Code No. D-8331/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII Semester (CBCS) (Backlog) Examination, August 2022

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

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

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

1 (a) Explain UV-Visible instrumentation with a labeled diagram.
(b) Add a note on the advantages of double beam instrument.

2 (a) State and explain Beer – Lambert's law. Add a note on the deviations from Beer – Lambert's law.
(b) With the help of a diagram explain the electronic transitions with examples.

3 (a) Explain the sampling techniques in IR spectroscopy.
(b) Give the IR frequencies for any four functional groups.

4 (a) Explain the molecular vibrations in IR spectroscopy.
(b) What are the applications of IR spectroscopy?

5 (a) Explain the principle of fluorescence spectroscopy. With a neat labeled diagram explain the radiative and nonradiative relaxation process.
(b) What is the principle of mass spectroscopy?

6 (a) Define/explain the following terms with respect to NMR spectroscopy.
(i) Chemical shift (ii) Shielding.
(b) List and explain any two ionization methods in MS.

7 (a) What are the electrodes used in potentiometry? Explain any one from each category.
(b) Explain the principle of flame photometry. Add a note on the samples that can be analysed by flame photometry.

8 (a) What is the principle of conductometric titrations?
(b) Explain the principle and the instrumentation needed for DTA.

9 (a) List the GC detectors and explain any two in detail.
(b) Explain the principle and the detection methods in paper chromatography.

10 (a) Explain the process of separation of a mixture by gel electrophoresis.
(b) List the similarities and differences between TLC and HPTLC.

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Code No. D-8330/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII – Semester (CBCS) (Backlog) Examination, August 2022
Subject: Medicinal Chemistry – II

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

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

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

2. (a) Define and classify anti-inflammatory agents with three minimum examples in each class.
   (b) Write the structure, synthesis, mechanism of action and uses of the following drugs. (i) Fentenyl (ii) Pethidine.

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

4. (a) Classify antineoplastic agents. Write the structure, mode of action and synthesis of any two alkylating agents.
   (b) Write a note on Sulphonamides.

5. (a) Explain in detail about the life cycle of Malarial parasite and write the classification of 4-Aminoquinolines.
   (b) Write a note on antiprotozoal drugs.

6. (a) Write a short note on antileprotic drugs.
   (b) Write the structure, synthesis and mode of action of any two of the following
   (i) Chloroquine (ii) Metronidazole (iii) Diethylcarbamazine.

7. (a) Define sedatives and hypnotics and classify them with examples.
   (b) Write the SAR and synthesis of (i) Imipramine (ii) Amitryptiline.

8. (a) Define anticonvulsants and classify them with suitable examples.
   (b) Write a short note on tranquilizers.

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

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

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Code No. D-8333/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Backlog) Examination, September 2022
Subject: Biopharmaceutics and Pharmacokinetics

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

Note: Answer any five questions.

1 a. Explain briefly about various theories proposed for dissolution.
b. Write a note on pH partition theory. Mention its importance.

2 a. Discuss the physicochemical factors affecting the absorption of drugs.
b. What are the various mechanisms of drug absorption? Discuss the mechanism of passive diffusion.

3 a. Explain the kinetics of protein binding.
b. Briefly describe the process of drug distribution in the body and enumerate the factors affecting it.

4. a. Name the physiological barriers for drug distribution with the help of suitable diagrams and explain them.
b. Explain the significance of protein binding.

5 a. Explain about non renal routes of excretion of drug and factors influencing them.
b. Write factors influencing the metabolism of drugs.

6 Explain Phase-I and Phase-II biotransformation reactions.

7 a. Discuss the method of residual for calculation of absorption rate constant.
b. Explain the methods of adjusting the dose and dosage regimen in patients with renal diseases with equations.

8 a. Explain any three methods of determing AUC.
b. Describe one compartment open model drug disposition with first order absorption with relevant equations and applications.

9 A 50 Kg woman given a single IV dose of an antibiotic at a dose level of 6 mg/kg and following data was obtained. Assume that the drug follows one compartment open model. Calculate all possible pharmacokinetic parameters.

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

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10. A dose of 100 mg of drug is administered by rapid IV injection. Blood samples were taken periodically after administration of drug and plasma fraction is assayed. Data is as follows:

Time Hrs	0.25	0.5	1.0	1.5	2.0	4.0	8	12	16
Plasma Concentration (mg/ml)	43	32	20	14	11	6.5	2.8	1.2	0.52

Assume that the drug follows two compartment kinetics and calculate the following.

a) A b) C_{max} c) α d) β e) k12 f) k 21

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Code No. D-8332/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (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.

1 (a) Write the importance of preformulation studies.
(b) Discuss the roles of following in preformulation studies.
(i) Polymorphism (ii) Bulk density and Flow properties

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

3 (a) Write the advantages and disadvantages of sustained action pharmaceuticals.
(b) Write about following sustained release formulations.
(i) Tabletted Slow release granules (ii) Matrix tablets

4 (a) Define microencapsulation. Write the applications of microencapsulation.
(b) Explain the Air suspension and Coacervation-Phase separation technique for microencapsulation.

5 (a) Explain the various approaches used in development of TDDS.
(b) Explain the concept and design of Occuserts with examples.

6 (a) Explain the characterization of liposomes.
(b) Write the applications of nanoparticles as drug carries in controlled and targeted drug delivery systems.

7 (a) Write a brief note on dissolution studies for solid dosage forms.
(b) Write various methods for enhancement of bioavailability.

8 (a) Write methods for assessment of bioavailability.
(b) Define validation. 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) What are the different types of Quality Control Charts available? Write about QC charts for variables and attributes.

10 (a) Write a brief note on control of production procedures (Manufacturing control, Packing control and Labeling control).
(b) Write a brief note on records maintenance in manufacturing of dosage forms.

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Code No. D-8223/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (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 concept of policy, goal, objectives in management.
   b) Explain different elements of Total quality management.
2. Explain the role of production planning and quality control in managerial effectiveness.
3. Describe water systems & air conditioning and dust collection systems applicable pharmaceutical industry.
4. Explain design of floors, walls & ceiling, and their treatment in pharmaceutical buildings.
5. Write factors to considered for selection of site for drug store and layout.
6. Explain the material purchasing procedures and organization in stores management.
7. Describe various training and transfer policies in personnel management.
8. Explain the concepts of Hawthorne experiments in industrial psychology.
9. a) Explain the role of types of market and its size on marketing management.
   b) Describe demographic influence on marketing management decisions.
10. What is marketing mix and explain its significance in marketing management?

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Code No. D-8222/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII Semester (CBCS) (Backlog) Examination, February 2022

Subject: Biopharmaceutics and Pharmacokinetics

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

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

1 Define absorption. Explain various mechanisms of drug absorption.

2 (a) Explain the significance of Noyes Whitney equation.
(b) Explain various formulation factors affecting drug absorption.

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

4 (a) Explain the methods to determine protein binding.
(b) Explain permeability rate limited and perfusion rate limited drug distribution.

5 Explain how biotransformation takes place and discuss the factors affecting Biotransformation.

6 (a) Write a brief note on enterohepatic circulation.
(b) Discuss the significance of enzyme induction and inhibition.

7 (a) Write in detail about pharmacokinetic drug interactions and its significance in combination therapy.
(b) Discuss the methods of dose adjustment in renal impairment.

8 (a) What are the various methods for calculating AUC?
(b) Explain methods of adjustment of dose and dosage regimen in patients with hepatic failure.

9 A dose of 325 mg 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 parameter.

Time Hrs	2	4	6	8	10	12	16	20
Plasma Concentration (mg/ml)	18.3	10.1	5.8	3.3	1.8	1.0	0.31	0.12

10 Ceftriaxone (184 mg) of I.V bolus injection provided the following serum levels as a function of time. One compartment model.

Time (H)	1.0	6.0	12	24	48	72	96	144
Plasma Concentration (mg/ml)	137	120	103	76	42	23	12	3.7

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Code No. D-8221/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (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 What are preformulation studies? Explain the study of various physiochemical properties of drug.

2 Explain the influence of Oxidation. Hydrolysis and Polymerization on stability of products.

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

4 (a) What is microencapsulation? What are the reasons for microenscapsulation?
(b) List out the various methods for microenscapsulation. Explain Coacervation-Phase separation techniques.

5 (a) What are the different methods of preparation of liposomes? Explain the preparation of liposomes by physical dispersion methods.
(b) Explain the design of Occuserts.

6 (a) Explain in vitro evaluation of Transdermal patches.
(b) Write the applications of nanoparticles as drug carries in controlled and targeted drug delivery systems.

7 (a) What is bioavailability? Write briefly on various methods for enhancement of bioavailability.
(b) Write a note on experimental design used for conducting bioequivalence study.

8 (a) Define validation. Write its importance in pharmaceutical operations. Explain different types of process validation.
(b) Write the concept and importance of cGMP in production of pharmaceutical products.

9 (a) What is quality control and quality assurance? Write source of quality variation.
(b) Write QA and QC during compounding, packing and labelling.

10 (a) Write a brief note on: (i) Manufacturing Formula Record (ii) Batch Production Record
(b) What is statistical quality control? Write about SQC charts for variables and attributes.

Code No. D8220/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII Semester (CBCS) (Backlog) Examination, February 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) List and explain the different methods for the quantitative analysis of single component samples by UV spectroscopy.
(b) Explain the concept of chromophore and auxochrome with suitable examples.

2 (a) Explain the following with respect to UV spectroscopy.
(i) Lambda max (ii) Bathochromic shift
(iii) Effect of conjugation on UV spectra
(iv) Solvents and sample preparation in UV.
(b) State and explain Beer – Lambert's law.

3 (a) Explain the use of Hook's law in IR spectroscopy.
(b) What is the difference between group frequency region and finger print region?
(c) Sample handling technique for solid samples.

4 (a) Explain IR instrumentation with a schematic diagram.
(b) What are the molecular vibrations seen in compounds?

5 (a) What is the principle of NMR spectroscopy?
(b) List and explain any two ionization methods.

6 (a) Explain MS instrumentation with a neat labeled diagram.
(b) What is the relationship between molecular structure and fluorescence?

7 (a) What are the end point evaluation methods inpotentionmetry?
(b) Differentiate between nephelometry and turbidometry.

8 (a) Explain the principle and application of DTA.
(b) What is the principle of conductometric titrations? Add a note on the advantages of conductometric titrations.

9 (a) Explain the different methods to perform paper electrophoresis.
(b) What is the principle of TLC? Explain in detail the experimental procedure for the separation of any mixture by TLC.

10 (a) Explain the components in HPLC instrumentation with a labeled diagram.
(b) What is the Principe of gel electrophoresis?

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Code No. D-8219/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII – Semester (CBCS) (Backlog) Examination,
February / March 2022

Subject: Medicinal Chemistry – II

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

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

1 (a) What are Narcotic agonists and antagonists? Write SAR and their pharmacological action.
(b) Write the structure, synthesis and uses of Ibuprofen and bupivacaine.

2 (a) Define and classify NASIDs with minimum two structural examples in each class.
(b) Write in detail about the SAR of benzoic acid derivatives.

3 (a) Write about Pencillins.
(b) Write a note on amino glycoside antibiotics.

4 (a) Define alkylating agents and classify them.
(b) Write the structure, synthesis and mode of action of chlorambucil and sulphamethoxazole.

5 (a) Write in detail about antiviral agents.
(b) Write the structure, synthesis and mode of action of the following
(i) Albendazole (ii) Niclosamide (iii) Dapsone.

6 (a) Enumerate the various classes of antifungal agents with examples.
(b) Write the synthesis and mode of action of the following drugs
(i) Chloroquine (ii) Piperazine citrate.

7 (a) Define general anaesthetics and classify them with suitable examples.
(b) Write a short note on antiparkinsonism agents.

8 (a) Outline the classification of anticonvulsants.
(b) Write in detail about SAR of Benzodiazepines.
(c) Write the synthesis and uses of the following drugs
(i) Imipramine (ii) Ketamine.

9 (a) Explain in detail about essential amino acids and their functional role.
(b) Write the structure, uses and biochemical role of following Vitamins
(i) Vitamin B1 (ii) Vitamin C (iii) Vitamin B12.

10 (a) What are Vitamins? Write the source, storage, biochemical role of fat soluble vitamins.
(b) Write in detail about development of protein drugs.

Code No.12318/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Backlog) Examination, September 2021
Subject: Medicinal Chemistry - II

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

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

1. (a) Classify Narcotic analgesics? Write the synthesis of (a)Pethidine (b)FentenylHcl.
   b) What are anti inflammatory agents? Write the synthesis of (a) Diclofenac Sodium (b) Ibuprofen.

2. (a) Write the SAR and synthesis of any one local anaesthetic agent?
   (b) Write the synthesis of (a) Lidocaine (b) Nalaxone

3. (a) Classify Antiviral agents? Write the chemistry & synthesis of Zidovudine.
   (b) Write a brief note on Anti protozoal agents.

4. (a) Classify Antimalarial agents? Write the synthesis of (a) chloroquine (b) Primaquine.
   (b) Write the synthesis and SAR of INH & Ethambutol.

5. (a) Write the SAR and Synthesis of Busulfan and fluro uraeil.
   (b) Write the classification and general synthesis of sulphonamides.

6. (a) Write the SAR of β-lactam antibiotics? And write the synthesis of (a) Ampicillin (b) Cephalexin
   (b) Write a note on chemistry of Aminoglycosides.

7. (a) Classify General anesthetics? Write the synthesis of (a) Halothane (b) Ketamine.
   (b) Classify Antipsychotic agents and write the SAR of any one class of the days?

8. (a) Write the synthesis and SAR of Benzodiazepines and Barbiturates.
   (b) Write a brief note on Antiparlinsonism drugs.

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

10. Write the classification, preparation, structure, storage and uses of water soluble vitamins in detail.

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Code No.12319/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Backlog) Examination, September 2021

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

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

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

1. (a) Explain bathochromic and hypsochromic shifts with examples.
   (b) Define absorption maximum? Write the effect of solvent and conjugation on absorption maximum.
   (c) Write about different types of possible electronic transitions in organic compounds.

2. (a) Define chromosphere and auxochrome with examples.
   (b) Give the description and working of UV spectrophotometer with neat labelled diagram.

3. (a) Explain about different types of molecular vibrations.
   (b) Write about different types of detectors used IR spectroscopy.

4. (a) Explain different sample handling techniques used in IR spectroscopy.
   (b) Explain Hook's law and intensity of absorption bands in IR spectroscopy.

5. (a) Explain the principle of fluorescence and phosphorescence phenomena.
   (b) Write about different ionization techniques in mass spectroscopy.

6. Write about the following
   (1) Chemical shift (2) Shielding and Deshielding (3) Different factors effecting fluorescence phenomenon.

7. (a) Give the description and working of standard hydrogen electrode.
   (b) Explain about different types of conductometric titrations.

8. (a) Explain different methods for determination of end point in potentiometric titrations.
   (b) Write a short note on nephelometry and turbidometry.

9. Give the description and working of HPLC with neat labellled diagram.

10. (a) Write the principles of paper and column chromatography.
    (b) Write about different types detectors used in gas chromatography.

Code No.12320/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Backlog) Examination, September 2021

Subject: Dosage Formulation and Design (Pharmaceutics-III)

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

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

1. (a) Discuss the following physical properties
   i) pKa (ii) Partition coefficient (iii) Polymorphism.
   (b) What is the role of flow properties in preformulation studies?

2. Discuss the following chemical properties of drugs and their stability.
   (a) Oxidation (b) Hydrolysis (c) Polymerization

3. (a) Write a brief note on following sustained release formulations.
   (i) Drug-complex formulation (ii) Encapsulated Slow release granules
   (b) Write a note on *in-vitro* evaluation of sustained release formulations.

4. (a) Define microencapsulation? What are the reasons for microencapsulation?
   (b) List out the various methods for microencapsulation? Explain Coacervation-Phase separation technique?

5. (a) Explain *in-vitro* evaluation of Transdermal patches.
   (b) What are the different types of ocular drug delivery systems available? Describe the design of Occuserts?

6. (a) Explain in-vitro evaluation of Nano particles?
   (b) Write methods of preparation of nanoparticles. Explain any two methods in detail.

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

8. (a) Define validation. Write its importance in pharmaceutical operations. Explain different types of process validation.
   (b) Write the importance of cGMP in production of pharmaceutical products.

9. (a) What is quality control and quality assurance? Write source of quality variation.
   (b) Write QA and QC 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.

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Code No.12321/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Backlog) Examination, September 2021

Subject: Biopharmaceutics & Pharmacokinetics

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

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

1. (a) Explain various passive transport mechanisms of drug across the cell membrane.
   (b) Explain pH partition hypothesis.

2. (a) Write a note on Diffusion layer model and Danckwert's model for drug dissolution.
   (b) Describe the effect of gastric emptying on rate of drug absorption.

3. (a) Explain various physiological barriers to drug distribution.
   (b) Explain the kinetics of protein drug binding.

4. (a) Explain the Organ/Tissue size and perfusion rate affecting distribution of drugs.
   (b) Explain the significance of Protein/tissue binding of drugs.

5. Define biotransformation of drugs and explain phase I and Phase II biotransformation reactions, with suitable examples.

6. (a) Describe the factors affecting renal excretion of the drugs.
   (b) Explain Glucoronic acid conjugation with examples.

7. (a) Explain the methods of dose adjustment in patients with hepatic failure.
   (b) Describe the terms "Cmax", "tmax", "MEC" and therapeutic index.

8. (a) Explain the following pharmacokinetic parameters – apparent volume of distribution, half-life and clearance.
   (b) Explain the significance of pharmacokinetic drug interactions in combination therapy.

9. How do you obtain different pharmacokinetic parameters following intravenous bolus administration of a drug that confers one compartment open model characteristics.

10. A dose of 250mg of a new drug is injected intravenously to a healthy volunteer and the following blood data was obtained. Assume that the drug follows on compartment open model and calculate the following.
    (i) Plasma elimination rate constant (ii) Elimination half life
    (iii) Volume of distribution (iv) Clearance.

Time (hrs)	2	4	6	8	10	12	16	20
Concentration (μg/ml)	18.8	10.4	5.5	3.4	1.6	1.0	0.34	0.12

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Code No.12046/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Backlog) Examination, March 2021

Subject: Medicinal Chemistry - II

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

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

1. (a) Classify local anesthetics? Write the synthesis of (i) Lidocaine (ii) Bupivacaine.

   (b) Write a brief note on Narcotic analgesics and the synthesis of Nalaxone.

2. (a) Classify antipyretics and anti-inflammatory agents. Write the SAR of morphine.
   (b) Write the synthesis of (i) Piroxicam (ii) Diclofinace sodium.

3. (a) Classify antineoplastic agents? Write the chemistry of alkylating agents.
   (b) Write the synthesis of (i) Chlorambucil (ii) Methotrexate

4. (a) Classify Antibiotic? Write the SAR of Penicillin in detail.
   (b) Write a brief note on chemistry of Tetracycline.
   (c) Write the synthesis of (i) Cephalexin (ii) Chloronphenicol.

5. (a) Classify Anti-tubercular drugs? Write the SAR of Pyrizinamide.
   (b) Write the classification of Anthelmentic agents and write the synthesis of
   a) Albendazole (b) Niclosamide.

6. (a) What are chemotherapeutic agents and write the SAR of antifungal agents.
   (b) Write the synthesis of (a) Chloroquine (b) Metronidazole (c) Piperazine.

7. (a) Write the SAR and synthesis of (a) Imipramine (b) Amitriptyline.
   (b) Classify sedatives & Hypnotics? Write the synthesis of (a) Phenobarbitone
   (b) Glutathione.

8. (a) Write the SAR and Synthesis of (i) Diazepam (ii) Midazolam.
   (b) Classify Antipsychotics? Write the synthesis of (a) Chlorpromazine
   (b) Thiothixene.

9. (a) Write about preparation and uses of fat soluble vitamins.
   (b) Write a brief account on Essential amino acids.

10. Write in detail about Preparations, storage & uses of water soluble vitamins.

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Code No.6264/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Suppl.) Examination, October 2020

Subject: Pharmaceutical Business Management

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

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

1. Explain different management information systems applicable to top, middle and lower levels of management.

2. Explain about production planning and quality control.

3. Describe various utilities and services to be made available in a pharmaceutical industry.

4. Explain the factors influencing plant location and layout.

5. Describe the procedure for stock accounting and explain various records applicable to it.

6. (a) What is economic order quantity and its significance in stores management.
   (b) Explain various steps involved in material purchasing.

7. Explain the importance of selection, training, evaluation and merit rating of employees in company.

8. (a) What is morale and explain its role in productivity.
   (b) Describe the reasons for fatigue and mention the remedies to prevent it.

9. What is marketing mix and explain the merits and demerits of different channels of distribution.

10. Describe different pricing strategies for the fixation of price of a product.

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Code No.6261/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Suppl.) 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. Discuss the principe, Instrumentation and applications of UV-visible Spectroscopy.

2. (a) Add a note on different types of detectors with their advantages and disadvantages used in Uv-visible Spectrophotometer.
   (b) Derive Beers law and explain the deviation from Beers' Law.

3. Explain the principle, Instrumentation and applications of IR spectroscopy.

4. (a) Describe the interpretation of IR spectra with four examples of schematic Spectra.
   (b) Add a note on different types of detectors used in IR spectroscopy.

5. (a) Explain the instrumentation involved in mass spectroscopy.
   (b) Explain the applications of NMR spectroscopy.

6. (a) Explain the instrumentation involved in NMR Spectrophotometer.
   (b) Explain the principles involved in Fluoresence and Phosphorescence.

7. (a) Differentiate between DTA and DSC.
   (b) Explain the Instrumentation in Flame photometer.

8. (a) Differentiate between Nephlometry and turbidimetry.
   (b) Explain the different types of indicator electrodes in potentometric titrations.

9. (a) Discuss the different types of detectors used in Gas Chromatography.
   (b) Define Electrophoresis and add a note on applications of Gel electrophoresis.

10. (a) Explain the principle Instrumentation and applications of HPLC.
    (b) Write the applications of Paper Electrophoresis.

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Code No: 6260/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester. (CBCS) (Suppl.) Examination, October 2020

Subject: Medicinal Chemistry-II

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

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

1 (a) Define & classify NSAIDS with structural examples
(b) Outline the structure, synthesis & uses of following drugs
(i) Diclofenac (ii) Ibuprofen

2 (a) Define & classify Narcotic analgesics with structural examples
(b) Write the SAR of Morphine analogues

3 (a) Write a note on Cephalosporins
(b) Outline the synthesis & mode of action of following drugs
(i) Busulfan (ii) Sulphamethoxazole

4 (a) Define & classify antibiotics and discuss briefly about amino glycoside antibiotics.
(b) Write the classification of Antineoplastic agents with examples.

5 (a) Explain the life cycle of Malaria parasite & write the classification of anti malarial agents.
(b) Write the structure, IUPAC name, Mode of action and uses of following drugs.
(i) Zidovudine (ii) Metronidazole

6 (a) Classify antitubercular drugs and write the synthesis & mode of action of INH
(b) Write a note on Anthelmintic drugs.

7 (a) Define & classify Sedatives and hypnotics with examples.
(b) Outline the synthesis, mechanism of action & uses of following drugs
(i) Imipramine (ii) Diazepam

8 (a) Define & classify Antipsychotic agents.
(b) Write a note on Antiparkinsonism agents.

9 (a) Write the structure & functional role of essential amino acids.
(b) Write the structure, biochemical role & uses of vitamins A, B_1 & C

10 (a) Write a note on fat soluble vitamins.
(b) Write a brief note on development of protein drugs.

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Code No: 6262/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Suppl.) Examination, November 2020

Subject : Dosage Formulation and Design (Pharmaceutics-III)

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

Note: Answer any Four Questions **(4 x 17 1/2 = 70 Marks)**

1) a) Explain the following terms
   i) Bulk density ii) Poly morphism
   iii) Angle of repose iv) Cry stallinity
   v) Partition coefficient
   b) What is the role of particle size in pharmaceutical formulation development.

2) Discuss the role of Preformulation studies in Pharmaceutical product development.

3) a) Explain Various physics chemical and biological factors that influence sustained release desage formulations.
   b) Explain about various types of prolonged action dosage forms.

4) Define micro encapsulation
   Discuss in detail about
   i) Coacervation – Phase separation
   ii) Solvent evapvation
   iii) Poly merization.

5) What is a liposome and its function? Explain the method of preparation of liposomes? What are the applications of liposomes in dosage forms

6) a) What are the advantages and disadvantages of ocular drug delivery systems.
   b) Define Nano particles. What is the importance of manotechnology in pharmacy? What are the different methods of preparation of nanoparticles.

7) Define the following terms
   i) Bioavailability ii) Absolutes bioavailability
   iii) Relative bioavailability iv) Bio equivalence

8) Writes a note on CGMP
   Describe experimental design for single dose bio equivalence study.

9) Write a note on i) Raw material quality control
   ii) Control of records

10) What is statistical quality control? What are the different types of quality control charts?

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Code No: 6033/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester. (CBCS) (Main) Examination, December 2019

Subject: Medicinal Chemistry-II

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

Note: Answer All questions, All questions carry equal marks

1 (a) Define & Write the SAR of Local anesthetics. (8)
(b) Outline the synthesis & IUPAC names of following drugs. (3+3)
(i) Lidocaine (ii) Pethidine

(OR)

2 (a) Write any three Examples & SAR of Indole acetic acid derivatives. (8)
(b) Give the synthesis & mode of action of following drugs. (3+3)
(i) Piroxicam (ii) Diclofenac

3 (a) Define & classify Alkylating agents and write the Structure & mechanism of action of Chlorambucil. (9)
(b) Write a note on quinolone antibacterials. (5)

(OR)

4 Define & classify beta lactam antibiotics and Write the synthesis & mode of action of Ampicillin. (14)

5 (a) Enumerate the various classes of antitubercular drugs. Write the synthesis & mode of action of INH. (8)
(b) Write a note on Antiviral agents. (6)

(OR)

6 (a) Write in detail about. (7+7)
(i) 4-amino quinolones (ii) antifungal agents

7 (a) Discuss in detail about Tricyclic antidepressants. (7)
(b) Outline the synthesis, mode of action & uses of following drugs. (7)
(i) Phenobarbitone (ii) Phenytoin

(OR)

8 (a) Write a note on anticonvulsants. (6)
(b) Define & classify anxiolytics with examples. (8)

9 (a) Define vitamins, classify them, and write the source, structure, and biochemical role of fat soluble vitamins. (8)
(b) Write in detail about development of protein drugs. (6)

(OR)

10 (a) Write the structure & functional role of essential amino acids. (8)
(b) Write the structure, uses & biochemical role of Vitamin-C,Vitamine-B_6, Vitamin-E (6)

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Code No: 6037/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Main) 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 about various levels of management. 5
   b) Write about the objectives Principles and functions of management 9

OR

2. a) Explain production planning and control. 9
   b) Write the problems of productivity and describe the remedies. 5

3. Explain different factors to be considered for a pharmoceritical plant layout & plant building 14

OR

4. Describe general flow patterns and explain process flow diagrams for tablets production. 14

5.a) Explain ABC analysis and its importance in materials management. 6
   b) Write the importance of order level, lag time safety stock and buffer stock in inventory control. 8

OR

6. Describe procedure of receiving, inspection, issue and storage of stocks in materials management. 14

7. Explain different motivation theories in personnel management. 14

OR

8. Explain about importance of selection, training, evaluation & merit rating of employees in a company. 14

9. Explain the importance of medical representatives and mention their role in sales promotion & marketing. 14

OR

10. Describe the role of media, window display and publicity in pharmaceutical marketing. 14

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Code No: 6036/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Main) Examination, January 2020

Subject: Bio-Pharmaceutics and Pharmacokinetics

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

Note: Answer all Questions, All Questions carry equal marks.

1. a) What is gastric emptying? Explain various factors influencing gastric emptying.
   b) Explain Noye's Whitney Equation. (8+6)

OR

2. a) Define drug absorption. Explain the mechanism of drug absorption
   b) Explain various biological factors affecting drug absorption. (8+6)

3. a) Explain the kinetics of Drug-Protein binding.
   b) Explain various physiological barriers in drug distribution of drugs. (8+6)

OR

4. a) What is Drug-Protein binding? Explain its experimental methods. (8+6)
   b) How the organ size and perfusion rate influence drug distribution.

5. a) Explain factors affecting biotransformation of drugs. (8+6)
   b) What are microsomal & non-microsomal enzymes? Add a note on microsomal enzyme induction.

OR

6. a) What are the factors affecting renal excretion of drugs.
   b) Briefly explain the mechanism of urine formation. (6+8)

7. a) Explain the concept of renal clearance.
   b) Explain the following a) Tmax b) AUC. (8+6)

OR

8. a) Explain dose adjustment in renal diseases. (8+6)
   b) What are the factors affecting hepatic clearance?

9. a) Explain one compartment open model drug disposition.
   b) Write a note on steady state concentration. (8+6)

OR

10 Plasma samples from a patient were collected after an oral dose of 100mg of a new drug and concentration are as follows:

Time (hr)	1	2	3	4	5	6	8	10	12	14
Plasma concentration (mg/L)	0.38	0.73	0.91	0.97	0.97	0.92	0.71	0.53	0.40	03.0

Calculate pharmacokinetic parameters elimination rate constant, elimination half-life, absorption rate constant and apparent volume of distribution, assuming one compartment open model and first order drug absorption, along with plasma drug-time graph.

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Code No. 6035/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (CBCS) (Main) 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) What are the objectives of preformulation studies. 5
   (b) Write brief notes on 4
   (i) Polymorphism.
   (ii) Partition coefficient.
   (c) Why preformulation studies are important in formulating tablet dosage forms. 5

OR

2. Discuss how the chemical properties of API influence the stability of a drug product. 14

3. Discuss the principle and procedure for Invitro & Invivo evaluation of sustain release dosage forms. 14

OR

4. (a) What are the applications of Micro encapsulation. 5
   (b) Write the different methods of preparation of micro capsules. 9

5. Explain various formulation methods of Transdermal drug delivery system and evaluation. 14

OR

6. (a) Describe formulation and evaluation of ocular drug delivery systems. 10
   (b) Write short notes on Erodoble inserts. 4

7. (a) What are the objectives of Bioavailability and Bioequivalence studies? 4
   (b) What are the different methods to enhance the bioavailability of formulation? 10

OR

8. (a) Explain GMP in production of pharmaceuticals, by taking tablet formulation example. 7
   (b) What is process validation? Write detail notes on types of validations. 7

9. (a) What is stability testing? Why stability studies are required for pharmaceutical products? 9
   (b) Write short notes on stability chambers. 5

OR

10. What are the physio chemical tests should be performed for raw materials in pharma industry? 14

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Code No: 6034/CBCS

FACULTY OF PHARMACY

B. Pharmacy VII-Semester (CBCS) (Main) Examination, January 2020

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 Qualitative and Quantitative applications of UV-Vis Spectroscopy with examples. (6)

(b) Define the terms. (8)

i Hyperchromic shift ii. Hypochromic shift

iii Bathochromic shift iv. Hypsochromic shift

(OR)

2 (a) Derive Beers-Lamberts law and explain deviations from beers law. (7)

(b) Explain different types of electronic transitions. (7)

3 (a) Explain the different types of molecular vibrations in IR spectroscopy with the help of neat diagram. (10)

(b) Define and explain the importance of Finger print region. (4)

(OR)

4 (a) Explain the Instrumentation involved in IR spectroscopy. (10)

(b) Add a note on different sampling techniques in IR spectroscopy. (4)

5 (a) Define the terms. (8)

i Chemical shift ii Molecular ion

iii Shielding iv Deshielding

(b) Discuss the instrumentation in NMR spectroscopy. (6)

(OR)

6 (a) Explain the different ionization techniques in mass spectroscopy. (8)

(b) Explain the principles of fluorescence and phosphorescence. (6)

7 (a) Differentiate between Nephlometry and turbidimetry. (7)

(b) Explain the principle involved in conductometric titrations and add a note on acid -base titrations**.** (7)

(OR)

8 (a) Discuss the instrumentation and applications of Flame photometer. (5+5)

(b) Explain the different types of Reference Electrodes in Potentiometric titrations. (4)

9 (a) Explain the principle, procedure and applications of column chromatography. (10)

(b) Discuss the applications of Paper Electrophoresis. (4)

(OR)

10 (a) Discuss the instrumentation involved in the Gel electrophoresis. (10)

(b) Differentiate between TLC and HPTLC. (4)

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