SLR-Z – 1

Seat No.	

M.Pharmacy (Semester – I) Examination, 2015
PHARMACEUTICS
(CGPA Pattern)
Advanced Pharmaceutical Analysis

Day and Date : Tuesday, 5-5-2015 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(3×10=30)**

1) Identify the molecule whose spectra are provided.

2) Explain theory, instrumentation and applications of differential scanning calorimeter.

3) Explain ELISA with its applications.

4) Write notes on X-ray diffraction and equipment validation.

B. Answer **all** : **(2×20=40)**

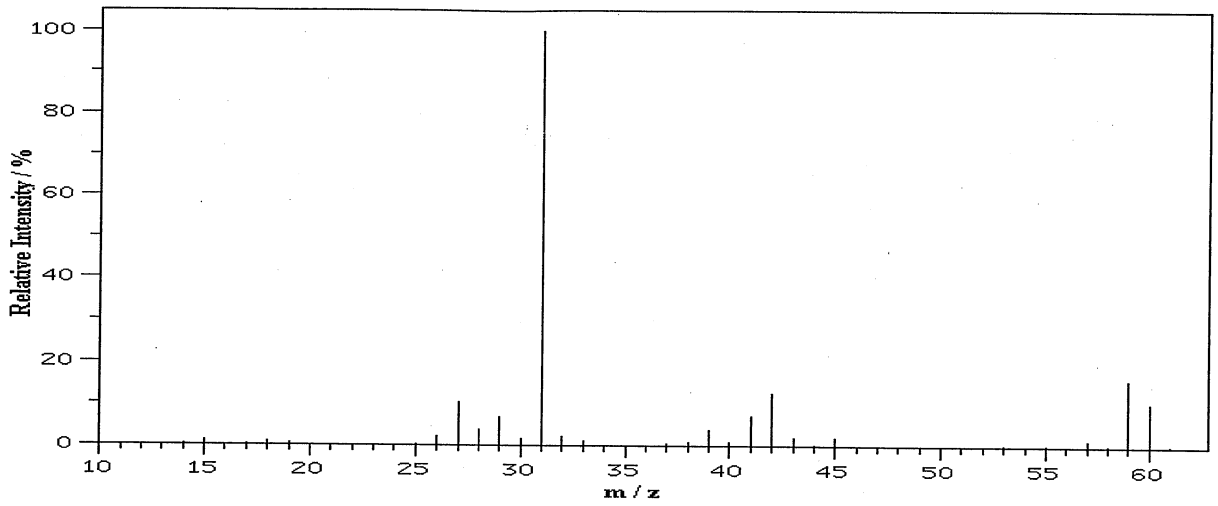
5) How will you approach the analysis of infrared spectrum ? Discuss the various techniques employed for placing the sample in the path of infrared radiations.

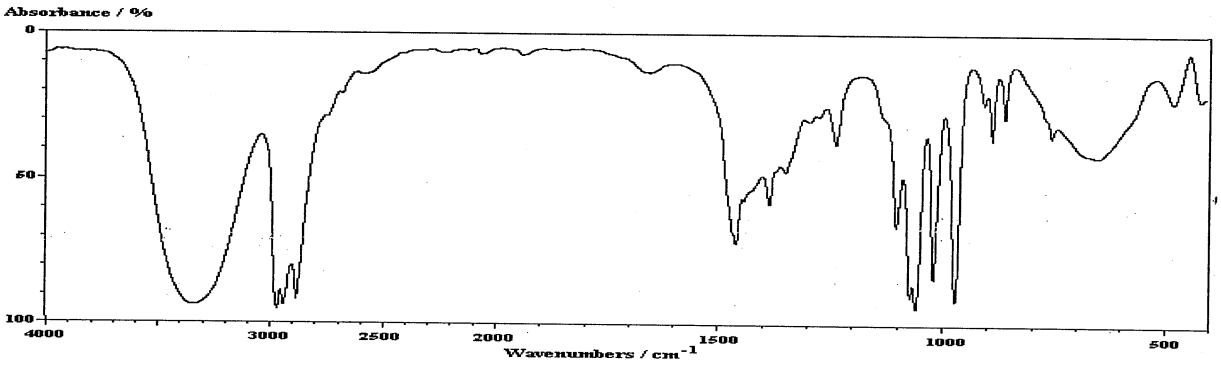
6) Explain the chromatography with normal, reverse phase, binary and gradient. Explain how components are separated in chromatography. Give the applications of chromatography.

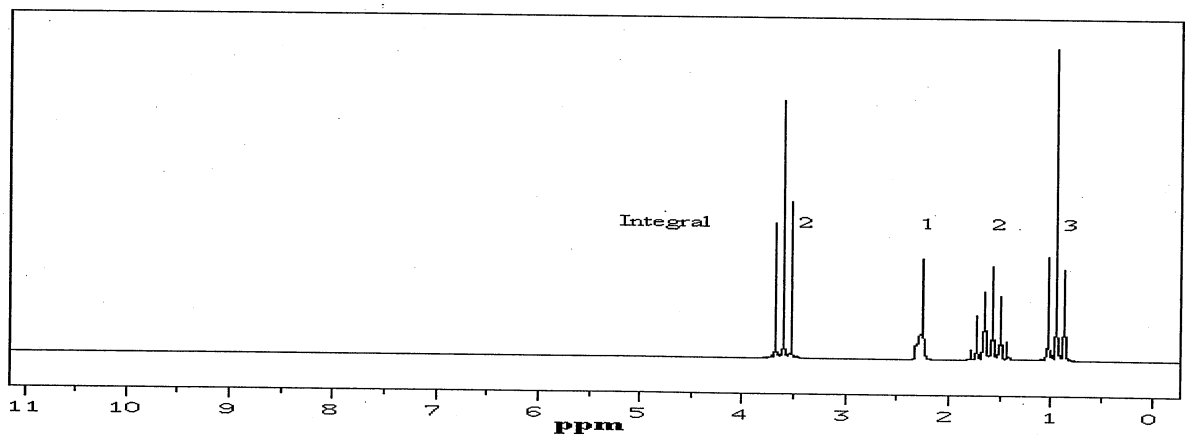
P.T.O.

SLR-Z – 1

Spectra







SLR-Z – 10

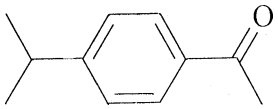
Seat No.	

M.Pharmacy (Semester – I) Examination, 2015
PHARMACEUTICAL CHEMISTRY
Advanced Pharmaceutical Chemistry – I (CGPA Pattern)

Day and Date : Thursday, 7-5-2015 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) With the help of basic rules of disconnection approach describe the synthesis of following mentioned compound with reagents required.



2) Give the synthetic route for Terfinadine and Nifedipine by applying disconnection approach.

3) Classify HIV RT inhibitors and explain any two RT inhibitors with their binding interaction with HIV RT. Write a note on resistance to HIV RT inhibitors.

4) Write short notes on **any two** :
   a) Kcat inhibitors
   b) Xanthin oxidase inhibitors
   c) Role of aromatase in cancer.

B. Answer the following : **(20×2=40)**

5) How do the functional groups aid the medicinal chemist in the development of prodrugs. Write in detail how first pass metabolism and reduce the side effects of drugs can be overcome by prodrug approach.

6) Elaborate in detail the biological role of HIV reverse transcriptase in the life cycle of HIV. Classify HIV RT inhibitors and explain any two inhibitors with their binding interaction with HIV RT. Write a note on resistance of HIV RT inhibitors.

SLR-Z – 12

Seat No.	

M. Pharm. (Semester – II) (CGPA Pattern) Examination, 2015
PHARMACEUTICS
Advanced Pharmaceutics – II (New)

Day and Date : Wednesday, 6-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

I. Answer **any three** : **(10×3=30)**

1) Define liposome. Describe in detail methods for preparation of liposomes.
2) Describe in detail various approaches to colon specific drug delivery.
3) Discuss about chronopharmacology, chronotherapeutics and chronotherapy in cancer treatment.
4) Explain in detail osmotic pump and hydrodynamically balanced system for oral controlled release.

II. Answer the following : **(20×2=40)**

1) Explain approaches and technologies for TDDS. Add a note on penetration enhancers.
2) What are the mechanisms of mucoadhesion ? Write a note on buccal and nasal drug delivery.

———————

SLR-Z – 13

Seat No.	

M.Pharm. (Pharmaceutics) (Semester – II) Examination, 2015
(New – CGPA Pattern)
ADVANCED PHARMACEUTICS – III

Day and Date : Friday, 8-5-2015 Max. Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) Define Pharmacokinetic Modeling. Describe one compartment open model IV bolus.
2) Describe the physiological factors affecting half life and duration of action.
3) Write a note on Chrono pharmacokinetics.
4) Describe the protocol for the study design for bioavailability/bioequivalence study.

B. Answer the following questions : **(20×2=40)**

5) Write a detailed note on factors affecting absorption.
6) a) Describe the structure of cell membrane. Add a note on carrier mediated transport.
   b) Enlist the non renal routes of excretion. Discuss in details Salivary route of excretion.

———————

SLR-Z – 14

Seat No.	

M.Pharmacy (Semester – II) Examination, 2015
(New CGPA Pattern)
PHARMACEUTICS
Sterile Product Formulation And Technology

Day and Date : Monday, 11-5-2015 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) What is importance of preformulation in drug delivery system ? Describe in detail preformulation aspects of developing parenteral products.
2) Explain in detail applications of protein peptide drug delivery system in sustained release parenterals.
3) Explain in detail temperature and humidity control parameters in manufacturing of parenterals.
4) Explain physicochemical properties of materials used in formulation of liposomes and niosomes.

B. Answer the following : **(20×2=40)**

1) Explain in detail sterile diagnostics and radiopharmaceuticals.
2) What are parenteral suspension and emulsions ? Explain formulation and evaluation of parenteral suspensions.

———————

SLR-Z – 16

Seat No.	

Master of Pharmacy (Quality Assurance) (Semester – II) (New CGPA Pattern) Examination, 2015
QUALITY ASSURANCE TECHNIQUES – II

Day and Date : Wednesday, 6-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

***Instruction** : Figures to the **right** indicate **full** marks.*

A. Answer **any three** : **(10×3=30)**

1) Discuss the strategy for analytical method validation.
2) Give conditions of patentability. What are the exclusions from patenting ?
3) Describe the methodology of qualification of pharmaceutical equipments.
4) Describe the importance, contents and benefits of Master Validation Plan.

B. Answer the following : **(20×2=40)**

5) Giving relevant examples explain the major phases and types of Pharmaceutical Validation.
6) i) Write a note on validation of services.
   ii) Describe the criteria of inclusion of parameters in method validation.

SLR-Z – 17

Seat No.	

M.Pharmacy (Semester – II) Examination, 2015
(New – CGPA Pattern)
QUALITY ASSURANCE
Quality Assurance Technique – III

Day and Date : Friday, 8-5-2015 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Answer **any three** : **(3×10=30)**

   1) Name and define typical validation characteristic which should be considered for analytical method validation (ICH).

   2) What is the importance of dissolution test ? Explain its operational qualifications.

   3) What is the goal of CPCSEA guidelines ? Give the guidelines for anesthesia and euthanasia as per CPCSEA.

   4) What is biostatics ? Explain the graphical presentation of data with example. What is the regression analysis ?

2. Answer **all** : **(2×20=40)**

   5) What are cGMPs ? Define drug product, strength and batch. Give guidelines for sampling and testing of in-process material and drug products in establishing appropriate process control. Discuss process validation.

   6) Why HPLC performance is verified ? Discuss the performance verification of pump, injector and UV-visible detector modules in HPLC.

———————

SLR-Z – 18

Seat No.	

Master of Pharmacy (Semester – II) (New CGPA Pattern) Examination, 2015
QUALITY ASSURANCE
Quality Control

Day and Date : Monday, 11-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

***Instruction** : Figures to the **right** indicate **full** marks.*

A. Answer **any three** : **(10×3=30)**

1) Give an elaborative review on evaluation of label paper and paper boards.
2) Explain the significance of clinical trials. Outline the design for a clinical trial.
3) Giving relevant examples explain the role of ICH in continual improvement in Pharmaceutical Quality System.
4) Describe the role of QC in packaging department.

B. Answer the following : **(20×2=40)**

5) i) Discuss about the need and process of development of product package inserts.
   ii) Describe the role of statistics in the regulatory approval process of drug product.
6) Describe the approaches used for product development by Quality by Design.

SLR-Z – 19

Seat No.	

M.Pharmacy (Semester – II) Examination, 2015
PHARMACEUTICAL CHEMISTRY
Advanced Pharmaceutical Chemistry – II (New CGPA Pattern)

Day and Date : Wednesday, 6-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) Explain in detail, how prostaglandins are synthesized using microbial bioconversion.
2) Discuss the drugs used in the treatment of Parkinsonism.
3) Write a note on enzyme immobilization and its applications.
4) Write short notes on **any two** :
   a) Targets of Alzheimer's disease drug discovery
   b) Enzyme immobilization
   c) Techniques of separation of recimic mixtures

B. Answer the following : **(20×2=40)**

5) What is combinatorial chemistry approach ? With suitable examples, describe in detail the techniques of combinatorial library synthesis.
6) With neat figure explain the life cycle of HIV, Classify anti-HIV drugs and explain HIV protease inhibitors. Add you understanding on resistance to HIV reverse transcriptase inhibitors.

———————

SLR-Z – 2

Seat No.	

M.Pharmacy (Semester – I) Examination, 2015
(CGPA Pattern)
Pharmaceutics
ADVANCED PHARMACEUTICS – I

Day and Date : Thursday, 7-5-2015 Max. Marks : 70
Time : 10.30. a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) Define the term polymer. Discuss the types and applications of polymers in pharmacy.
2) Explain the factors to be considered during the selection of carrier for solid dispersion. Add a note on characterization of solid dispersion.
3) Highlight the process of accelerated stability testing of pharmaceutical products.
4) Discuss the various types of granulation techniques. Add a note on the need of granulation.

B. Answer the following : **(20×2=40)**

5) What is hydrotrophy ? Explain the various methods by which hydrotrophy can be achieved. Discuss the applications of hydrotrophy in pharmacy.
6) Describe the theories of dissolution. Highlight the factors affecting dissolution rate. How can the dissolution rate be improved ?

———————

SLR-Z – 20

Seat No.	

M. Pharmacy (Semester – II) Examination, 2015
PHARMACEUTICAL CHEMISTRY (New CGPA Pattern)
Advanced Pharmaceutical Chemistry – III

Day and Date : Friday, 8-5-2015 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) With examples express your views on how important target selection and different methods of lead identification process in drug discovery.
2) Describe with suitable examples the role of amine and amide groups in establishing binding with receptors.
3) Compare structure based drug design and ligand based drug design.
4) Write short notes on **any two** :
   a) Chemoinformatics
   b) Pharmacogenomics
   c) Montecarlo simulations.

B. Answer the following : **(20×2=40)**

5) What are force fields and with detail mathematical expressions describe the parameterization of force fields with examples.
6) Write short notes on **any two** :
   a) Method of determining lipophilicity and electronic parameters computationally
   b) Hansch QSAR analysis
   c) 3D QSAR techniques.

SLR-Z – 21

Seat No.	

Master of Pharmacy (Semester – II) (New CGPA Pattern) Examination, 2015
PHARMACEUTICAL CHEMISTRY
Quality Control

Day and Date : Monday, 11-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

***Instruction** : Figures to the **right** indicate **full** marks.*

A. Answer **any three** : **(10×3=30)**

1) Give an elaborative review on evaluation of label paper and paper boards.
2) Explain the significance of clinical trials. Outline the design for a clinical trial.
3) Giving relevant examples explain the role of ICH in continual improvement in Pharmaceutical Quality System.
4) Describe the role of QC in packaging department.

B. Answer the following : **(20×2=40)**

5) i) Discuss about the need and process of development of product package inserts.
   ii) Describe the role of statistics in the regulatory approval process of drug product.
6) Describe the approaches used for product development by Quality by Design.

SLR-Z – 22

Seat No.	

M.Pharm. (Semester – II) Examination, 2015
(New CGPA Pattern)
PHARMACEUTICAL CHEMISTRY
(Therapeutic Drug Monitoring)

Day and Date : Monday, 11-5-2015 Max. Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) Explain the variations caused in laboratory tests due to drugs.

2) Explain in details TDM of Antiretroviral drugs.

3) Discuss various strategies used to improve patient compliance.

4) Describe the principle and procedure of RIA.

B. Answer the following : **(20×2=40)**

5) Write in details about TDM of Lidocaine. Add a note on dosing guidelines for Lidocaine.

6) Describe clinical applications of TDM and give indications for TDM.

SLR-Z – 3

Seat No.	

M.Pharm. (Semester – I) (CGPA Pattern) Examination, 2015
Pharmaceutics
BIOPHARMACEUTICS AND PHARMACOKINETICS (Elective)

Day and Date : Saturday, 9-5-2015 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(10×3=30)**

1) How non linear kinetics of a drug is detected ? Explain the causes of non linearity and significance. **10**

2) Enlist the non-renal routes of excretion. Describe in detail Enterohepatic cycling of drug. **10**

3) Describe in detail various Dosage form factors affecting on absorption. **10**

4) What is drug distribution ? Explain the various factors affecting on drug distribution. **10**

B. Answer the following : **(20×2=40)**

5) What is Multicompartment modeling ? Explain the two compartment open modeling for intravenous bolus administration and intravenous infusion. **20**

6) What is bioavailability ? Give the method for enhancement of bioavailability. **20**

SLR-Z – 6

Seat No.	

M.Pharmacy (Semester – I) Examination, 2015
QUALITY ASSURANCE
(CGPA Pattern)
Advanced Pharmaceutical Analysis

Day and Date : Tuesday, 5-5-2015 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(3×10=30)**

1) Identify the molecule whose spectra are provided.

2) Explain theory, instrumentation and applications of differential scanning calorimeter.

3) Explain ELISA with its applications.

4) Write notes on X-ray diffraction and equipment validation.

B. Answer **all** : **(2×20=40)**

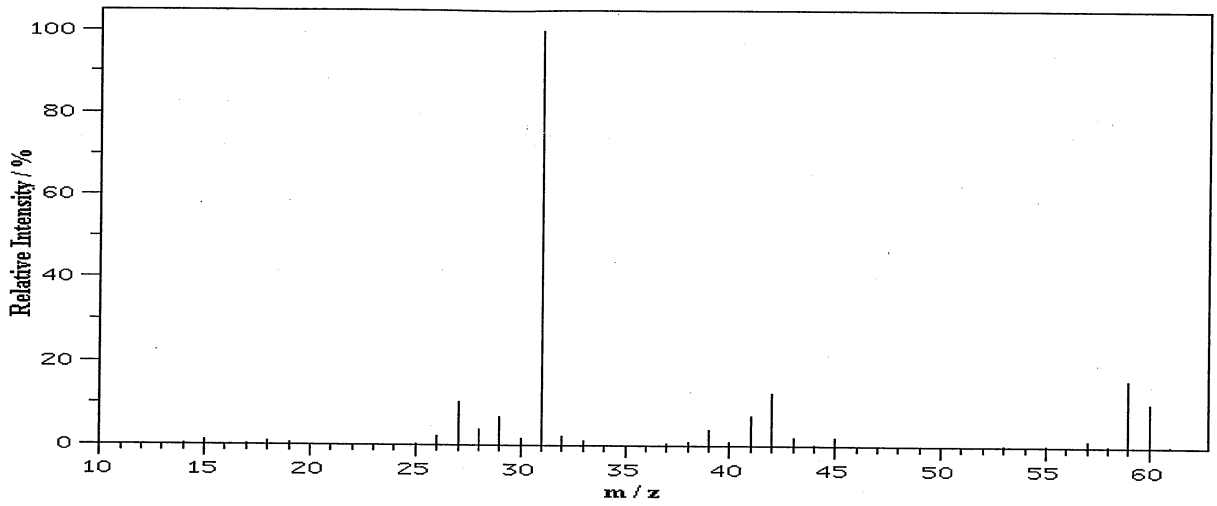
5) How will you approach the analysis of infrared spectrum ? Discuss the various techniques employed for placing the sample in the path of infrared radiations.

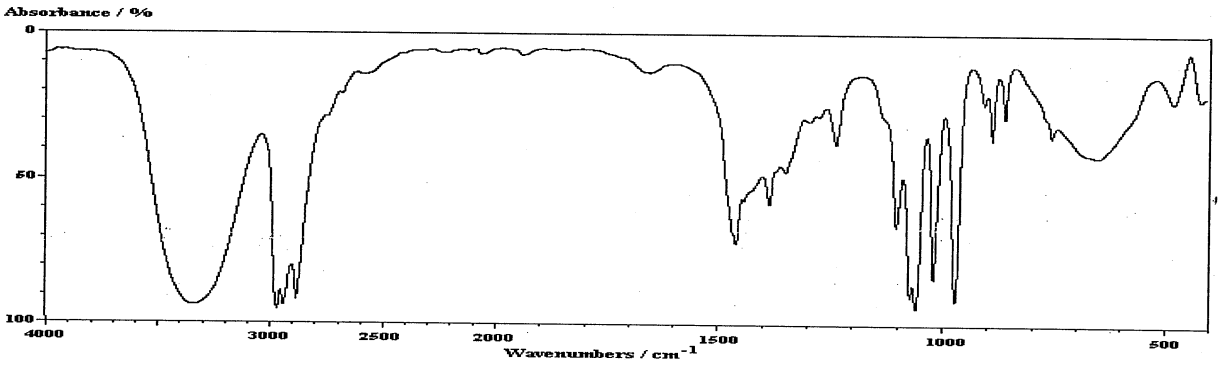
6) Explain the chromatography with normal, reverse phase, binary and gradient. Explain how components are separated in chromatography. Give the applications of chromatography.

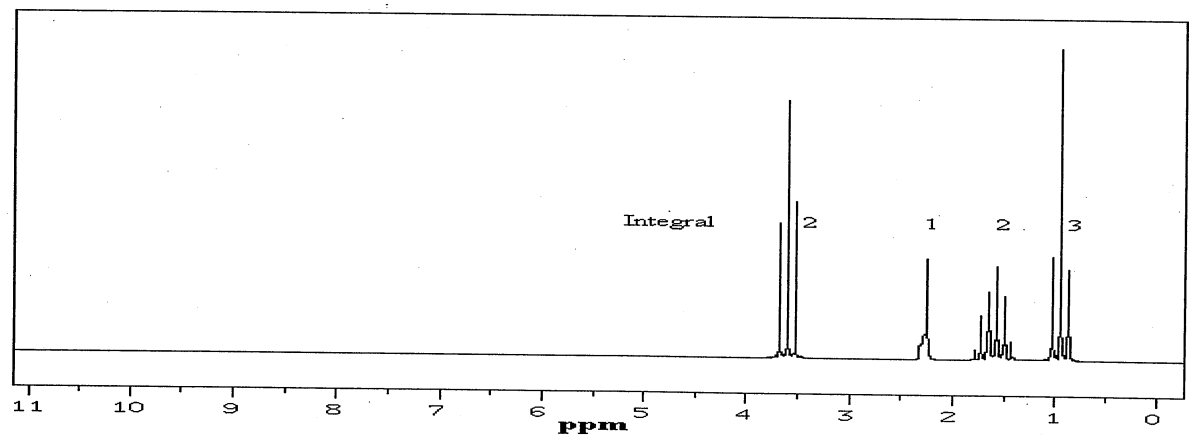
P.T.O.

SLR-Z – 6

Spectra







SLR-Z – 7

Seat No.	

M.Pharm. (Quality Assurance) Semester – I Examination, (CGPA Pattern), 2015
QUALITY ASSURANCE TECHNIQUES – I

Day and Date : Thursday, 7-5-2015 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

***Instruction** : Figures to the **right** indicate **full** marks.*

A. Answer **any three**. **(10×3=30)**

1) Describe the Microbiological Limit Tests for biological evaluation of pharmaceutical ingredients.

2) Compare the different quality systems that are regulating the pharmaceutical industry.

3) Explain the cGMP guidelines for the prevention of mix-ups and cross contamination during production.

4) What is meant by the terms NDA, ANDA, SNDA ? Explain in detail the process involved in NDA.

B. Answer the following. **(20×2=40)**

5) What is Quality Audit ? What is the scope of Quality Audit ? Explain in detail the documentation used in internal audits.

6) What is meant by Non-clinical drug testing ? Give a detailed account of key provisions of GLP regulations for non-clinical testing laboratories.

———————

SLR-Z – 8

Seat No.	

M.Pharm. (Quality Assurance) (Semester – I) (CGPA Pattern) Examination, 2015
QUALITY ASSURANCE (Elective)

Day and Date : Saturday, 9-5-2015 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

Instruction *: Figures to the* ***right*** *indicate* ***full*** *marks.*

A. Answer **any three** : **(10×3=30)**

1) Explain the pharmacopeial tests to evaluate sustained release formulations.
2) Compare the GMP regulations of different countries.
3) Explain the procedure to implement CAPA system in Pharma industry.
4) Describe the Master production and control documents in pharma manufacturing.

B. Answer the following : **(20×2=40)**

5) What is Quality Audit ? What is the scope of Quality Audit ? Explain in detail the important types of quality audits.
6) Explain the process of preparation and control of standard operating procedures.

———————

SLR-Z – 9

Seat No.	

M.Pharmacy (Semester – I) Examination, 2015
PHARMACEUTICAL CHEMISTRY
(CGPA Pattern)
Advanced Pharmaceutical Analysis

Day and Date : Tuesday, 5-5-2015 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

A. Answer **any three** : **(3×10=30)**

1) Identify the molecule whose spectra are provided.

2) Explain theory, instrumentation and applications of differential scanning calorimeter.

3) Explain ELISA with its applications.

4) Write notes on X-ray diffraction and equipment validation.

B. Answer **all** : **(2×20=40)**

5) How will you approach the analysis of infrared spectrum ? Discuss the various techniques employed for placing the sample in the path of infrared radiations.

6) Explain the chromatography with normal, reverse phase, binary and gradient. Explain how components are separated in chromatography. Give the applications of chromatography.

P.T.O.

SLR-Z – 9

Spectra