urinary tract infections.
18. Mention the MOA, therapeutic uses and adverse effects of Isoniazid.
19. Explain the causes and therapy of peptic ulcer.
20. Write short notes on monoclonal antibodies.
21. List the sexually transmitted diseases and explain any one of them.
22. Discuss the therapy for cough.

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Code No: E-12420/PCI

FACULTY OF PHARMACY

B. Pharm VI-Semester (PCI) (Main & Backlog) Examination, November 2023

Subject: Quality Assurance

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write any three parameters each for GMP and TQM.
2. Define the term quality control.
3. Mention different personal records.
4. What is the importance of a specification for any activity?
5. List different secondary packing materials.
6. What is GLP?
7. Mention different methods to give complaint to an industry.
8. What is SOP?
9. Define the term calibration.
10. Write the scope of validation.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Discuss the details of QbD.
12. Explain the various aspects of premises of a pharmaceutical industry.
13. Write the calibration procedure of a P^H meter.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write short notes on ICH guidelines.
15. Give informative notes on ISO9000 series.
16. Write about maintenance of stores for raw materials.
17. Explain quality control tests for rubber closures.
18. What are the general provisions for GLP?
19. Write about recalling and waste disposal procedures.
20. Explain the contents of master formula record.
21. Discuss on general principles of analytical method validation.
22. Explain good warehousing practice of a Pharmaceutical industry.

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Code No: D-8256/PCI

FACULTY OF PHARMACY

B. Pharmacy VI - Semester (PCI) (Main & Backlog) Examination,
September 2022
Subject: Quality Assurance

Time: 3Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1) What is SOP.? Explain.
2) What is Warehousing? Explain.
3) Explain of specification.
4) What is Sources of impurities? Explain.
5) What is short note on Batch Formula Record.
6) Define ISO 14000
7) Define Quality by design (QbD)
8) Define Quality Assurance.
9) Define GMP.
10) Explain of trend (OOT)

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11) Write briefly about Quality control test for Containers, rubber closures.

12) Define ICH. Explain about ICH Guidelines.

13) Write briefly about importance, scope of validation and types of validation.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14) Write a short note on ISO 9000 series?

15) Write a short note on Total Quality Management (TQM)

16) List out what are the different analytical instrumentation used in the estimation of impurities.

17) Explain about validation master plan.

18) Explain about Personnel responsibilities, training, and hygiene.

19) Describe SOP, Quality audit and Quality Review.

20) Explain about Equipment selection, purchase specifications and maintenance.

21) Explain ISO certification procedure and its advantages?

22) Explain about calibration, qualification & validation.

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Code No.D-8254/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2022

Subject: Biopharmaceutics & Pharmacokinetics

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions: **(10 x 2 = 20 Marks)**

1 What are the different sites of Presystemic metabolism of orally administered drugs?
2 What is Lipinskis rule of five?
3 What are the steps for drug distribution?
4 Define Microconstants and Hybrid constants and write relationship between them.
5 What is Flip-Flop Phenomenon and how it is useful in method of residual?
6 Draw plasma-conc.time profile curve and mention the list of pharmacokinetic and pharmacodynamics, parameters.
7 What is IVIVC and comparison of dissolution profile?
8 What is the difference between Absolute bioavailability and Relative bioavailability.
9 Mention the equation for K12, K21,Vp and Cc.
10 The Vd of Chloroquine is 15000lts and clearance is 15 lts. Calculate the biological half of that drug.

PART- B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11 Define absorption. Write in detail about mechanism of drug absorption with diagram.
12 Explain in detail about Bioequivalence study protocols.
13 Derive Michaelis-Menten equation and how do you estimate Km and V_{max}.

PART- C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14 What is biotransformation. Explain the objectives and phase II reaction with suitable examples.
15 Write notes on
A) Concept of Clearance B) Enzyme induction and Enzyme inhibition
16 Write about significance and kinetics of protein drug binding.
17 Write in detail about physiological barriers of drug distribution.
18 How do you calculate absorption rate constant, Ka by using Wagner Nelson method?
19 Explain the pharmacokinetic parameters of a drug which follows one compartment open model when given by intravenous bolus with relevant mathematical equations.
20 What are the different methods for Assessment of Bioavailability?
21 Write in detail about pH partition hypothesis and its limitation.
22 A 60 kg male received 2mg/kg of a drug orally. The following plasma concentration vs time data is obtained. Assume the drug follows one compartment open model and it is completely absorbed. Calculate all possible pharmacokinetic parameters.

Time(hr)	1	2	3	4	5	6	8	10	12	14
Plasma Conc. (µg/ml)	3.2	7.3	9.1	9.7	9.7	9.2	7.1	5.3	4.0	3.0

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Code No. D-8253/PCI

FACULTY OF PHARMACY

B. Pharmacy VI -Semester (Main & Backlog) Examination, September 2022
Subject: Herbal Drug Technology

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define and exemplify Ayurvedic product and herbal drug preparation.
2. Write principle of Unani system of medicine.
3. Write about Breeder's right.
4. Write composition and functions of ASUDTAB.
5. Write about spirulina as health food.
6. Define asavas and arishtas. Give two examples each.
7. Write about health foods.
8. What is traditional knowledge? Give examples.
9. Write about any two natural binders.
10. Classify nutraceuticals giving examples.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write about principles of integrated pest management. Give a detailed account of biopesticides.
12. Elaborate on the WHO guidelines for assessment of herbal drugs.
13. Write a note on: a) Phytosomes b) Herbal disintegrants.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain about the methods for identification and authentication of herbs.
15. Write a note on preparation and evaluation of bhasmas.
16. Discuss the role of nutraceuticals in the prevention, therapy and management of cancer.
17. Write the role of antioxidants in herbal formulations. Give a brief account of these materials.
18. Write a short note on schedule Z.
19. What is bioprospecting policy? Give an overview of the process of bioprospecting herbs as medicines.
20. Give a brief account of herbal hair dyes.
21. Write a detailed note on herb drug interactions.
22. List objectives of Schedule T.

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Code No: D-8251/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, August - 2022

Subject: Medicinal Chemistry - III

Time: 3 Hours **Max. Marks: 75**

Note: Answer All Questions from Part –A, Any two Questions from Part-B. and Any seven Questions from Part-C

PART – A (10 X 2 = 20 Marks)

1. Write the synthesis, mechanism of action and uses of Metronidazole.
2. Mention any six Quinoline drugs.
3. What are Monobactams? Give examples with one structure.
4. Mention any six ant tubercular agents.
5. Write about the chemical degradation of Penicillins.
6. Mention any six antiviral drugs.
7. What is Cotrimoxazole? Give its uses.
8. Give examples of antifungal antibiotics.
9. What are Macrolides? Give examples.
10. Mention any six anti protozoal agents

PART- B (2 X 10 = 20 Marks)

11. Classify antibiotics based on chemical structure with examples.
12. Write a note on anti tubercular drugs.
13. Classify anti-malarial agents with examples. Give the synthesis, MOA and uses of any one drug.

PART - C (7 X 5 = 35 Marks)

14. Write the synthesis, mode of action and therapeutic uses of Para amino salicylic acid and isoniazid.
15. Discuss the SAR of quinolones.
16. Give the synthesis, MOA and uses of any two anti fungal agents.
17. What are sulfonamides? Give their importance in chemotherapy.
18. Write about antiviral drugs.
19. Give the applications of Prodrugs with examples.
20. Classify anti-tubercular drugs with examples.
21. Write about solid phase synthesis in combinatorial chemistry.
22. Write a note on anthelmintics.

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Code No: D-8255/PCI

FACULTY OF PHARMACY

B. Pharmacy VI – Semester (PCI) (Main & Backlog) Examination,
September 2022
Subject: Pharmaceutical Biotechnology

Time: 3Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1) Define Immobilization. What are the types of immobilization?
2) What is protein engineering?
3) What are DNA ligases.
4) What are nucleases? Explain the types of nucleases.
5) What are vaccines? Enlist types of vaccines.
6) What are Plasma substitutes.
7) What are mutants? Types of mutants.
8) What are foam controlling materials
9) What are transposons.
10) Write the organisms responsible for the production of Amylases and Lipases.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11) Explain the production of insulin by rDNA technology
12) Explain the production of penicillin by fermentation technology
13) What is hybridoma technology? Explain the production of monoclonal antibodies.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14) Explain pBR322 and pUC vectors
15) Write the applications of genetic Engineering in medicine
16) Explain the stability of official vaccines
17) Explain Enzyme linked immunosorbent Assay.
18) What is recombination? Explain general mechanism of recombination.
19) Explain the collection, processing and storage of whole human blood.
20) Explain the preparation of dried human plasma and dried human serum.
21) Explain type I and type II hypersensitivity reactions.
22) Write about IgG and IgE antibodies.

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Code No. D-8178/PCI

FACULTY OF PHARMACY

B. Pharmacy VI Semester (PCI) (BACKLOG) Examination,
February / March 2022

Subject: Herbal Drug Technology

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1 Define herbal medicine and herbs.
2 Define bio pesticide bio insecticide.
3 Write the scope of Nutraceuticals.
4 Define herbal drug interaction with suitable examples.
5 Define herbal formulation with example.
6 Define Phytosomes and Microspheres.
7 Define Bio piracy and patent.
8 Write the constitution of ASU DTAB.
9 Write the scope and future prospectus of herbal drug industry.
10 Define schedule T and write objectives of schedule T.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11 Write an elaborate note on processing of herbal raw materials.

12 Explain in detail about the scope and type of Nutraceutical products available market.

13 Discuss WHO and ICH guidelines for the assessments of herbal drugs.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14 Explain the sources of herbs.

15 Write a brief note on organic farming.

16 Write a note on herb drug interactions with suitable exaples.

17 Explain about the side effects and interactions of Hypericum and Kava-Kava.

18 Write a brief note on flavours in herbal preparations.

19 Write a note on Phytosomes.

20 Explain in detail about Patent and IPR.

21 Give a brief note on Schedule Z.

22 Write a brief note on plant based industries and institutions.

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Code No. D-8180/PCI

FACULTY OF PHARMACY

B. Pharmacy VI Semester (PCI) (Backlog) Examination, February / March 2022

Subject: Pharmaceutical Biotechnology

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all questions: **(10 x 2 = 20 Marks)**

1. What are mutants? Types of mutants.
2. Define Immobilization. What are the types of immobilization?
3. Write the differences between Exonucleases and Endonucleases.
4. What are vectors? Write the ideal properties of vectors.
5. Write few applications of hybridoma technology.
6. What are toxins? Explain the method of conversion of toxin to toxoid.
7. Write the preparation and uses of human fibrinogen.
8. Write about types of aerators in Fermentor.
9. What is protein engineering?
10. Differentiate between prokaryotic and Eukaryotic organisms.

PART - B

Note: Answer any two questions: **(2 x 10 = 20 Marks)**

11. Write differences between HLA and MHC. Discuss the structure and function of MHC.
12. Explain the typical structure of Immunoglobulin with neat labeled diagram and types and functions of Antibodies.
13. What are plasma substitutes? Explain the manufacturing of plasma substitutes and standardization.

PART - C

Note: Answer any seven questions: **(7 x 5 = 35 Marks)**

14. Write a brief notes on Protein Engineering.
15. Explain the working process of polymerase chain reaction.
16. Explain pBR322 and pUC vectors.
17. Discuss the general methods of preparation of vaccines.
18. Explain southern blotting technique.
19. Explain in detail direct and indirect methods of ELISA.
20. What are mutations? Explain the types of mutations.
21. Explain the preparation of dried human plasma and dries human serum.
22. Explain type I and type II hypersensitivity reactions.

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Code No: D-8177/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Backlog) Examination, February 2022

Subject: Pharmacology - III

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from PART-A, and two questions from PART-B, and any seven questions from PART-C.

PART - A (10 x 2 = 20 Marks)

1) What is Circardian thythm?
2) What is carcinogenicity give examples of drugs causing it?
3) What is the treatment for morphine poisoning?
4) What are the adverse effects of tetracyclins.
5) Define laxative. Give examples.
6) What are expectorants? Give examples.
7) Write about appetite suppressant drugs.
8) What are mucolytics. Give examples.
9) What are the adverse effects of penicillins.
10) Define Digestant. Give two examples.

PART - B (2 x 10 = 20 Marks)

11) Write about antibiotics used in cancer.
12) Write about anti tubercular drugs.
13) Classify Antiulcer agents? Write the pharmacology of H_2 antagonists.

PART - C (7 x 5 = 35 Marks)

14) What is biological clock? With some examples explain chronotherapy.
15) Explain the pharmacology of Co-trimoxazole.
16) Write a note on symptoms and treatment of arsenic poisoning.
17) Write the pharmacology of any one class of antibiotics.
18) Write a note on Urinary antiseptics.
19) Classify antiamoebic agents. Add a note on Metronidazole.
20) Classify Anti-tussives. Add a note on Anti-histaminics.
21) Write a note on Bronchodilators.
22) What is an antiemetic? Classify antiemetics.

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Code No: D-8181/PCI

FACULTY OF PHARMACY

B. Pharmacy VI - Semester (PCI) (Backlog) Examination, February / March 2022

Subject: Quality Assurance

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part –A, Any two questions from Part-B. and any seven questions from Part-C

PART – A (10 X 2 = 20 Marks)

1. What is the purpose of ICH guidelines?
2. What are the differences between QA and QC?
3. What is meant by control article and test system in a GLP study?
4. Differentiate between primary and secondary packaging materials.
5. Classify glass as packaging material as per IP
6. What are the objectives of documentation? Give examples of documents.
7. What is the difference between Master Formula Record and Batch Formula Record?
8. Classify the pharmaceutical complaints.
9. What is the difference between qualification and validation?
10. Why an equipment should be calibrated in a lab.

PART - B (2 X 10 = 20 Marks)

11. Define validation and explain the importance of validation.
    What are the different types of validation? Write a note on validation master plan.
12. What are the sources of contamination and mix up in pharmaceutical manufacturing? How one can control this type of problems?
13. Explain good warehousing practices (GWP).

PART - C (7 X 5 = 35 Marks)

14. Explain the ICH guidelines for stability testing.
15. Describe the maintenance of stores for raw materials.
16. Explain the maintenance of sterile areas in pharma industry.
17. Explain the GLP protocol for the conduct of a nonclinical laboratory study.
18. Classify the complaints and write about the evaluation of complaints.
19. Define and explain the contents of batch formula record.
20. List the parameters for analytical method validation and explain any two in detail.
21. List and explain the different steps in the qualification of equipments.
22. Write a note on distribution records.

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Code No: D-8179/PCI

FACULTY OF PHARMACY

B. Pharmacy VI– Semester (PCI) (Backlog) Examination, February / March 2022

Subject: Bio pharmaceutics and Pharmacokinetics

Time: 3 Hours **Max.Marks:75**

Note: Answer all questions from Part - A, Any two questions from Part - B. And any seven questions from Part - C

PART – A (10 x 2 = 20 Marks)

1. Write Noyes Whitney equation. And explain the terms.
2. Describe the absorption of a drug on rectal administration.
3. Define apparent volume of distribution.
4. Write a note on excretion of drugs through skin.
5. Define absolute bioavailability and relative bioavailability.
6. Define C_{max}, t_{max} and AUC?
7. If equatin of the curve is C=15.e-0.23t for a drug administered by IV route and following one compartment open model, then calculate its biological half – life.
8. Write Michaelis menten equation.
9. Describe hepatic clearance.
10. What are the factors for cause of non-linear kinetics?

PART – B (2x10 = 20 Marks)

11. A dose of 500mg of drug was given intravenously to a patient and following blood data was obtained. Assuming that the drug follows one compartment open model. Calculate all possible pharmacokinetic parameters.

Time (Hrs)	2	4	6	8	10	12	16	20
asma Concentration (μg/ml)	1.83	1.01	0.58	0.33	0.18	0.10	0.031	0.012

12. Describe factors influencing absorption of drugs.
13. Describe renal excretion of drugs.

PART – C (7 X 5 = 35Marks)

14. Discuss about pH-partition hypothesis.
15. Describe the absorption of drugs from extravascular routes.
16. Explain briefly about Kinetics of protein binding.
17. Explain biliary excretion of drugs.
18. Discuss about methods to enhance bioavailability of poorly soluble drugs.
19. Describe estimation of K_m and V_{max} in non-linear kinetics.
20. Derive kinetic parameters for IV bolus administration in Two compartment open model.
21. How do you determine absorption rate constant, Ka by Wagner nelson method?
22. A 650mg I.V. dose of a drug is administered to a 65kg subject, the plasma drug concentration was found to decline biexponentially. The equation that best describes.
    The drug kinetics $C=67.e^{-14t} + 33.e^{-3t}$; C is in mg/it Calculate the different volumes of distribution Vc, Vp, Dd_{β}, Vd_{area}, Vd_{ss}.

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Code No: 12288/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2021

Subject: Biopharmaceutics and Pharmacokinetics

Time: 2Hours **Max. Marks: 75**

Note: Answer any Seven Questions from Part –A, Any One Questions from Part-B.and Any Five Questions from Part-C

PART – A (7X3 = 21 Marks)

1) Define biopharmaceutics
2) Mention factors affecting Ahsorption
3) Differentiate Passive transport and Active transports.
4) Define Absolute bioavailability and relative bioavailability.
5) List the factors affecting elimination of drugs.
6) Explain Flip-flop method in Extra vascular administration.
7) What is apparent volume of drug distribution
8) Write the equation for calculating steady state drug concentration for one compartment open model.
9) What is proties binding. How it affects bio availability
10) Expand the terms: i. AUC, ii. Vd iii. $t_{1/2}$ iv. Ka v. Kθ vi. CLR

Part - B (1 x 14 = 14 Marks)

11) Write about in-vitro drug dissolution models.
12) How do you estimate the pharmacokinetics parameters (K max and V max) by using Michaelis – Menton equation.
13) Discuss about factors influencing absorption of drug in GIT

Part - C (5 x 8 = 40 Marks)

14) Write a note on Carrier mediated transport.
15) Describe about the physiological barriers to the distribution of drugs. Any three.
16) Explain the biliary excretion of drugs.
17) Explain the various methods for assessment of bioavailability.
18. Discuss in-Vitro-in-Vivo correlation
19. Explain kinetics of protion binding
20. Write in detail about compartment models.
21) Write a note on non-linear pharmacokinetics.
22) Explain methods of adjustment of dose and dosage regimen in patients with hepatic failure

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Code No: 12287/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (Main & Backlog) Examination, September 2021

Subject: Herbal Drug Technology

Time: 2 Hours **Max. Marks: 75**

Note: Answer any seven questions from Part-A, any one question from Part-B and any five questions from Part-C.

Part – A (7 x 3 = 21 Marks)

1 Define “IPR” and “Bioprospecting”
2 Write about curcumin
3 Explain soxhlet extraction
4 Differentiate conventional and organic farming
5 Write about any two microbial pesticides
6 Write composition and functions of ASUDCC
7 What are churnas & bhasmas
8 Write about guar gum and saffron
9 Write the underlying principle of homeopathy
10 What are the methods for authentication of a herb

Part – B (1 x 14 = 14 Marks)

11 Write a detailed account of the guidelines for stability testing of herbal drugs.
12 Write a note on: (a) Vitamins as antioxidants (b) Schedule Z.
13 Write a short note on (a) Herbal drug industry (b) Traditional Knowledge

Part – C (5 x 8 = 40 Marks)

14 Write a note on the role of nutraceuticals in the prevention and management of cardiovascular diseases.
15 Write about pharmacokinetic herb drug interactions with examples.
16 Present an overview of good agricultural practices.
17 Write an account of plant based research institutes in India.
18 What is bio piracy? Discuss any three bio piracy cases in India.
19 Classify herbal excipients. Write in detail about naturally derived thickening agents.
20. Write the method of preparation and standardization of churnas.
21. Discuss various methods used for processing of herbal materials.
22. Write a note on omega fatty acids and resveratrol.

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Code No: 12285/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main &Backlog) Examination, September 2021

Subject: Medicinal Chemistry-III

Time: 2 Hours **Max. Marks: 75**

Note: Answer any seven questions from Part –A, Any one questions from Part-B and Any five questions from Part-C

PART – A (7X3 = 21 Marks)

1. Define & classify β - lactam antibiotics?
2. Write the structure of Benzly pencillin & Chlortetracycline?
3. Write the structure and uses of Strptomycin?
4. Write the structure of Isoniazid & Para amino salicylic acid?
5. Write the structure and uses of Dapsone?
6. Define Partition coefficient, Hammet's electronic parameter?
7. Write the mechanism of action of Tetracyline?
8. Write the mechanism of action of Macrolides?
9. Define prodrugs?
10. Write the β - Lactamase inhibitors?

PART- B (1 X 14 = 14 Marks)

11. Enumerate the various classes of antitubercular drugs. Write the synthesis & mode of action of Isoniazid?
12. Define Beta lactam antibiotics and explain the classification, SAR and mode faction of cephalosporins?
13. Write the life cycle of malaria parasite and Write the synthesis and mode of action of the Chloroquine?

PART - C (5 X 8 = 40 Marks)

14. Write the chemical degradation of pencillin?
15. Write the SAR and uses of Tetracycline?
16. Write the structure, synthesis, mode of action and uses of Chloramphenicol?
17. Write a note on Prodrugs?
18. Write the structure, synthesis, mode of action and uses of Nitrofurantion?
19. Write the mode of action and SAR of Sulphonamides?
20. Write a short note on combinatorial chemistry?
21. Write the structure, synthesis, mode of action and uses of Miconazole?
22. Write the structure, synthesis, mode of action and uses of Mebendazole?

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Code No: 12289/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2021

Subject: Pharmaceutical Biotechnology

Time: 2 Hours **Max. Marks: 75**

Note: Answer any Seven Questions from Part –A, Any One Questions from Part-B. and Any Five Questions from Part-C

PART – A (7X3 = 21 Marks)

1. Define the following:
   i) Biotechnology ii) Enzyme immobilization
2. Write the components of Biosensors
3. Write significance of enzyme acting on DNA
   i) Restriction end nucleases ii) S1 nuclease
4. Enumerate types of cloning vectors. Add a note on COSMID as vector
5. What is active immunity?
6. Write stability tests defined for official vaccines
7. Give applications involved in Southern blotting technique
8. How will you transfer gene by conjugation method
9. How to control foam during fermentation?
10. Mention six enzymes

PART- B (1 X 14 = 14 Marks)

11. Give the principle of rDNA technology along with significance of enzymes. Enlist and explain various methods of screening the recombinants.
12. Define vaccine. Write the method of preparation and quality control of bacterial vaccine
13. Discuss production of Penicillin by fermentation process.

PART - C (5 X 8 = 40 Marks)

14. Enlist methods of immobilization of enzymes. Add a note on applications of enzyme Immobilization
15. Explain the applications of Biosensors
16. Write a brief account on production of insulin by rDNA technology
17. Differentiate between 'type II Hypersensitivity' the 'type III Hypersensitivity'.
18. Give role of HAT medium in monoclonal antibody production
19. Write short notes on ELISA technique
20. Differentiate between prokaryote and Eukaryote
21. Describe components and working of fermentor
22. Write short note on vitamin B12 Production by fermentation

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Code No. 12286 / PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2021

Subject: Pharmacology - III

Time: 2 Hours **Max. Marks: 75**

Note: Answer any seven questions Part – A, any one question from Part – B and any five questions from Part – C.

PART – A (7 x 3 = 21 Marks)

1 What are antiemetics?
2 What are nasal decongestants?
3 Differentiate between purgatives and laxatives.
4 Define the following terms
a. Circadian rhythm b. circannual rhythm
5 What are fluoroquinolones? Give examples.
6 Enumerate various antidotes available.
7 Define Chronotherapy and write its applications.
8 Write a note on appetite suppressants.
9 What are the cholinesterase reactivators? Give examples.
10 How do carminatives act?

PART- B (1 x 14 = 14 Marks)

11 Classify the agents used in treatment of peptic ulcer disease. Write about the pharmacological actions and therapeutic uses of Ranitidine and Omeprazole.
12 Write the MOA, adverse effects and therapeutic uses of Reverse transcriptase inhibitors and cisplastin.
13 Explain the cell cycle. What are fluoroquinolones? Explain their MOA, therapeutic uses and adverse effects.

PART- C (5 x 8 = 40 Marks)

14 Explain the MOA and adverse effects of aminoglycosides and penicillins.
15 Write short notes on the pharmacology of H_2 receptor blockers.
16 Discuss the symptoms and treatment of heavy metal poisoning.
17 Write a note on antimalarial drugs.
18 What are protein based drugs? Write short notes on them.
19 Write about urinary tract infections.
20 Classify antifungal drugs. Write the MOA and adverse effects of amphotericin.
21 Discuss the symptoms and treatment of barbiturate poisoning.
22 What are immunosuppressants? Classify them.

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Code: 12290/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2021

Subject: Quality Assurance

Time: 2 Hours **Max. Marks: 75**

Note: Answer any seven questions from Part – A, and one question from Part – B, and any five questions from Part – C.

PART – A (7 X 3 = 21 Marks)

1. Define Quality Assurance and Quality Control.
2. State following ICH guidelines stands for
   (a) Q7 (b) Q1A (c) Q2 (d)Q1D
3. Give difference between ISO 9000/ISO 14000.
4. What is compulsory recall & voluntary recall.
5. Name Quality control tests for Rubber closure.
6. Define Quality by design and state its advantages.
7. Name different plant layouts with example.
8. When revalidation is done?
9. What are steps of Equipment validation.
10. Define LOD & LOQ and give its equations.

PART – B (1 x 14 = 14 Marks)

11. Define process validation and write in detail about types of process validation.
12. Write a short note on scheduled M.
13. Explain in detail Quality Audits.

PART - C (5 x 8 = 40 Marks)

14. Write short note on Analytical Method validation.
15. Explain elements of QbD.
16. Explain Harmonisation process of ICH guidelines.
17. Write in-short calibration of pH meter.
18. Explain in detail Quality control tests for glass containers.
19. Write short note on Recall.
20. Describe different elements of TQM.
21. Write a note on NABL accreditation.
22. Describe in short Batch Formula Record and Master Formula Record.

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