Code No. 1087

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Main) Examination, November 2017

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) State and explain Beer's law and describe different components of UV spectrometer. 14

OR

b) i) Describe different methods for quantitative analysis of single component samples by spectrophotometry. 10

ii) Explain about different types of electronic transitions in organic compounds. 4

2 a) i) Explain Hook's law and intensity of absorption bands in IR spectroscopy. 6

ii) Describe the interpretation of IR spectra of simple organic compounds. 8

OR

b) i) Explain different sample handling techniques used in IR spectroscopy. 7

ii) Describe different types of detectors used in IR spectrophotometers. 7

3 a) i) Write about theory and principles of NMR spectroscopy technique. 10

ii) Explain spin-spin coupling. 4

OR

b) Explain the following :

i) Explain the interpretation of Mass spectrum 7

ii) Describe Mass Analyzers 7

4 a) i) Give the principles of DSC and DTA techniques. 7

ii) Write the advantages and applications of conductometric titrations. 7

OR

b) i) Describe different Ion-selective electrodes used in potentiometric titrations. 7

ii) Write the theory and principle involved in flame photometry technique. 7

5 a) i) Explain the principles of gel electrophoresis technique. 4

ii) Give the description and working of HPLC with help of neat labeled diagram. 10

OR

b) Write about different types of detectors used in gas chromatography. 14

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Code No. 1088

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Main) Examination, November 2017

Subject : Medicinal Chemistry – II

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

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

1 a) Write the classification of NSAID's 7

b) Describe the SAR of Para amino benzoic acid derivatives used as local anaesthetics. 7

OR

c) Classify narcotic analgesics with examples. 7

d) Write the SAR of morphine analogues. 7

2 a) Write the classification of antineoplastics and outline the synthesis of methotrexate. 5+2

b) Write the classification and mode of action of sulphonanides. 5+2

OR

c) Classify Betalactum antibiotics and outline the synthesis of ampicillin. 5+2

d) Write in detail about quinolone antibacterials. 7

3 a) Write a note on Antileprotic agents. 7

b) Classify antitubercular drugs and write the synthesis and mode of action of INH. 7

OR

c) Write in detail about 4-amino quinolines used in malaria. 7

d) Write the synthesis and IUPAC of metronidazole, and primaquine. 3.5+3.5

4 a) Define and classify the sedatives and hypnotics with examples. 7

b) Outline the synthesis, mode of action, IUPAC nomenclature and uses of phenobarbitone and Diazepam. 3+4

OR

c) Write a note on hydantoins used as anticonvulsants. 7

d) Write a note on the SAR of Barbiturates. 7

5 a) Write the structure and biochemical role of fat soluble vitamins. 7

b) Write in brief about "Essential amino acids". 7

OR

c) Write a note on development of protein drugs. 7

d) Describe the biochemical role of any two water soluble vitamins. 7

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Code No. 1089

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Main) Examination, November 2017

Subject : Dosage Formulation and Design (Pharmaceutics – III)

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

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

1 a) Explain in detail about preformulation studies with respect to the dosage form necessities and physical and chemical properties. 14

OR

b) What are the different pathways of degradation of pharmaceutical products and how they can be protected from degradation? 7

c) Write a short note on accelerated stability testing. 7

2 a) Explain about different factors to be considered in the design of sustained release dosage forms. 8

b) Discuss the preparation of encapsulated slow release granules for the sustained release. 6

OR

c) Write the importance of microencapsulation. Write a note on air suspension technique. 7

d) Write a note on spray drying and spray congealing. 7

3 a) Enumerate the advantages of TDDS and give examples of marketed TDDS. Explain in detail about in-vitro evaluation methods of TDDS. 14

OR

b) Explain about Pilo 20, Pilo 40 and erodable inserts. 7

c) Write the applications of liposomes. Explain about physical dispersion of liposomes. 7

4 a) Write in detail about various approaches for enhancement of bioavailability of drugs. 14

OR

b) Explain in detail about bioequivalence protocol for conducting bioequivalence study. 14

5 a) Differentiate QA and QC. Explain briefly about active or therapeutic materials control. 7

b) Explain the quality assurance at the startup. 7

OR

c) What are the records that must be maintained to control and assure the manufacturing practices? 7

d) Write a note on raw materials controls and control products. 7

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Code No. 1090

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Main) Examination, November 2017

Subject : Pharmaceutical Business Management

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

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

1 a) Explain bureaucratic, administrative and scientific principles of management. 6
b) Describe the procedures involved in environmental management system as per ISO. 8

OR

c) Explain the different functions of management. 6
d) Describe the frame work of MIS and its importance. 8

2 a) Write in detail about various factors influencing plant location. 7
b) Explain various utilities and services needed by a pharmaceutical firm. 7

OR

c) Explain the layouts of sterile area and tablet production area. 14

3 a) Write in detail about materials purchasing procedure. 7
b) Explain the minimum requirements to be followed for stores management. 7

OR

c) Write about the records to be maintained in the stores. 6
d) What is inventory control? Write its objectives. Explain EOQ and ABC methods of analysis. 8

4 a) Explain Hawthorne experiments with their significance in industrial psychology. 8
b) Write the recruitment and selection process and differentiate them. 6

OR

c) Explain different theories applicable for employee motivation. 8
d) Describe the concept of fatigue and boredom. 6

5 a) Describe the marketing mix of pharmaceutical business. 14

OR

b) Explain different concepts of pricing policy. 7
c) Describe the specific requirements of media planning and publicity for pharmaceutical products. 7

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Code No. 1086

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Main) Examination, November 2017

Subject : Bio-Pharmaceutics and Pharmacokinetics

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

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

1 a) Define Absorption. Explain the various mechanisms of drug absorption. 14

OR

b) Write about different physicochemical properties which affect the absorption. 10

c) Explain the application of pH partition theory in predicting the drug absorption. 4

2 a) What is the influence of various disease states on plasma protein level and drug binding? 7

b) Briefly describe the process of drug distribution in the body and enumerate the factors affecting it. 7

OR

c) Name the physiological barriers for drug distribution. With the help of suitable diagrams explain them. 9

d) How the organ size and perfusion rate influence the drug distribution? 5

3 a) Explain phase-I and phase-II biotransformation reactions. 14

OR

b) Explain about non renal routes of excretion of drug and factors influencing them. 10

c) Write factors influencing the metabolism of drugs. 4

4 a) Explain the methods of adjusting the dose and dosage regimen in patients with liver diseases. 8

b) Write about zero order reaction and zero order half life with graphic illustration. 3

c) Derive the equation for calculation of biological half life. 3

OR

d) Write in detail about pharmacokinetic drug interactions and its significance in combination therapy. 7

e) Discuss the methods of dose adjustment in renal impairment. 7

5 a) Plasma samples from a patient were collected after an oral dose of 10 mg of a new benzodiazepine solution as follows

Time (hr)	0.25	0.5	0.75	1	2	4	6	10	14	20
Plasma concentration (mg/ml)	2.85	5.43	7.75	9.84	16.2	22.1	23.0	19.0	13.9	7.97

From the above data calculate all possible pharmacokinetic parameters assuming the drug follow one compartment open model. The percentage of the drug absorbed is 80%. 14

OR

b) Discuss in detail compartment model for intravenous infusion. 7

c) Explain the method of residuals for calculation of absorption rate constant. 7

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Code No. 4237

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Suppl.) Examination, May 2017

Subject: Pharmaceutical Business Management

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

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

1 a) Describe different functions of management. 5

b) Explain the different levels of Management Information Systems and mention their importance. 9

OR

c) Describe about Production Planning and Management System. 14

2 a) Explain and compare different approaches of factory layout. 14

OR

b) Explain the Air conditioning system and Dust collection system in utilities and mention their importance. 14

3 a) Write in detail about materials purchasing procedure. 14

OR

b) Write about the stock accounting procedures and records in the stores management. 14

4 a) Describe the concepts of fatigue and boredom. 7

b) Explain Mc.Gregor X and Y theory and mention their significance in personnel management. 7

OR

c) Explain about the methods of selection, appointment and remuneration. 14

5 a) Explain different aspects of marketing mix and mention their roles in marketing management. 14

OR

b) Differentiate the following:

i) Marketing and Selling 7

ii) Branded and Generic product 7

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Code No. 4236

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Suppl.) Examination, April 2017

Subject: Dosage Formulations Design (Pharmaceutics – III)

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

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

1 a) Explain in detail about the importance of various physicochemical properties of drug substance in designing a quality and stable dosage form. 14

OR

b) What are the different pathways of degradation of pharmaceutical products and how they can be protected from degradation? 14

2 a) Enlist the approaches that are used for formulating sustained release oral products and discuss in detail. 14

OR

b) What are the advantages associated with micro capsules? Describe the preparation by non-solvent addition. 7

c) Explain the air suspension technique for preparing micro capsules. 7

3 a) Enumerate potential advantages of TDDS with examples. Explain the evaluation methods of TDDS. 14

OR

b) Write about preparation and characterization of liposomes. 8

c) Explain about Pilo 20 and Pilo 40. 6

4 a) Define process validation. Write briefly about types of process validation. 7

b) Write a note on GMP. 7

OR

c) Explain in detail about the methods to enhance bioavailability of drugs. 14

5 a) Explain the difference between QA and QC. What are the various sources of variation? 7

b) Explain the QA at startup. 7

OR

c) Explain briefly the role of QA in the manufacture of tablet dosage forms. 7

d) Write short notes on QC charts. 7

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Code No. 4233

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Suppl.) Examination, April 2017

Subject: Bio-Pharmaceutics & Pharmacokinetics

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

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

1 a) With neat labeled diagrams explain in detail various theories of drug dissolution. What do you mean by biopharmaceutics and give its importance. 10+4

OR

b) List out various factors affecting the drug absorption. Explain in detail about formulation factors affecting the drug absorption. 14

2 a) Discuss the role of protein binding in drug distribution. What components of the plasma proteins are important in binding of drugs. 14

OR

b) Describe in detail perfusion limited drug distribution. Give factors affecting drug distribution. 10

c) How the organ size and perfusion rate influence the drug distribution. 4

3 a) What are conjugation reactions? Give examples for each type of conjugation reaction. 14

OR

b) Explain the factors influencing renal excretion of drugs. 10

c) Explain briefly about enterohepatic circulation. 4

4 a) Define bioavailability. Explain about AUC, C_{max}, T_{max}, MEC and MTC. Discuss different methods used for determination of AUC of blood level-time curve of a drug. 14

OR

b) Define apparent volume of distribution. How it is determined? 10

c) Discuss briefly about hepatic clearance. 4

5 a) What are the compartment models? Derive an expression for calculating various pharmacokinetic parameters for a drug administered by intravenous bolus administration. 14

OR

b) A single intravenous injection of 5 mg / Kg of drug A is given to a 50 year subject (weight = 80 Kg). the following plasma concentrations are collected. Assume that it follows one compartment open model. Calculate all possible pharmacokinetic parameters. 10

Time (hr)	0.1	0.5	1	8	16	24	48
Plasma concentration (µg/ml)	1.142	1.0627	0.9712	0.2755	0.0653	0.0155	0.0002

c) A penicillin solution containing 300 µg/ml has a half life of 8 days in plasma. What will be the concentration in 7 days? 4

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Code No. 4234

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Suppl.) Examination, April 2017

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) Write about different properties of electromagnetic radiation. 5
b) Write the theory and principles of UV spectroscopy. 5
c) Explain the concept of chromophore and auxochrome. 4

OR

d) State and explain Beer's law and write it's deviations in applicability. 7
e) What is absorption maximum? Write about different factors affecting λ_{max} of organic compounds. 7

2 a) Write the principles of IR spectroscopy. 4
b) Explain different types of molecular vibrations in IR spectroscopy. 6
c) Write about finger print region and functional group region in IR spectrum. 4

OR

d) Write about different sample handling techniques in IR analysis of organic compounds. 7
e) Describe different types of detectors used in IR spectrophotometers. 7

3 a) Explain the following:
i) Radiative and non-radiative process 7
ii) Describe the different of components of NMR spectrometer with neat labeled diagram. 7

OR

b) Explain the principles of fluorescence and phosphorescence phenomena. 4
c) Write about different ionization techniques in mass spectroscopy. 10

4 a) Describe different ion – selective electrodes used in potentiometric titrations. 7
b) Write short notes on nepheloemetry and turbidometry. 7

OR

c) Write about different types of amperometric titrations. 7
d) Write the advantages and applications of conductometric titrations. 7

5 a) Explain the principles of HPLC technique. 4
b) Write about column packing materials and mobile phase solvents used in HPLC technique. 6
c) Compare HPLC and HPTLC techniques in applications. 4

OR

d) Write the theory and principles of electrophoresis technique. 7
e) Write about different types of detectors used in gas chromatography. 7

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Code No. 4235

FACULTY OF PHARMACY

B. Pharmacy 4/4 I – Semester (Suppl.) Examination, April 2017

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. 7
b) Write the synthesis, mode of action and uses of pethidine and lidocaine. 4+3

OR

c) Write the SAR of para amino benzoic acid derivatives. 7
d) Write a note on morphine and its analogues. 7

2 a) Write in detail about alkylating agents. 7
b) Write a note on aminoglycoside antibiotics. 7

OR

c) Write the SAR of penicillins. 7
d) Write a note on tetracyclines. 7

3 a) Classify antiviral agents and write the synthesis of zidovudine. 7
b) Write a note on antifungal agents. 7

OR

c) Write the life cycle of malarial parasite and describe the 8-aminoquinolines used in malaria. 4+3
d) Outline the synthesis, mode of action and IUPAC nomenclature of chloroquine and pyrimethamine. 3+4

4 a) Write a note on benzodiazepines. 7
b) Outline the synthesis, nomenclature of diazepam, phenobarbitone. 4+3

OR

c) Write a note on antiparkinsonism agents. 7
d) Write a note on hydantoins. 7

5 a) Discuss biochemical role of water soluble vitamins and their prophylactic and therapeutic uses. 7
b) Write in brief about essential amino acids. 7

OR

c) Write a note on development of protein drugs. 8
d) Explain the biochemical role of any two fat soluble vitamins. 6

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