Code No: E-12175/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4-I Semester (NON-CBCS)(Backlog) Examination, March-2023

Subject: Pharmaceutical Analysis -II (Instrumental Methods of Analysis)

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 X 14 = 70 Marks)**

1. (a) Explain different electronic transitions.
   (b) Discuss instrumentation of UV- visible Spectrophotometer.

2. (a) Define the terms absorption maximum, chromophore and auxochrome.
   (b) Explain the applications of UV_ visible spectroscopy.

3. (a) Write notes on different molecular vibration observed in IR spectroscopy.
   (b) Explain different sample handling techniques of IR spectroscopy.

4. (a) Write about FTIR instrumentation.
   (b) Give the interpretation details of organic compounds using IR spectroscopy.

5. (a) What is the principle of NMR spectroscopy? Write about chemical shift.
   (b) Explain the instrumentation of NMR with a schematic diagram

6. (a) What principle of mass spectroscopy and fluoresce spectroscopy.
   (b) Explain instrumentation of mass spectrometer with a schematic diagram.

7. (a) Write notes on amperometric titrations.
   (b) Write about conductometric titrations.

8. (a) Write brief notes on
   (i) Potentiometry (ii) Nephelometry (iii) Differential Thermal Analysis

9. (a) Explain experimental details of paper chromatography with an example.
   (b) What is electrophoresis? Explain paper electrophoresis.

10. (a) Give experimental details of TLC.
    (b) Write notes on gel electrophoresis.

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Code No: E-12176/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4-I Semester (NON-CBCS) (Backlog) Examination, March-2023

Subject: Medicinal Chemistry-II

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 X 14 = 70 Marks)**

1. (a) Define and classify NSAIDs with minimum two structural examples for each class.

   (b) Classify Pripheral analgesics, outline the structure, synthesis and mode of action of any two drugs.

2. (a) Define Narcotic antagonists with minimum two structural examples in each class.

   (b) Write structure, synthesis and mode of action of Aspirin and Diclofenac.

3. (a) Give a short notes on Sulphonamides.
   (b) Write a note on Tetracyclins.

4. (a) Write a note on Quinolones.
   (b) Write the structure, synthesis and mode of action of Ampicillin & Tinidazole.

5. (a) Write a note on Anti malarial drugs.

   (b) Write structure, synthesis and mode of action of Ethambutol & Dapsone.

6. (a) Write a note on Anti viral agents.
   (b) Write structure, synthesis and mode of action of Metronidazole & PAS.

7. (a) Give a short note on Antipsychotic agents.
   (b) Write structure, synthesis of Haloperidol & Imipramine.

8. (a) Write a note on Antiparkinsonism drugs.
   (b) Write structure, synthesis of Phenytoin & Carbidopa.

9. (a) Write the structure and functional role of Essential Amino acids.
   (b) Write the source, storage and biochemical role of Vitamin A and Vitamin D.

10. (a) Write in detail about development of protein drugs.
    (b) Write the structure and uses of Vitamin C and B6.

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Code No: E-12177/NON-CBCS

FACULTY OF PHARMACY

B. (Pharmacy) 4/4-Year I-Semester (Non -CBCS) (Backlog) Examination, March 2023

Subject: Dosage Formulation and Design (Pharmaceutics-III)

Time: 3 Hours **Max.Marks:70**

Note: Answer any five questions. All questions carry equal marks. (5 x 14 = 70 Marks)

1. (a) Write the importance of preformulation studies in formulation development.
   (b) Write a note on (i) pKa (ii) Polymorphism (iii) Hygroscopicity

2. Write the effect and preventive measures for (i) Hydrolysis (ii) Oxidation (iii) Polymerization on formulation and stability of the products.

3. (a) Write the advantages and disadvantages of sustained action pharmaceuticals.
   (b) Write a brief note on following (i) Drug – complexes
   (ii) Encapsulated slow release granules

4. (a) What is microencapsulation? Write the reasons for encapsulation with examples.
   (b) Explain (i) Air suspension technique (ii) Pan coating method for microencapsulation

5. (a) Discuss various approaches used in development of Transdermal drug delivery systems.
   (b) Write the different methods for preparation of liposomes. Explain physical dispersion methods for preparation of liposomes.

6. (a) Write a note on Mucoadhesives and Occuserts.
   (b) Write the applications of nanoparticles in controlled & targeted drug delivery systems with examples.

7. Define Bioavailability and Bioequivalence. Explain various approaches for enhancement of bioavailability.

8. (a) Define validation. Write about different types of process validation.
   (b) Write the importance of cGMP in Production of Pharmaceutical Products.

9. (a) What is Quality Assurance and Quality control? Write a note on sources and control of quality variation.
   (b) Write a note on Quality assurance of raw materials processing, compounding and Packing materials.

10. (a) Write a brief note on control of records (MFR & BPR)
    (b) Write about Quality Control for variables and attributes.

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Code No: E-12178/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4-I Semester (NON-CBCS) (Backlog) Examination, April-2023
Subject: Pharmaceutical Business Management

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 X 14 = 70 Marks)**

1. (a) Discuss the functions of management at different levels.
   (b) Explain the batch and continuous production planning and mention the benefits.

2. (a) Write the principles of TQM with requirements specified in GMP.
   (b) Write salient features of GSP.

3. (a) Explain the layout for tablet production area.
   (b) Write about documentation records as a part of GMP.

4. (a) Write notes on compartmentalized facilities.
   (b) Write notes on air conditioning systems in Pharmaceutical Industry.

5. (a) Discuss the purchasing procedure of materials.
   (b) Write notes on control of store and store stocks.

6. (a) Explain ABC analysis as a part of inventory control.
   (b) Write the procedure for inspection and issue of materials.

7. (a) Write the policies related to promotion and demotion of an employee in Pharma industry.
   (b) Explain individual and group behaviour psychology characters of an industrial employee.

8. (a) Give different job evaluation and merit rating procedures in a Pharma industry.
   (b) Explain various theories of motivation applied in a Pharma Industry.

9. (a) Describe the role of whole saler and retail in distribution process.
   (b) Explain different concepts of pricing policy.

10. (a) Explain the steps in detailing the physician in sales promotion
    (b) Brief out media planning and publicity for sales promotion.

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18. A dose of 100mg of a drug is administered by rapid intravenous injection to a 70kg healthy adult male. Assume that the drug follows a two-compartment model and can be described by the following equation $C = 45\ e^{-1.7t} + 15\ e^{-0.22t}$ where c = μg/ml; t = hr. Calculate K_{12}; K_{21}; K_{13}; Vc; C_0.
19. A drug whose $K_E = 0.02hr^{-1}$ and V_d = 20Lts is infused to a patient at a rate of 3mg/hr for 8hrs. What is the concentration of the drug in the body 2 hrs after the cessation of the infusion?
20. Write in detail about in vitro drug dissolution 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. D-8346/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4-I Semester (NON-CBCS) Examination, August -2022

Subject: Pharmaceutical Analysis -II (Instrumental Methods of Analysis)

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 X 14 = 70 Marks)**

1. (a) Define the terms absorption maximum, chromophore and bathochromic Shift.
   (b) Write Beer-Lambert's law, deviations to it and reasons for deviations.

2. (a) Discuss instrumentation of UV-Visible spectrophotometer.
   (b) Explain the applications of UV-Visible spectrscopy.

3. (a) Write principle of IR spectroscopy and Hook's law.
   (b) Explain different sample handling techniques of IR spectroscopy.

4. (a) Write about FTIR instrumentation.
   (b) Write notes on characteristic absorption of various functional groups.

5. (a) Write about shielding and deshielding observed in NMR spectroscopy.
   (b) Explain the instrumentation of NMR with a schematic diagram.

6. (a) Write Principle of mass spectroscopy and mention different ions observed in mass spectroscopy. 7M
   (b) Explain instrumentation of mass spectrometer with a schematic diagram.

7. (a) Write notes on measurement of cell potential in potentiometry.
   (b) Write about conductometric titrations.

8. Write brief notes on
   (a) Amperometry (b) Nephelometry (c) Flame photometry

9. (a) Explain experimental details of paper chromatography with an example.
   (b) Give experimental details of TLC.

10. (a) What is electrophoresis? Explain paper electrophoresis.
    (b) Write notes on gel electrophoresis.

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Code No. D-8349/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I Semester (NON-CBCS) (Backlog) Examination, September 2022

Subject: Pharmaceutical Business Management

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1. (a) Discuss goals and objectives of general management of production and Control of a Pharmaceutical Industry.
   (b) Write salient features of ISO19000.

2. (a) Write notes on Management Information System (MIS)
   (b) What are the problems of production and mention the remedies for them

3. (a) Discuss the lay out for sterile or aseptic area.
   (b) Write notes on process flow and work study details for production of tablets.

4. (a) Write notes on compartmentalized facilities.
   (b) Write notes on dust collection systems in Pharmaceutical Industry.

5. (a) Describe store organization and mention the factors to be considered for layout of stores.7M
   (b) Write notes on control of store and store stocks.

6. (a) Discuss the stock accounting procedure of materials in store management.
   (b) Explain the importance of economic order quantity in stores management.

7. (a) Write the policies related to promotion and demotion of an employee in Pharma industry.
   (b) Explain various theories of motivation applied in a Pharma Industry.

8. (a) Give different job evaluation and merit rating procedures in a Pharma industry.
   (b) Explain Hawthrone experiments with regard to Industrial Psychology.

9. (a) Write brief notes on marketing mix of Pharmaceutical business.
   (b) Explain different concepts of pricing policy.

10. (a) Explain product life cycle and its role in marketing.
    (b) Brief out media planning and publicity for sales promotion.

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CODE NO: D-8348/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy IV Year I Semester (NON-CBCS) (Backlog) Examination,

September 2022

Subject: DOSAGE FORMULATION AND DESIGN (Pharmaceutics-III)

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. All questions carry equal marks

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1) a) Write the importance of preformulation studies in formulation development.
b) Discuss the role of P^{ka}, solubility and polymorphism in preformulation studies.

2) Write the effect and preventive measures for hydrolysis, oxidation and polymerization on formulation and stability of the products.

3) a) Write the advantages and disadvantages of sustained action pharmaceuticals.
b) Write a brief note on following sustained release formulations
i) Tabletted Slow release granules **ii)** Drug-complex formulation

4) a) Define microencapsulation. Write the reasons for encapsulation with examples.
b) Enumerate the methods for microencapsulation. Explain Air suspension technique and pan coating method for microencapsulation.

5) a) Discuss various approaches used in development of Transdermal drug delivery systems.
b) Write the different methods for preparation of liposomes. Explain physical dispersion methods for preparation of liposomes.

6) a) Explain the design of Occuserts (Pilo 40 and Pilo 20).
b) Write the applications of nanoparticles with examples.

7) a) Define Bioavailability and Bioequivalence.
b) Explain various approaches for enhancement of bioavailability.

8) a) Define validation. Write about different types of process validation.
b) Write the importance of cGMP in Production of Pharmaceutical Products.

9) a) What is Quality Assurance and Quality control? Write a note on sources and control of quality variation.
b) Write a note on Quality assurance at startup of manufacturing process.

10) a) Write a brief note on control of records.
b) Write about Quality Control Charts for variables and attributes.

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Code No.D-8147/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I Semester (Non-CBCS) (Backlog) Examination,
February / March 2022

Subject: Biopharmaceutics & Pharmacokinetics

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1 (a) Describe different mechanisms of drug absorption.
(b) Explain Noye's Whitney equation.

2 List out various factors affecting the drug absorption. Explain in detail about various biological factors affecting the drug absorption.

3 (a) Explain about kinetics of protein binding of drugs.
(b) Explain in detail about barriers to drug distribution.

4 (a) Discuss the role of protein binding in drug distribution. What components of the plasma proteins are important in binding of drugs?
(b) Explain the factors affecting drug-protein binding.

5 Explain Phase I and Phase II biotransformation reactions.

6 (a) Explain non renal routes of drug excretion and explain the biliary excretion of drugs.
(b) Explain about the concept of clearance.

7 (a) Write in detail about pharmacokinetic drug interaction and its significance in combination therapy.
(b) Explain briefly Cmax, tmax, AUC, half life and volume of distribution.

8 (a) Write the differences between Zero order and First order Kinetics.
(b) Explain the methods of dose adjustment in patients with hepatic failure.

9 (a) Explain the method of residual for calculation of absorption rate constant.
(b) A drug was administered by IV infusion at a rate of 20 mcg/hr. The volume of distribution and elimination rate constant were found to be 10 L and 0.2 hr-1. Calculate steady state concentration achieved by the drug and the loading dose to be administered for achieving steady sate concentration.

10 Ceftriaxone 184mg IV bolus injection provided the following serum levels as a function of time. Assume that it follows one compartmental model. Prepare a semilog plot and calculate all possible pharmacokinetic parameters.

Time(hr)	1	6	12	24	48	72	96	144
Plasma Conc. (mg/ml)	137	120	103	76	42	23	12	3.7

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Code No. D-8146/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4, I –Semester (NON- CBCS) (Backlog) Examination, February / March 2022

Subject: Pharmaceutical Business Management

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1. (a) Write the functions of management at various levels.
   (b) Write the needs for TQM and explain its elements for organizational effectiveness.

2. (a) Write the advantages and disadvantages of compartmentalized facilities.
   (b) Explain procedures of good safety practices in production and quality control.

3. (a) Describe different approaches of air conditioning and dust collection systems.
   (b) Explain GMP requirements for equipment and documentation of records.

4. (a) Write different types of layouts and mention the factors influencing their selection.
   (b) Explain the special Provisions and storage Space requirements in plant layout.

5. (a) What is economic order quantity and its significance in stores management?
   (b) Write in detail about materials purchasing procedure.

6. (a) What is ABC analysis and its role in materials management?
   (b) Write the procedures of receiving, inspection, and issue in drug store.

7. (a) Describe various methodologies of promotion and demotion.
   (b) Explain different merit rating procedures and fixing of remuneration.

8. (a) Describe individual and group behaviours and their role in industrial psychology.
   (b) Explain various theories of motivation.

9. (a) Explain the socio-psychological characteristics of consumer and their role in marketing.
   (b) Write the role of wholesaler and retailer in distribution.

10. (a) Explain product life cycle and its role in marketing.
    (b) Explain different concepts of pricing policy?

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Code No. D-8145/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy IV Year I –Semester (NON-CBCS) (Backlog) Examination, February/March 2022

Subject: Dosage Formulation and Design (Pharmaceutics-III)

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1. (a) What is Preformulation studies? Write its objectives.
   (b) Write the effect of following properties in formulation development
   i) Particle size **ii)** pKa **iii)** Crystallinity **iv)** Polymorphism

2. (a) Write the reasons and preventive measures for **i)** Hydrolysis **ii)** Oxidation
   (b) Write a brief note on accelerated stability testing.

3. (a) Write the advantages and disadvantages of sustained action pharmaceuticals.
   (b) Write a brief note on
   i) Encapsulated Slow release granules **ii)** Drug-complex formulation

4. (a) What is microencapsulation? Write the applications of microencapsulation.
   (b) List the methods for microencapsulation. Explain Coacervation-Phase separation technique and pan coating method.

5. (a) Write the approaches for Transdermal drug delivery systems.
   (b) Explain *in vitro* evaluation of Transdermal patches.

6. (a) What are the different types of ocular drug delivery systems available? Explain the design of occuserts.
   (b) Write the applications of liposomes in pharmacy.

7. (a) Define bioavailability. Discuss various methods for enhancement of bioavailability.
   (b) Write a note on experimental designs used in bioequivalence study.

8. (a) What is validation? Write the importance of validation.
   (b) Write about different types of process validation.

9. (a) What is Quality Assurance and Quality control? Write a note on sources and control of quality variation.
   (b) Write about quality assurance during compounding, packing and labelling.

10. (a) What is statistical quality control? What are the different types of control charts available? Write about QC charts for variables and attributes.
    (b) Write a brief note on
    i) Manufacturing Formula Record **ii)** Batch Production Record.

Code No. D8144/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I Semester (NON-CBCS) (Backlog) Examination, February 2022

Subject: Medicinal Chemistry - II

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1 (a) Write a short note onNarcotic antagonists.
(b) Write the structure, synthesis and uses of the followings.
(i) Diclofenac (ii) Fentanyle.

2 (a) Classify local anesthetics with suitable examples.
(b) Write the synthesis and uses of the following drugs.
(i) LIdocaine (ii) Bupivacaine.

3 (a) Write in detail about anticancer antibiotics with structural examples.
(b) Write the structure and synthesis of 5Flouro Uracil and Methotrexate.

4 (a) Write the SAR of Tetracyclin antibiotics.
(b) Write the synthesis and mechanism of action of Ciprofloxacin and Sulfamethoxazole.

5 (a) Write a short notes on Antihelmentics.
(b) Write the structure synthesis and mode of action of Metronidazole and Diethyl carbamazine citrate.

6 Write the SAR of 7 amino quinolone antimalarials and give the synthesis of Pyrimethamine and Dapsone.

7 (a) Write a short on Antiparkison Drugs.
(b) Write the synthesis and mode of action of Ketamine and Phenytoin.

8 Outline the classification of antipsychotic agents with examples. Write in detail about SAR of phenothiazines.

9 (a) Write the structure and functional role of Essential Amino acids.
(b) Write the structure and uses of Vitamin C and B6.

10 Write the structure, uses and biochemical role of following Vitamins.
(i) Vitamin A
(ii) Vitamin D
(iii) Vitamin E.

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Code No. D8143/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I Semester (NON-CBCS) (Backlog) Examination,
February / March 2022

Subject: Pharmaceutical Analysis – II (Instrumental Methods of Analysis)

Time: 3 Hours **Max. Marks: 70**

Note: Answer any five questions. **(5 x 14 = 70 Marks)**

1 (a) Define the terms absorption maximum, chromophore and auxochrome.
(b) Explain different electronic transitions.
(c) Describe the components of UV-Visible spectrophotometer.

2 (a) Discuss the applications of UV-Visible spectroscopy.
(b) Explain single component analysis with an example using UV-Visible spectroscopy.

3 (a) Write the principle of IR and explain different types of molecular vibrations.
(b) Explain different sample handling techniques used in IR spectroscopy.

4 (a) Explain different IR regions for absorption of various functional groups.
(b) Explain the instrumentation and working of FTIR.

5 Explain the following:
(a) Write the principle and instrumentation of NMR.
(b) Write the principle and instrumentation of Mass spectrometer.

6 (a) What is chemical shift? Write about shielding and deshielding.
(b) Write the description and working of different components of spectroflouorimeter and applications.

7 (a) Write short note on nephelometry and turbidometry.
(b) Explain different types of conductometric titrations.

8 (a) Explain DTA and give its applications.
(b) Write notes on flame photometry.

9 (a) Explain the theory and principles of electrophoresis technique.
(b) Discuss importance of different types of detectors used in gas chromatography.

10 (a) Write the experimental details of paper chromatography.
(b) Give the description and working of HPLC with help of neat labeled diagram.

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Code No. 12220 / Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS)(Backlog) Examination, March 2021

Subject : Pharmaceutical Analysis – II (Instrumental Methods of Analysis)

Time : 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4x17½=70 Marks)**

1 (a) Write about different properties of electromagnetic radiation.
(b) Write the theory and principles of UV spectroscopy.
(c) Explain the concept of chromophore and auxochrome.

2 State and explain Beer's law and describe different components of UV spectro-photometer.

3 (a) Explain the theory of IR spectroscopy and molecular vibrations with reference to linear and non-linear molecules.
(b) Explain different sample handling techniques used in IR spectroscopy.

4 (a) Explain different IR regions for absorption of various functional groups.
(b) About Intensity and position of IR bands.
(c) Write about different types of detectors used IR spectrophotometers.

5 Explain the following:
(a) Shielding and de shielding
(b) Mass analyzers
(c) Properties of fluorescence

6 (a) Write the theory and principles of Mass spectroscopy technique.
(b) Write the description and working of different components of spectrofluorometer and applications.

7 (a) Write short notes on nepheloemetry and turbidometry.
(b) Write the advantages and applications of conductometric titrations.

8 (a) Give the principles of DSC and DTA techniques.
Explain the following:
(b) Nernst equation and calculation of cell potential.
(c) Equivalent, molar conductance and specific conductance.

9 (a) Write the theory and principles of electrophoresis technique.
(b) Write about different types of detectors used in gas chromatography.

10 (a) Write the principles of paper and thin layer chromatography.
(b) Give the description and working of HPLC with help of neat labelled diagram.

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Code No.12219/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (NON-CBCS) (Backlog) Examination, March 2021

Subject: Biopharmaceutics & Pharmacokinetics

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4 x 17 ½ = 70 Marks)**

1. (a) Explain the theories of dissolution with eat labeled diagrams.
   (b) Explain in detail about Carrier Mediated Transport.

2. (a) Explain the formulation factors affecting the absorption.
   (b) Explain the biological factors affecting the absorption.

3. (a) How do you determine binding constants and binding sites by graphical methods.
   (b) Explain the significance of Protem binding of drugs.

4. (a) Describe the process of drug distribution in the body and enumerate the factors affecting it.
   (b) Describe about the physiological barriers to the distribution of drugs.

5. What are the Conjugation reactions? Give examples of each type of Conjugation reaction.

6. (a) Explain the factors affecting the renal excretion of drugs.
   (b) Explain briefly about enterohepatic circulation.

7. (a) Write the different methods used for determining of AUC of blood level time curve of a drug.
   (b) Explain the methods of dose adjustment in patients with hepatic failure.

8. (a) Explain about apparent volume of distri.
   (b) Explain about hepatic clearance.

9. Derive the equations for one compartment open model intravenous infusion. Explain in detail how can the study state drug concentration be achieved more quickly.

10. A single IV dose of an antibiotic was given to a 50kg woman at a dose level of 20mgkg. Blood samples were removed periodically and assayed for parent drug. The following data were obtained. Assume that it follows one compartment open model. Calculate all possible pharmacokinetic Pramerens.

Time (hrs)	0.25	0.5	1.0	2.0	4.0	6.0
Plasma Concentratrion (mg/lit.	4.2	3.5	2.5	1.25	0.31	0.08

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Code No: 12223 /Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS)(Backlog) Examination, March 2021

Subject: Pharmaceutical Business Management

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4 x 17 ½ = 70 Marks)**

1 a. Write the functions of management at various levels.
b. Describe different elements of total quality management.

2 a. Explain batch and continuous production in process planning and mention the benefits and drawbacks.
b. Explain procedures of good safety practices in production and quality control.

3 a. Describe different approaches of air conditioning and dust collection systems.
b. Explain GMP requirements for equipment and documentation of records.

4 a. Write different types of layouts and mention the factors influencing their selection.
b. Explain various general workflow patterns.

5 a. What is economic order quantity and its significance in stores management?
b. Explain storage space requirements and special provisions for storage in drug store.

6 a. What is ABC analysis and its role in materials management?
b. Write the procedures of receiving, inspection, and issue in drug store.

7 a. Describe various methodologies of promotion and demotion.
b. Explain different merit rating procedures and fixing of remuneration.

8 a. Describe individual and group behaviours and their role in industrial psychology.
b. Explain various theories of motivation.

9 a. Explain the socio-psychological characteristics of consumer and their role in marketing.
b. Write the role of wholesaler and retailer in distribution.

10 a. Explain product life cycle and its role in marketing.
b. Describe the role of window and interior display in sales promotion

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Code No: 12222 /Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy4/4 I-Semester (Non-CBCS)(Backlog) Examination, March 2021

Subject: Dosage Formulation and Design
(Pharmaceutics-III)

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4x17½=70 Marks)**

1 (a) Explain the importance of the following in preformulation studies.
(i) Partition coefficient (ii) Dissolution (iii) Crystallinity
(b) Explain the stability Protocol and accelerated stability testing.

2 Explain in detail the importance of preformulation studies in development of solid dosage form.

3 (a) Explain in detail about in vitro evaluation tests of sustained release dosage forms.
(b) What is microencapsulation? Explain about air suspension technique.

4 (a) Explain in detail about various approaches to develop sustained release dosage forms.
(b) Write various applications of microencapsulation in Pharmacy.

5 (a) Write various approaches to develop transdermal therapeutic systems with suitable examples.
(b) Write a note on liposomes.

6 (a) Explain various types of Ocular drug delivery systems.
(b) Explain different methods of preparation on nanoparticles.

7 (a) Explain the methods of assessment of Bioavailability.
(b) Write a note on CGMP.

8 Write various methods to enhance bioavailability.

9 (a) Explain the difference between QA and QC. What are the various sources of variation?
(b) Explain briefly about quality control charts.

10 (a) Discuss the stability testing protocols for various formulation.
(b) Explain briefly about the role of QA in the compounding of tablet dosage forms.

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Code No.12221/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (NON-CBCS) (Backlog) Examination, March 2021

Subject: Medicinal Chemistry - II

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4 X 17 ½ Marks)**

1. (a) Explain the SAR of Local anaesthetics.
   (b) Write the structure, synthesis and uses of the following drugs.
   (i) Diclofenac Sodium (ii) nalaxone

2. (a) Define anti-inflammatory agents. Classify them with minimum two examples.
   (b) Write the synthesis and uses of the following drugs.
   (i) Lidocaine (ii) Pethidine

3. Write the structure, synthesis, mode of action and uses of Chloramphenicol and Cephalexin.

4. Write a note on the following
   (a) Aminoglycoside antibiotics
   (b) Cephalosporins

5. Write the classification of antifungal agents. Write the synthesis and mention the mode of action of Ketoconazole and Fuconazole.

6. (a) Write in detail about anthelmintic drugs.
   (b) Write the synthesis and mode of action of the following drugs.
   (i) Dapsone (ii) Primaquine

7. (a)Write the classification antiparkinsonism drugs.
   (b) Write a note on antipsychotic drugs.

8. (a) Write the synthesis and mode of action of Phenobarbitone.
   (b) Define anticonvulsants and classify them with suitable examples.

9. (a) Write the structure, preparation and biochemical role of Vitamin E and Vitamin B2.
   (b) Write the source, storage and biochemical role of Vitamin A and Vitamin D.

10. Write any three structures of essential amino acids and their role. Write in detail about development of protein drugs.

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Code No.6437/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I - Semester (Non-CBCS) (Backlog) Examination, November 2020

Subject: Dosage Formulation & Design (Pharmaceutics – III)

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4 x 17 $^{1/2}$ = 70 Marks)**

1. (a) Explain flow properties of powder.
   (b) Write about the influence of chemical properties of drug on formulation.

2 Explain various physical properties of drug evaluation during pre formulation study.

3. Explain spray drying and spray congealing technique of micro encapsulation.

4 Describe the concept of sustained release formulations. Mention various types of sustained release products and explain their invitro and invivo evaluation.

5. (a) Give various approaches used in developing transdermal drug delivery systems.
   (b) Explain about characterization of liposomes.

6 (a) Write the formulation and evaluation of occuserts (or) inserts.
   (b) Write various evaluation tests for nanoparticles.

7. (a) Define bioavailability. Explain the methods of enhancing bioavailability.
   (b) Explain the statistical interpretation of bio equivalence study.

8. Explain in detail about Good manufacturing practices (GMP) to be followed in the production of Pharmaceutical dosage borns.

9. (a) Define quality assurance. What are the sources of quality variation?
   (b) Explain quality assurance during packing operation.

10. (a) Write a note on personal and buildings in manufacturing units.
    (b) Explain about the Packing and labeling control procedure in QA.

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Code No.6434/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (NON-CBCS) (Backlog) Examination,
October 2020
Subject: Biopharmaceutics & Pharmacokinetics

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4x17½=70 Marks)**

1. Explain in detail with examples, the importance of pH partition theory to explain Passive absorption of drugs.

2. Describe different mechanisms of drug absorption.

3. (a) Explain the factors affecting drug distribution.
   (b) Explain about kinetics of protein binding of drugs.

4. (a) Explain Perfusion rate limited drug distribution.
   (b) Explain the factors affecting Protein binding.

5. Explain phase I and Phase II biotransformation reactions.

6. (a) Explain about non renal routes of excretion of drug & the factors influencing them.
   (b) Write about factors influencing the metabolism of drugs.

7. (a) Write the differences between zero order kinetics and first order kinetics.
   (b) Write in detail about pharmacokinetic drug interaction and its significance in combination therapy.

8. (a) Explain briefly Cmax, tmax, AUC, half life and volume of distribution.
   (b) Write in detail about pharmaco kinetic drug interaction and its significance in combination therapy.

9. Derive mathematical equations used to calculate pharmacokinetic parameters following IV boly administration blood data, assuming the drug follows one compartment open model.

10. (a) Explain the method of residual for calculation of absorption rate constant.
    (b) The equation that best fits the pharmacokinetics of paracetamol after oral administration of 500mg dose is: $C=1.18(e^{-0.24+} - e^{-1.6+})$. Calculate Tmx and Cmax.

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Code No.6436/NON-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (NON-CBCS) (Backlog) Examination, October 2020

Subject: Medicinal Chemistry - II

Time: 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4x17½=70 Marks)**

1. (a) Explain the SAR of Pethidine analogues.
   (b) Write the structure, synthesis and uses of the following drugs.
   (i) Ibuprofen (ii) Piroxicam

2. (a) Write a short note on Narcotic antagonists.
   (b) Write the structure, synthesis and uses of the following drugs.
   (i) Fentenyl (ii) Bupivacaine

3. What are Beta-Lactam antibiotics? Classify them and write any one of its synthesis and mode of action.

4. Write a note on the following
   (a) Alkylating agents used as antineoplastic agents
   (b) Quinolone antibiotics

5. Enumerate the various classes of anti-tubercular drugs. Write the synthesis and mention the mode of action of INH.

6. (a) Write in detail about antileprotic agents.
   (b) Write the synthesis and mode of action of the following drugs.
   (i) Piperazine citrate (ii) Metronidazole

7. (a)Write the classification of anticonvulsant.
   (b) Write a note on ant parkinsonism drugs.

8. (a) Write the synthesis and mode of action of Ketamine and Chlorpromazine.
   (b) Define sedatives and hypnotics and classify them with suitable examples.

9. (a) Explain in detail about essential amino acids and their functional role.
   (b) Write in detail about development of protein drugs.

10. (a) Write the structure, preparation and biochemical role of Vitamin-A and Vitamin-B1.
    (b) Define Vitamins? Write the source, storage and biochemical role of fat soluble vitamins.

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Code No. 6435 / Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS)(Backlog) Examination, October 2020

Subject : Pharmaceutical Analysis – II (Instrumental Methods of Analysis)

Time : 2 Hours **Max. Marks: 70**

Note: Answer any four questions. **(4x17½=70 Marks)**

1 (a) State and explain Beer's law and write the deviations in its applicability.
(b) Describe different methods for quantitative analysis of single component samples by UV spectrophotometry.

2 (a) Discuss the concept of chromophore and auxochrome and explain various shifts in absorption bands.
(b) Describe different components of UV spectrophotometer with a neat labeled diagram.

3 Enumerate vibrational frequencies of different class of organic compounds and Explain in brief about interpretation of IR spectra of organic compounds.

4 (a) Explain the following :
(i) Hook's law
(ii) Intensity and position of IR bands.
(b) Explain different sample handling techniques used in IR spectroscopy.

5 (a) Write about theory and principles of NMR spectroscopy technique.
(b) Explain the fragmentation rules in interpretation of mass spectrum.

6 Explain the following:
(i) Factors influencing intensity of fluorescence
(ii) Radiative and non-radiative process
(iii) Chemical shift and spin-spin coupling

7 Explain the following:
(a) Equivalent, molar conductance and specific conductance
(b) Effect of dilution on conductance
(c) Describe different Ion-selective electrodes used in potentiometric titrations.

8 (a) Give the principles and applications of DTA technique.
(b) Write the theory and principle involved in flame photometry technique.
(c) Give different types of fuel gases and oxidants used in flame photometry applications.

9 (a) Explain the principles of HPLC technique.
(b) Write about column packing materials and mobile phase solvents used in HPLC technique.
(c) Compare HPLC and HPTLC techniques in applications.

10 (a) Explain the principles and experimental details of thin layer chromatography for Quantitative analysis.
(b) Write about different types of columns used in gas chromatography.

Code No: 6166/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-semester (Non-CBCS) (Backlog) Examination, December 2019.

Subject: Pharmaceutical analysis II
(Inst. Methods of Analysis)

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks

1. a) State and explain beer lamberts law and deviation in its applicability. 4
   b) Describe different methods for quantitative analysis of single component samples by UV spectrophotometry. 10

(OR)

   c) Explain about different types of electronic transitions in organic compounds. 4
   d) Describe different components of UV spectrophotometer with a neat labeled diagram. 10

2. a) Give the principles of IR spectrosocopy. 4
   b) Describe the interpretation of IR spectra of simple organic compounds. 10

(OR)

   c) Explain different IR regions for absorption of various functional groups. 7
   d) Explain different sample handling techniques used in IR spectrosocopy. 7

3. a) Give the description and working of different components of a NMR spectrometer. 7
   b) Explain the principles of fluorescence and Phosphorescence with help of Joblonski diagram. 7

(OR)

   c) Write about different types of ionization techniques used in mass spectrophotometry. 8
   d) Describe the components of Mass spectroscope. 6

4. a) Describe different Ion-selective electrodes used in potentiometric titrations. 7
   b) Write the theory and principle involved in flame photometry technique. 7

(OR)

   c) Give the principles and applications of DTA technique. 7
   d) Write the advantages and application of conductometric titrations. 7

5. a) Explain the principles of HPLC technique. 4
   b) Write about the instrumentation & working of HPLC technique. 10

(OR)

   c) Write the theory and principles of electrophoresis technique. 7
   d) Explain about gel electropharesis. 7

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CODE NO: 6165/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-semester (Non-CBCS) (Backlog) Examination, January 2020

Subject: Bio-Pharmaceutics & Pharmacokinetics

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks

1. a) Explain in detail various physicochemical parameters affecting the drug absorption. 8
   b) Write a note on Carrier medicated transport 6

(OR)

   c) Explain the characteristics and Kinetics of active and passive transport of drug. 14
2. a) Explain in detail about barriers to drug distribution. Add a note on Physico chemical properties influencing the tissue permeability of drug 14

(OR)

   b) Explain significance of protein binding. Write about factors affecting protein binding and explain briefly about Kinetics of protein binding. 14

3. a) What is biotransformation and explain Phase I and Phase II reactions with suitable examples. 14

(OR)

   b) Explain non renal routes of drug excretion and explain the biliary excretion of drugs. 7
   c) Explain about factors affecting the renal clearance. 7

4. a) Write the differences between Zero order and First order Kinetics. 7
   b) Explain the methods of dose adjustment in patients with hepatic failure. 7

(OR)

   c) Explain about AUC, Cmax, tmax. Write the different methods used for determining the AUC of the blood level-time curve of a drug. 7
   d) What are drug interactions? Explain the various types of drug-drug interactions mediated through ADME. 7

5. a) Derive mathematical equations used to calculate Pharmaco-Kinetic parameters following IV bolus administration blood data, assuming that the drug follows one compartment open model. 10
   b) How will you calculate steady state concentration in case of one compartment open model constant IV infusion? 4

(OR)

   c) 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 Pharmaco Kinetic parameters.

Time(hr)	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

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Code No.6169/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS) (Backlog) Examination, January 2020

Subject: Pharmaceutical Business Management

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1. (a) Explain the principles of administrative, bureaucratic and scientific management and write their merits and demerits. 14

OR

(b) Write the challenges of productivity. Explain the roles of process re-engineering, bench marking and total quality management in enhancing productivity. 14

2. (a) Describe different water and air handling systems in pharmaceutical industry. 14

OR

(b) Explain general workflow patterns and dust collection systems in industrial management. 14

3. (a) Describe the factors influencing the location and layout drug store. 14

OR

(b) Explain the purchasing and issue procedures stores management. 14

4. (a) Explain morale and fatigue and mention their significance on performance of personeel. 14

OR

(b) Write different techniques of job evaluation and merit rating. 14

5. (a) Write the roles of distributor, wholesaler and retailers and mention the benefits and limitations. 14

OR

(b) What are qualities of medical representative and mention their role in pharmaceutical marketing and sales promotion. 14

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Code No. 6168/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS) (Backlog) Examination,

January 2020

Subject: Dosage Formulation & Design (Pharmaceutics – III)

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1. (a) Explain the effect of dissolution on formulation. 5
   (b) Describe the concept of stability in preformulation study. 9

OR

   (c) Define polymerization. Write its influences on formulation of a product. 9
   (d) Explain the study of bulk properties during preformulation. 5
2. (a) Explain the formulation of encapsulated slow release granules. 7
   (b) Give the applications of microencapsulation. 7

OR

   (c) Explain the formulation and evaluation of sustained release dosage forms. 14
3. (a) Describe various techniques used for the formulation of the nanoparticles. Enumerate its applications. 14

OR

   (b) Write about
      (i) Preparation of Liposomes. 7
      (ii) Evaluation of transdermal drug delivery systems. 7
4. (a) Describe the methods of assessing bio-quailability. 9
   (b) Enumerate different types of validation. 5

OR

   (c) Explain bioequivalence study design and the statistical interpretation of its data. 14
5. Write about:
   (a) Master formula and Batch production record. 7
   (b) QC of therapeutic materials. 7

OR

   (c) Explain in detail about concept of statistical quality control and quality control charts. 14

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Code No. 6167 / Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS)(Backlog) Examination, January 2020

Subject : Medicinal Chemistry – II

Time : 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1 (a) Define NSAIDs with minimum two structural examples in each class.
(b) Write in detail about the SAR of benzoic acid derivatives. (8+6)

OR

(c) What are Narcotic agonists and antiagonists? Explain their pharmacological action. (7)
(d) Write structure, synthesis and mode of action of bupivacaine and ibuprofen. (7)

2 (a) Write about Pencillins. (7)
(b) Write about cephalosporins. (7)

OR

(c) Write the structure, mode of action and synthesis of any two alkylating agents.
(d) Write a note on Sulphonamides. (8+6)

3 (a) Write in detail about the classification of antiviral agents. (7+7)
(b) Write a note on anti tubercular drugs.

OR

(c) Write the structure, synthesis, and mode of action of the following. (7)
(1) Primaquine (2) Tinidazole
(d) Write a short note on antiprotozoal drugs. (7)

4 (a) Define sedatives and hypnotics and classify them with examples. (7)
(b) Write the SAR of barbiturates. (7)

OR

(c) Write a short note on Antiparkinsonism drugs. (7)
(d) Write a short note on tranquilisers. (7)

5 (a) Define vitamins, classify them and write the storage and biochemical role of any water soluble vitamins. (14)

OR

(b) Write in detail about development of protein drugs. (7)
(c) Describe in detail about the structure and biochemical role of essential amino acids. (7)

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Code No. 13266 / Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-Semester (Non-CBCS)(Suppl.) Examination, May 2019

Subject : Pharmaceutical Analysis – II
(Instrumental Methods of Analysis)

Time : 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1 (a) Explain the concept of chromophore and auxochrome. 4
(b) State and explain Beer-Lambert's law and its limitations. (10)

OR

(c) Describe different components of UV spectrophotometer with the help of neat labelled diagram. 14

2 (a) Explain about different types of molecular vibrations. 4
(b) Write about different types of detectors used IR spectrophotometers. 10

OR

(c) Explain the following 2x3=6
Hook's law and Intensity and position of IR bands.
(d) Explain different sample handling techniques used in IR spectroscopy. 8

3 (a) Explain the following
(i) Shielding and de shielding 7
(ii) Spin-spin coupling 7

OR

(b) Write the theory and principles of Mass spectroscopy technique. 6
(c) Write the description and working of different components of mass spectrometer and applications. 8

4 (a) Give the principle and working of DTA instrument with a neat labeled diagram. 7
(b) Write the advantages and applications of conductometric titrations. 7

OR

(c) Describe different Ion-selective electrodes used in potentiometric titrations. 7
(d) Write short notes on nepheloemetry and turbidometry. 7

5 (a) Explain the principle of chromatography and experimental details of HPTLC for quantitative analysis. 14

OR

(b) Explain the principles and techniques of gel electrophoresis technique. 14

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Code No. 13269/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4-Year I-Semester (Non-CBCS) (Suppl.) Examination, May 2019

Subject : Pharmaceutical Business Management

Time : 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1	a)	Define policy, goal and objectives.	3
	b)	Explain various requirements to be maintained for GMP.	7
	c)	Write importance of ISO.	4
		OR	
	d)	Compare and contrast batch production and continuous production.	4
	e)	Explain various approaches for forecasting the production demand.	10
2	a)	Describe the wall and floor treatments in pharmaceutical buildings.	6
	b)	Draw and explain various process flow diagrams.	8
		OR	
	c)	Write the significance of work measurement and describe the techniques for work study.	6
	d)	Explain different dust collection systems with diagrams.	8
3	a)	Describe the factors to be considered for location and layout for drug stores.	8
	b)	Explain the regulations to be complied for control of stock in drug stores.	6
		OR	
	c)	Explain the procedures applicable for inventory management and control.	14
4	a)	What is importance of training and describe different training procedures.	7
	b)	Explain the promotion and demotion policies in personnel management and their significance.	7
		OR	
	c)	Explain different techniques of job evaluation and merit rating.	14
5	a)	Describe the factors influencing the consumer behavior.	8
	b)	Explain the different credit and discount policies.	6
		OR	
	c)	Explain the factors of market to be considered for product development.	7
	d)	Classify the products and differentiate between the branded versus generic products.	7

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Code No. 13268/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Non-CBCS)(Suppl.) Examination, May 2019

Subject: Dosage Formulation & Design (Pharmaceutics – III)

Time: 3 Hours **Max.Marks: 70**

Note: Answer all questions. All questions carry equal marks.

1 a) Discuss the importance of the following in pre-formulation studies.
   i) Solid state stability
   ii) Dissolution
   iii) Solution stability 9

   b) Explain different types of bulk characterization studies performed during pre-formulation. 5

OR

   c) Justify the statement pre-formulation is key step in pharmaceutical product development. 14

2 a) Explain the rationale behind Sustain Release Dosage Forms (SRDF). Discuss the various techniques for making SRDF. How are they evaluated? 14

OR

   b) What is micro encapsulation? Mention and briefly explain different micro encapsulation methods. Discuss the conservation phase separation in detail with suitable examples. 14

3 a) Explain the fabrication of various types of transdermal patches and give the advantages of TDDS. 14

OR

   b) Write about preparation and characterization of liposomes. 7
   c) Write the method of preparation, evaluation and applications of nanoparticles. 7

4 a) Define bioavailability. Explain the methods of assessment of bioavailability. 9
   b) Write about methods of interpretation of dissolution data of a solid dosage form. 5

OR

   c) Explain the importance of validation and CGMP in production of pharmaceutical products. 9
   d) Write briefly about types of process validation. 5

5 a) Explain the difference between QA and QC. What are the various sources of variation. 7
   b) Explain briefly about quality control charts. 7

OR

   c) Discuss the stability testing protocols for various formulations. 7
   d) Explain briefly about the role of QA in the compounding of tablet dosage forms. 7

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Code No: 13267/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-semester (Non-CBCS) (Supple.) Examination, May 2019

Subject: Medicinal Chemistry - II

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks

1. a) Define and classify local anaesthetics with minimum two structural examples for each class. 8
   b) Write in detail about the SAR of Bengoic acid derivatives. 6

   (OR)

   c) Classify Narcotic analgesics, writ the SAR of morphine analogues and outline the structure, synthesis and mode of action of any two drugs. 6+4+2+2

2. a) Define antineoplastic agents and classify them. 8
   b) Write the structure, synthesis and mode of action of chlorambucil and sulphamethoxazole. 6

   (OR)

   c) Define antibiotics and write general classification. 7
   d) Write a note on quinolone antibiotics. 7

3. a) Explain in detail about the life cycle of Malarial parasite and write the classification of 4 Aminoquinolines. 8
   b) Write a note on antileptotic drugs. 6

   (OR)

   c) Write the structure, synthesis and mode of action of the following
   1. Chloroquine, 2. Metronidazole, 3.Diethylcarbamazine. 3+3+3
   d) Write a short note on Antiprotozoal drugs. 5

4. a) Define general anaesthetics and classify then with suitable examples. 7
   b) Write a note on Sedatives, Hepanotics. 7

   (OR)

   c) Write a note on Anticonvulsants 7
   d) SAR of Benzodiazepioes. 7

5. a) Write in detail about development of protein drugs. 7
   b) Describe in detail about the structure and biochemical role of essential amino acids. 7

   (OR)

   c) Define Vitamins, classify them and write the biochemical role of fat soluble & water soluble vitamins. 14

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CODE NO: 13265/Non-CBCS

FACULTY OF PHARMACY

B. Pharmacy 4/4 I-semester (Non-CBCS)(Suppl.) Examination, May 2019

Subject: Bio-Pharmaceutics & Pharmacokinetics

Time: 3 Hours **Max. Marks: 70**

Note: Answer all questions. All questions carry equal marks

1 a) Explain in detail about various biological factors affecting drug absorption. 8
b) Explain about salient features of passive diffusion. 6

(OR)

c) Enumerate the formulation factors affecting drug absorption.
d) Explain the theories of dissolution.

2. a) Write the concept of protein drug binding
b) Discuss the factors effecting drug-protein binding

(OR)

c) Which physicochemical properties of the drug limit its distribution? Discuss the physiological barriers for distribution of drugs in tissues. 14

3 a) Define biotransformation of drugs and explain various processes involved with suitable examples.

(OR)

b)) Explain about excretion of drugs and discuss the factors affecting renal exertion

4 a) How do you determine zero order and first order rate constants. 7
b) Explain the methods of dose adjustment in patients with renal failure. 7

(OR)

c) Explain about the pharmacokinetic parameters- apparent volume of distribution, half-life and clearance.
d) Explain drug - drug interactions mediated through distribution and metabolism. 7

5 a) Derive the equations for one compartment open model intravenous infusion. Explain in detail how can the steady state drug concentration be achieved more quickly?
b) A drug was administered by IV infusion at a rate of 20 mcg/hr. The volume of distribution and elimination rate constant were found to be 10 L and 0.2 hr^{-1}. Calculate steady state concentration achieved by the drug and the loading dose to be administered for achieving steady state concentration. 4

(OR)

c) Plasma samples were collected from a patient after an oral dose of Paracetamol (500 mg) suspension as follows (F=0.8). Assume that it follows one compartment open model. Calculate all possible pharmacokinetic parameters. 14

Time (hrs)	0.5	1	1.5	2	3	4	6	8	10	12
Plasma concentration (mg/Lit)	13.2	18	19	18.3	15.4	12.5	7.92	5	3.16	1.99

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