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-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. D8176/PCI

FACULTY OF PHARMACY

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

Subject: Medicinal Chemistry - III

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

PART - A

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

1. Define & classify β-lactam antibiotics?
2. Write the structure of Sulbactam & Monobactam?
3. Give the structure and uses of Neomycin?
4. Write the structure of Pyrazinamide & Isoniazid?
5. Write the structure and uses of Dapsone?
6. Define Partition coefficient, Tafts steric parameter?
7. Write the mechanism of action of Tetracyclines?
8. Write the mechanism of action of Macrolides?
9. Define prodrugs?
10. Write the structure and uses of Clindamycin?

PART - B

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

11. Write the various classes of antitubercular drugs. Write the synthesis & mode of action of Para amino salicylic acid?
12. Write the life cycle of malaria parasite and Write the synthesis and mode of action of the Chloroquine?
13. Write the mode 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. Write the chemical degradation of Pencillins?
15. Explain the mode of action, SAR and uses of Cephalosporins?
16. Give the structure, synthesis, mode of action and uses of Chloramphenicol?
17. Write a note of Prodrugs?
18. Give the various classes of Antifungal agents & write the synthesis of Miconazole?
19. Write the synthesis, mode of action and uses Diethylcarbamazine citrate?
20. Give a note on liquid phase synthesis in combinatorial chemistry?
21. Write the structure, synthesis and uses of Tolnaftate?
22. Give the various classes of Anti-protozoal agents & write the synthesis of Metronidazole?

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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-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-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: 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. 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 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 & bhasmasWrite about guar gum and saffron
8 Write the underlying principle of homeopathy
9 What are the methods for authentication of a herb

Part – B (1 x 14 = 14 Marks)

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

Part – C (5 x 8 = 40 Marks)

13 Write a note on the role of nutraceuticals in the prevention and management of cardiovascular diseases.
14 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: 12288/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main & Backlog) Examination, September 2021Subject: Biopharmaceutics and Pharmacokinetics

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

Note: Answer any Seven Questions from Part –A, Any One Questionsfrom 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 withhepatic failure

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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 enzymesPART- 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:12007/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Suppl.) Examination, March 2021

Subject : Medicinal Chemistry-III

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 &classify antibiotics?
2) Write the structure of Sulbactam & Monobactam?
3) Write the structure and uses of Strptomycin?
4) Write the structure of Chloroquine & Ethambutol?
5) Write the structure and uses of Dapsone?
6) Define Partition coefficient, Tafts steric parameter?
7) Write the mechanism of action of Aminoglycosides?
8) Write the mechanism of action of Macrolides?
9) Define prodrugs?
10) Write the mode of action of anti-fungal agents?

Part - B (1 x 14 = 14 Marks)

11) Write 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 Pencillins?

13) Write the mode of action and SAR of Sulphonamides and Write the synthesis of Sulfamethoxaole?

Part - C (5x8 = 40 Marks)

14) Write the chemical degradation of Cephalosporins?
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 Ciprofloxacin?
19) Write the structure, synthesis, mode of action and uses Trimethoprim?
20) Write a short note on combinatorial chemistry?
21) Write the structure, synthesis, mode of action and uses of Tolnaftate?
22) Write the structure, synthesis, mode of action and uses of Mebendazole?

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Code No: 12012/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Suppl.) Examination, March 2021

Subject : Quality Assurance

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 ISO 14000

2 Define Quality by design (QbD)

3 Define Quality Assurance.

4 Define GMP.

5 Explain out of trend (OOT)?

6 What is Warehousing? Explain.

7 Explain on out of specification.

8 What is Sources of impurities? Explain.

9 What is calibration. Why it should be bone for equipment

10 What is SOP.? Explain.

Part - B (1x 14 = 14 Marks)

11 Write briefly about Quality control test for secondary packing materials.

12 Define ICH. Explain about ICH Guidelines.

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

Part - C (5x 8 = 40 Marks)

14 Describe SOP, Quality audit and Quality Review.

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 Write a short note on ISO 9000 series?

20 Explain about Equipment selection, purchase specifications and maintenance

21 Explain ISO certification procedure and its advantages?

22 Write briefly about Quality control test for containers.

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Code No: 12011/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Suppl.) Examination, March 2021

Subject : Pharmaceutical Biotechnology

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 What is biosensor? Write the main components used in biosensor.

2 What is genetic engineering?

3 Explain restriction endonucelases.

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 Write a brief note on plasmids.

10 Differentiate between prokaryotic and Eukaryotic organisms.

Part - B (1 x 14 = 14 Marks)

11 Discuss the structure and function of Major Histocompatability Complex.

12 Explain the typical structure of Immunoglobulin and types of Antibodies.

13 What are plasma substitutes? Explain the manufacturing of plasma substitutes and standardization.

Part - C (5x 8= 40 Marks)

14 Write a brief notes on Protein Engineering

15 Explain the steps involved in PCR.

16 Explain insertion and replacement vectors (Bacteriophage vector)

17 Discuss the general methods of preparation of vaccines.

18 Explain Southern blotting technique.

19 Explain generalized transduction and specialized transduction.

20 What are mutations? Explain the types of mutations.

21 Draw a neat labeled diagram of a typical fermentor.

22 Explain the aeration and agitation process in fermentation.

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Code No. 12010 / PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Suppl.) Examination, March 2021

Subject : Biopharmaceutics & Pharmacokinetics

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

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

PART – A (7x3=21 Marks)

1 Define Noyes and Whitney equation and its application.
2 What is Lipinskis rule of five?
3 Differentiate between plasma protein-drug binding and tissue drug binding.
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 What are the different methods used to calculate the AUC?
7 Define orange book and objectives of bioavailability studies.
8 Difference between Absolute bioavailability and Relative bioavailability.
9 Define Creatinine and how to calculate the Creatinine Clearance
10 If Vd of thiopental is 2000ml.Calculate the amount of drug in the body when plasma concentration is 2µg/ml.

PART- B (1x14=14 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 Vmax.

PART- C (5x8=40 Marks)

14 Write in detail about pH partition hypothesis and its limitation.
15 Write about Gastric emptying rate and Volume of distribution.
16 Significance and kinetics of protein drug binding.
17 What are the factor causing Non-Linearity?
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 Explain various cross over designs in Bioequivalence studies.
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: 12009/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Suppl.) Examination, March 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 What is Tridosha

2 What are Biopesticides

3 Define the term nutraceuticals

4 Write the health benefits of Amla.

5 What are advantages of Herbal Excipients.

6 Define the term Cosmetics.

7 Define the term patent and farmers right

8 What do you mean by evaluation of drugs?

9 List plant based government research institutes in India.

10 Write a note on Biopiracy.

Part - B (1x 14 = 14 Marks)

11 Briefly explain good agricultural practices in cultivation of medicinal plants.

12 What is traditional knowledge. Explain patenting aspects of Traditional knowledge and natural products.

13 Briefly explain the objectives and components of Schedule-T.

Part - C (5x 8 = 40 Marks)

14 List the Ayurvedic formulations and write the preparation of Bhasma.

15 Explain the principles of Siddha system of medicine.

16 Discuss the future prospects of Herbal drug industry.

17 Write a detailed account of case study of Neem and Curcuma.

18 Write the methods of stability testing of herbal drugs.

19 Write note on herbal binders and diluents.

20 Write the possible side effects and interactions of garlic and pepper.

21 Write the role of Honey and Alfa alfa as health food.

22 Write about pest management in medicinal plants.

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Code:6226/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main) Examination, December 2020
Subject: Quality Assurance

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

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. Define TQM
2. Give difference between Quality Assurance & Quality Control.
3. State the purpose of ICH.
4. Name Quality Control tests for glass containers.
5. Name different parameters of Analytical method validation.
6. Name any four responsibilities of Quality control people.
7. Mention classification of Recall.
8. What is qualification and validation .
9. Enlist the scope for validation.
10. Give the principles of NABL accreditation.

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. a) Define Quality by Design.
    b) Write in detail note on QbD.
12. Write a short note on plant layout with example.
13. Explain Good Warehousing practices.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Write in detail Equipment Validation.
15. Draw cause and effect diagram for tablet manufacturing process.
16. Write in detail parameters to be checked in Quality Audit.
17. Write short note on ISO 9000.
18. Explain in short Good Laboratory practices.
19. Explain steps involved in complain handling.
20. Explain the term “validation Master Plan”.
21. What is forced degradation stability study? Explain in short.
22. Write a note on Quality Management System.

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Code No: 6225/PCI

FACULTY OF PHARMACY

B.Pharmacy VI-Semester (PCI) (Main) Examination, November 2020

Subject : Pharmaceutical Biotechnology

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

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. Enlist applications of biotechnology to pharmaceutical industry.
2. Describe the terms biosensor and bioreactor.
3. Write significance of enzyme acting on DNA.
   i) Polymerase ii) Ligase
4. Describe the importance linkers and adapters.
5. What is toxoid. Give examples
6. What are plasma substitutes?
7. Define the following :
   i) Immunoblotting ii) Immuno suppression.
8. How will you transfer gene by transduction method?
9. Define fermentation.
10. Write six enzymes.

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. Explain benefits of recombinant DNA products. Write a detailed account on human insulin production by rDNA technology
12. What is Hybridoma technology? Explain the steps involved in the production of monoclonal antibodies and applications.
13. Describe Microbial biotransformation and its pharmaceutical applications.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Explain the concept of enzyme immobilization. Comment on its applicability with suitable examples.
15. Write short notes on production of amylase.
16. Write short notes on interferon production by rDNA technology.

…2

17. Write a short note on PCR.
18. Differentiate between humoral mediated immunity and cell mediated immunity.
19. Give an account of collection, processing & storage of whole human blood.
20. What is solthern blotting? Give details of southern blotting and application.
21. Enlist various criteria to be considered in designing of a fermentor, Draw a neat schematic labelled diagram of fermentor.
22. Write short notes on antibiotic production by fermentation with suitable example.

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Code No: 6221/PCI

FACULTY OF PHARMACY

B.Pharmacy VI-Semester (PCI) (Main) Examination, November 2020

Subject : Medicinal Chemistry - III

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

PART – A

Note: Answer Seven Questions. **(7 X 3 = 21 Marks)**

1. Write the general synthesis of sulfonamides.
2. What are folate reductase inhibitors?
3. Give the mechanism of action of Trimethoprim.
4. Mention any six quinolone drugs.
5. What are Monobactams?
6. Classify antitubercular agents with examples.
7. Mention any six sulfonamide drugs
8. Mention any six antifungal agents
9. Mention any six antiviral drugs.
10. Mention any six antiprotozoal agents?

PART – B

Note: Answer One Question. **(1X14 = 14 Marks)**

11.a) Write a note on B-lactam antibiotics
b) Write a note on tetracyclines.

12.a) Write the classification of antifungal agents
b) Give the synthesis, mechanism of action and uses of any one antifungal drug.

13. a) Write a note on Tetracyclines.
b) Write a note on Anti-protozoal agents.

PART – C

Note: Answer Five Question. **(5X8 = 40 Marks)**

14. Discuss the SAR of semi-synthetic Penicillins.
15. What are prodrugs? Write the classification of Prodrugs based on functional groups.
16. Write the synthesis and mechanism of any two sulfa drugs.
17. Give a note on Artemisinin derivatives.

…2

18. Write the synthesis, mode of action and therapeutic uses of Isoniazid and Para amino salicylic acid
19. Write a note on Anti-HIV drugs.
20. Write the synthesis and mechanism of Diethylcarbamazine citrate and Metronidazole.
21. Write about Quinoline antibiotics.
22. What are β– lactam antibiotics? Write their mechanism of action.

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Code No: 6224/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main) Examination, November 2020

Subject : Biopharmaceutics and Pharmacokinetics

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

PART – A

Note: Answer Seven Questions. **(7 X 3 = 21 Marks)**

1) Mention the factors effecting elimination of drugs
2) List the factors influencing absorption of drugs through GIT
3) Differentiate tissue binding and protein binding.
4) Write the markers used in renal clearance.
5) Define Bioavailability.
6) Expand the terms $i.A \cup C$ ii. $t_{\frac{1}{2}}$, iii. Vd iv. IV v. Ka vi. E_E
7) What is $t_{\frac{1}{2}}$ what is its importance
8) Write the equation for calculating loading dose.
9) What is apparent volume of distribution and its importance
10) What are the factors for cause of non-linear kinetics.

PART – B

Note: Answer One Question. **(1X14 = 14 Marks)**

11) Write about in - vitro drug dissolution models
12) Derive mathematical equations used to calculate Pharmaco-Kinetic parameters following IV bolus administration blood data, assuming that the drug follows two compartment open model.
13) Discuss about protein binding and various factors affecting drug-protein binding.

PART – C

Note: Answer Five Question. **(5X8 = 40 Marks)**

14) Discuss the mechanism of Active diffusion in absorption of drugs.
15) How the organ size and perfusion rate influence the drug distribution?
16) Explain briefly about Kinetics of protein binding.

17) Explain factors affecting the renal excretion of drugs.

18) Discuss about *in vitro-in vivo* correlations

19) A drug has a volume of distribution of 12Lts and elimination rate constant of 0.18hr^{-1} A steady state concentration of 12μg/ml is desred. Assuming one compartment kinetics, calculate time required to reach 99% of Css and infusion rate to achieve desired steady state.

20) Write the significance of different volumes of distribution in two compartment model.

21) Write a note on non-linear pharmacokinetics and Michaelis Mention equation.

22) How do you determine absorption rate constant, Ka by Wagner nelson method.

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Code No:6223/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main) Examination, November 2020

Subject : Herbal Drug Technology

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

PART – A

Note: Answer Seven Questions. **(7 X 3 = 21 Marks)**

1) What is Organic farming.
2) Define the term Herbal medicine as per WHO.
3) Mention any six names of Aycervedic preparations (formulations)
4) What is significance of Herbal excipients
5) Write the health benefits of herbal medicines.
6) Define the term Nutraceuticals
7) List the parameters for evaluation of herbal tablets.
8) Define the term patent and IPR.
9) What is schedule T
10) What are antioxidants and give examples.

PART – B

Note: Answer One Question. **(1X14 = 14 Marks)**

11) Briefly explain the objectives and components of Schedule-T
12) List the Ayurvedic formulations and write the preparation of any three.
13) Explain the WHO guidelines for the assessment of herbal drugs.

PART – C

Note: Answer Five Question. **(5X8 = 40 Marks)**

14) How will you perform selection and identification of herbal materials?
15) Briefly explain the principles of Homeopathic system of Medicine.
16) Write a note on Functional foods and Dietary supplements.
17) Give informative note on Health benefits of nutraceuticals in management of diabetes.
18) What are excipients and give its classification with examples.
19) What are phytosomes? Give its method of preparation.
20) Give a detailed account of case study of neem and curcumin.
21) Explain the objectives and functions of ASU and DCC.
22) Give an informative note on future prospects of herbal drug industry.

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Code No: 6222/PCI

FACULTY OF PHARMACY

B. Pharmacy VI-Semester (PCI) (Main) Examination, November 2020
Subject : Pharamacology - III

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

PART – A

Note: Answer Seven Questions. **(7 X 3 = 21 Marks)**

1) What is asthma. Give four examples of drugs used in Asthma
2) What is ulcer. Give four examples of drugs used in ulcer.
3) What is the treatment for organophosphorus poisoning?
4) What is teratogenicity and give examples of drugs causing teratogenic effects.
5) Define Chronopharmacology.
6) What are the uses of sulfa drugs mention any four sulfa drugs.
7) What is amoebiasis Give any four examples of drugs.
8) What is BCG? What for it is used
9) Give two examples for Bronchiodilators and explain how they work?
10) Define Expectorant. Give two examples.

PART – B

Note: Answer One Question. **(1X14 = 14 Marks)**

11) Classify anticancer agents. Add a note on antimetabolites.
12) Write the symptoms and management of Heavy metal poisoning.
13) Explain the pharmacological role of H_1 and H_2 antihistaminics.

PART – C

Note: Answer Five Question. **(5X8 = 40 Marks)**

14) Write a note on sulfanamides.
15) Explain about Proton pump Inhibitors.
16) Write a note on Immunosuppressant's.
17) Explain the chemotherapy of Anti-TB drug.
18) Write a note on Penicillins.
19) Write a note on ant tubercular agents.
20) Write a note on antimalarial drugs.
21) Write the pharmacology of respirations stimulants
22) What are the different types of rhythms. Explain about circardian rhythm with example.