Total No. of Questions : 6]

SEAT No. :

P2021

[Total No. of Pages : 2

[5552] - 11
F. Y. B. (Pharmacy)
1.1.1T - PHARMACEUTICS - I
(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***Answer to the TWO Sections should be written in separate books.***
2) ***Neat diagram must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Attempt any one. **[10]**

Define dosage form. Discuss the classification of dosage form and add a note on different routes of drug administration.

OR

Write the history of pharmacy profession and industry in India, also write a note on career opportunities after pharmacy graduation.

Q2) Attempt any Five **[15]**

a) What are excipients? Explain the different flavours used in pharmaceuticals.

b) Write the different sources of drug with suitable examples.

c) What is pharmacopoeia? Add a note on Indian Pharmacopoeia

d) Describe Homeopathy as an alternate system of medicine.

e) Write the principles of Ayurveda.

f) Write the scope of pharmaceutical engineering.

g) Write the preservatives used in liquid oral formulations.

P.T.O.

Q3) Write Short Notes (Any TWO) **[10]**

a) Principles of Siddha and Unani.

b) Pharmacy code of ethics.

c) Scope of Formulation Development and Hospital pharmacy.

d) USP

SECTION - II

Q4) Attempt any one **[10]**

Discuss physicochemical properties to be studied for preformulation of liquid dosage form.

OR

Discuss in detail formulation aspect of Pharmaceutical solutions.

Q5) Attempt any Five. **[15]**

a) Discuss quality control test for solutions.

b) Explain mechanism of solubilization of dill oil in Concentrated Dill Water I.P.

c) Why excipients are used along with drug to formulate dosage form?

d) Why excessive heating of glycerin is avoided during preparation of paints?

e) Write importance of stability study.

f) Discuss formulation of simple linctus and give direction for its administration.

g) Write difference between quality control and quality assurance.

Q6) Write Short Notes (Any TWO) **[10]**

a) Enema.

b) Bulk drug characterization.

c) Sweeteners in pharmaceuticals.

d) Concept of Quality Assurance.

* * *

Total No. of Questions :6]

SEAT No. :

P2022

[Total No. of Pages : 2

[5552]-12
F.Y.B. Pharmacy
MODERN DISPENSING PRACTICES
(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must to be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of Calculator is allowed.***

SECTION- I

Q1) Answer any one. **[10]**

a) Explain in detail Good compounding and dispensing practices.

b) Define Posology. Explain factors affecting dose of drug.

Q2) Answer any five. **[15]**

a) Differentiate compounding and dispensing.

b) Give the types of prescriptions.

c) Describe Prescription filling.

d) Explain drug profile and give its importance.

e) Explain importance of storage conditions of formulations.

f) Calculate the dose for child with age of 6 and 12 years when dose is 150mg.

g) In what proportions the 6% and 15% potassium permagnate solution should be mixed to prepare 1000 ml of 11% solution.

Q3) Write a short note on (any two) **[10]**

a) Containers and closures for dispensed products.

b) Pricing of prescription

c) Purchase and stock records of medicines.

d) Labeling of dispensed medicines.

P.T.O.

SECTION-II

Q4) Answer any one. **[10]**

a) Describe in detail Physicochemical incompatibility.

b) Describe in detail steps in patient counseling.

Q5) Answer any five. **[15]**

a) Explain in brief Phamacovigilance.

b) Explain drug information services.

c) Explain in brief role of pharmasist in adverse drug reactions.

d) Describe role of Pharmacist in HIV/AIDS.

e) Explain patient counselling in asthmatic condition.

f) Describe structure and design of retail drug store.

g) Explain methods to remove therapeutic incompatibility.

Q6) Write a short note on (any two). **[10]**

a) Legal requirements for establishment and maintenance of drug store.

b) Role of pharmacist in healthcare and eduction.

c) Self medication

d) Patient counseling in hypertension and diabetic patients.

Total No. of Questions : 6]

SEAT No. :

P2023

[Total No. of Pages : 2

[5552]-13
F.Y. B.Pharmacy
PHARMACEUTICAL INORGANIC CHEMISTRY
(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Attempt any one of the following. **[10]**

a) What is physiological acid base balance? Discuss the electrolytes used in acid-base therapy. Comment on electrolyte combination therapy.

b) Give principle involved in limit test for arsenic. Draw well labeled diagram of arsenic limit test apparatus with its specification. Give the role of lead acetate cotton plag in arsenic limit test.

Q2) Solve any four of the following. **[15]**

a) Define :
   i) Pharmacopoeia
   ii) Monograph. Enlist contents of individual monograph.

b) Explain solubility parameters as per I.P.

c) Define hardness of water. Explain any two methods to remove hardness of water.

d) What are GIT acidifying agents? Discuss any one agent.

e) Give brief history of I.P.

f) Discuss official quality control tests for water.

g) Give the principle involved in limit test for Iron.

Q3) Solve any two of the following. **[10]**

a) Write a note on saline cathartics.

b) Give principle involved in lead limit test.

c) Give physiological role of sodium, potassium, phosphate and calcium ion.

d) What are antacids? Give preparation, properties and uses of Aluminium hydroxide gel and sodium bicarbonate.

P.T.O.

SECTION - II

Q4) Attempt any one of the following. **[10]**

a) Give absorption, distribution and biological role of Iron. Give preparation, properties, uses and storage of -
   i) Ferrous Sulphate.
   ii) Ferric ammonium citrate.
   iii) Copper sulphate.

b) What are topical agents? Explain mechanism of action of Antimicrobial agents and astringents. Discuss Preparation, Properties, and uses of sodium hypochlorite.

Q5) Solve any five of the following. **[15]**

a) What are antidotes? Classify them with examples.
b) Give preparation, properties and uses of sodium thiosulphate.
c) Discuss the preparation, properties and uses of any one topical protective agent.
d) Give the biological role of iodine in our body.
e) Write a note on inorganic cytotoxic agents.
f) Write a note on expectorants.
g) What are anticaries agents? Give role of fluorides as anticaries agents.

Q6) Solve any two of the following. **[10]**

a) Write a note on Radio opaque Contrast Media.
b) Give preparation, properties and uses of following inorganic agents -
   i) Potassium permanganate.
   ii) Ammonium chloride.
   iii) Lithum carbonate
c) Write a note on Zinc and copper as trace ions.
d) Give the biological role of oxygen. Write storage and labeling conditions for Nitrogen, Nitrous oxide and Carbon dioxide as inorganic gases.

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Total No. of Questions : 6]

SEAT No. :

P2024

[Total No. of Pages : 3

[5552]-14
F.Y. B.Pharm.
PHARMACEUTICAL ORGANIC CHEMISTRY - I
(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

SECTION - I

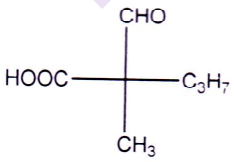
Q1) Define Elimination reactions and explain in detail mechanism, stereochemistry and factors affecting rate of E2 reactions. **[10]**

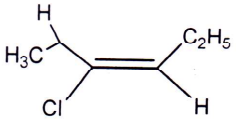
OR

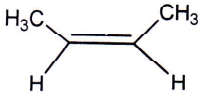
What is aromatic electrophilic substitution reaction? Mention any three types. Write down the mechanism of Friedel Craft alkylation. **[10]**

Q2) Answer the following. (Any five) **[15]**

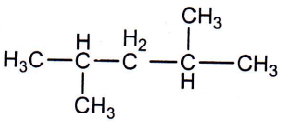
a) Assign R / S, E / Z or Cis / Trans configuration to following.

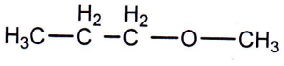
i) 

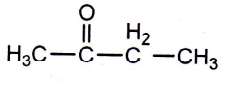
ii) 

iii) 

b) Write IUPAC names for following structures.

i) 

ii) 

iii) 

P.T.O.

c) Write any three methods of preparation of alkanes.

d) Define following terms with suitable examples.

i) Carbocation

ii) Carbene

iiii) Nitrene

e) Draw structures from IUPAC names of following;

i) 2, 4, 6-trinitro phenol.

ii) Methyl propanoate.

iii) Methoxy ethane.

f) Explain hyperconjugation with example.

g) Define the terms Arrheneius acid, lewis acid, Lowry bronsted acid.

Q3) Answer the following. (Any two) **[10]**

a) Discuss stability of Primary, Secondary and Tertiary carbocations.

b) Explain the addition-elimination and elimination-addition mechanisms of nucleophilic aromatic substitution.

c) Classify organic compounds on the basis of elemental composition (at least five classes with suitable examples).

d) Define hybridization. Explain SP^2 hybridization with example.

SECTION - II

Q4) Classify Structural isomers with example? Explain cis/trans isomers with example. **[10]**

OR

Explain the directing effects of following functional groups towards electrophilic substitutions on benzene: **[10]**

i) –OH ii) $-NO_2$

Q5) Answer the following. (any five) **[15]**

a) Arrange following in order of increasing acidity with explanation

i) Acetic acid

ii) Trichloroacetic acid

iii) Chloroacetic acid

b) Explain Hoffman rule for 1, 2 elimination reaction?

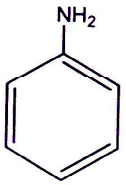
c) Write a note on Diels alder reaction.

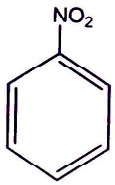
d) Explain Tautomerism with example.

e) State and explain Anti-Markovnikoff Rule.

f) Explain Inductive effect and electromeric effect with example.

g) Draw all possible resonating structures of following.

i) 

ii) 

Q6) Answer the following. (any two) **[10]**

a) Explain Inter and Intera molecular forces of attraction.

b) Classify any five types of chemical reactions with suatable examples.

c) Explain free radical reaction mechanism.

d) What are alkynes? Write their any two methods of preparation and two reactions.

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Total No. of Questions : 6]

SEAT No. :

P2025

[Total No. of Pages : 2

[5552]-15
First Year B.Pharmacy
1.1.5 HUMAN ANATOMY AND PHYSIOLOGY - I
(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Describe the processes that transport the substances across plasma membrane. **[10]**

OR

With the help of neat labeled diagram Explain structure of plasma membrane. Discuss the structure and function of membrane proteins.

Q2) Answer the following: (any five) **[15]**

a) Classify epithelial tissues and write the functions of each type.

b) Explain the ABO system of blood grouping.

c) Write the compositions of blood.

d) Define the terms anemia, Polycythemia and hypersensitivity.

e) Discuss Erythropoiesis.

f) Draw a neat-labeled diagram of cell and write the functions of golgi complex.

g) Explain the structure and functions of cytoskeleton.

Q3) Write short note on (any two) **[10]**

a) Muscular tissues.

b) Haemostasis.

c) Connective tissue.

d) WBCs

P.T.O.

SECTION - II

Q4) Explain composition, formation and circulation of lymph. Add note on structure of spleen. **[10]**

OR

Describe location and gross anatomy of heart. Add a note on SA nodal delay.

Q5) Answer the following. (Any 5) **[15]**

a) Write a note on AV valves.

b) Explain the structure and functions of liver.

c) Define the terms myocardial infarction, angina & congestive heart failure.

d) Draw neat labeled diagram T.S. of stomach.

e) How baroreceptors regulate blood pressure.

f) Describe the structure of salivary glands.

g) Explain structure of lymph node.

Q6) Write short note on (any two) **[10]**

a) Electro-cardiogram (ECG).

b) Small intestine.

c) Blood vessels.

d) Renin-agiotesin-aldosterone system.

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Total No. of Questions : 6]

SEAT No. :

P2026

[Total No. of Pages : 2

[5552] - 16

First Year B. Pharmacy

1.1.6. COMMUNICATION AND SOFT SKILL DEVELOPMENT

(2013 Pattern) (Semester - I)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two Sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Write meaning and importance of communication. Explain objectives of Communication. Describe the different modes of overcoming barriers of communication. **[10]**

OR

Explain various parts of business letters. Explain the purpose and qualities of business correspondence.

Q2) Answer the following (Any 5): **[15]**

a) Difference between technical and general writing communication.

b) State the principles of thinking about purpose.

c) Language as a tool of communication.

d) Explain about abstract.

e) Explain need of Non verbal communication.

f) Write the salient features of electronic communication.

g) Explain importance of case writing.

P.T.O.

Q3) Write short note on (Any 2): **[10]**

a) Body Language

b) Graphic Language

c) Knowing the audience

d) Formal report

SECTION - II

Q4) Describe the applications of modern technology in communication. **[10]**

OR

What is globalization? State the advantages and disadvantages of globalization. Add a note on Email.

Q5) Answer the following (Any 5): **[15]**

a) Write the importance of preparing rough data.

b) Format of Enquiry letter.

c) Importance of written business correspondence.

d) Describe Intonation and rhythms.

e) Explain importance of tele communication.

f) Write the different conventional media.

g) Write email etiquettes.

Q6) Write short note on (Any 2): **[10]**

a) Notice and circular

b) Phonetic symbols

c) Resume

d) Empathy

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Total No. of Questions : 6]

SEAT No. :

P3392

[Total No. of Pages : 2

[5552] - 17
First Year B. Pharmacy (Semester - VIII)
COMPURWE APPLICATION AND BIOSTATISTICS
(2013 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Use ofprogranunable calculator is not allowed.***
4) ***Black figures to the right indicate full marks.***

SECTION - I

Q1) Describe the various sources for collection of data. Explain in detail about graphical representation of data. **[10]**

OR

Calculate mean, standard deviation and coefficient of variation for the frequency distribution of marks of 100 students given below:

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	5	12	32	40	11

Q2) a) Explain the steps needed to condense raw data into frequency table. **[5]**

b) Write a note on "χ^2 test". **[5]**

c) Given the two lines of regression as, 8X – 10Y + 66 = 0 and 40X–18Y–214 = 0. Find average of X & Y and correlation coefficient between X and Y. **[5]**

Q3) Answer the following (Any Five) **[15]**

a) A random sample of 20 tablets from a batch gives a mean active ingredient content 42 mg and standard deviation of 6 mg. Test the hypothesis that the population mean is 44 mg. (Table t value = 2.093).

P.T.O.

b) A box contains 5 red, 3 blue and 6 green bal is; if one ball is drawn at random from the box what is the probability that the ball is: I. Red and II. Green

c) Write a note on Accuracy and Precision.

d) Write a note on "Probability Distributions".

e) Explain different types of errors in hypothesis testing.

f) Define control, blind and placebo in experimental designs.

g) Find the range of the following raw data and put it as arrayed data: 7, 13, 5, 3, 4, 12, 13,4,3,4, 18, 19, 12,4, 13,8,4,9, 8,24.

SECTION II

Q4) a) Explain history and generations of computers. **[5]**

b) Write Note on Keyboard. **[2]**

c) Elaborate Multimedia. **[3]**

OR

a) Write difference between Compiler & Interpreter. **[5]**

b) Explain secondary memory with example. **[5]**

Q5) a) Explain Types of Operating systems. **[6]**

b) Discuss mouse. **[4]**

c) Detail about DVD. **[5]**

Q6) a) Convert (10110001)2 to decimal and (934)10 to binary form. **[5]**

b) Attempt following: **[10]**

i) Differentiate between Ms-Word and Ms-Excel.

ii) Explain application of computers in pharmacy.

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Total No. of Questions : 6]

SEAT No. :

P2027

[Total No. of Pages : 2

[5552]-21
First Year B. Pharmacy
1.2.1(T) PHARMACEUTICS - II
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Near labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What is the importance of size reduction in Pharmacy? Describe construction and working various grinding mills used in size reduction of solids on industrial scale. **[10]**

OR

Describe types of plastic as pharmaceutical packaging material in detail.

Q2) Answer the following (Any 5) **[15]**

a) Write a note on Water attack test.

b) Give merits and demerits of blister packing technique.

c) Write the factors affecting rate of filtration.

d) What is filter aid and what are its ideal characteristics?

e) Draw neat and well labeled diagram of Filter press.

f) What are factors affecting size reduction?

g) Write on filter leaf.

P.T.O.

Q3) Write short note on (Any 2) **[10]**

a) ROPP capping machine.

b) Sieving of powders.

c) Strip packing.

d) Types of glass.

SECTION - II

Q4) Draw and explain layout of liquid manufacturing and packaging section. **[10]**

OR

Write in detail on the mechanisms of drug absorption.

Q5) Answer the following (Any 5) **[15]**

a) Explain the terms bioavailability and bioequivalence.

b) Write on prevention of foam and aeration.

c) What are the mechanisms of liquid mixing?

d) What is the meaning Cmax, tmax and therapeutic window?

e) Write on impellers.

f) Describe tumbler mixer.

g) Define apparent volume of distribution and explain distribution of the drug.

Q6) Write short note on (Any 2) **[10]**

a) Planetary mixer.

b) Good manufacturing Practices.

c) Non renal routes of excretion.

d) Metabolism.

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Total No. of Questions : 6]

SEAT No. :

P2028

[Total No. of Pages : 2

[5552] - 22
First Year B. PHARMACY
1.2.1. DOSAGE FORM DESIGN
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain ideal properties of suspension and add a note on physical stability of suspension. **[10]**

OR

Define emulsion. Explain the additives of emulsion and write the quality control tests for emulsion.

Q2) Answer the following (Any 5) **[15]**

a) Explain different properties of powders.
b) Explain different tests for evaluation of powders.
c) Explain formulation aspects of tooth powder.
d) Add a note on effervescent granules.
e) Add a note on microemulsion.
f) Define suspension and explain various types of suspension.
g) Add a note on suspensions containing poorly wettable solids.

Q3) Write short note on (Any 2) **[10]**

a) Write a note on targeted drug delivery system.
b) Suspending Agents.
c) Add a note on angle of repose and its importance in solid dosage forms.
d) Add a note on stability of emulsion.

P.T.O.

SECTION - II

Q4) Define suppositories; explain formulation and evaluation aspects of suppositories. **[10]**

OR

Explain manufacturing and quality control aspects of radiopharmaceutical dosage forms.

Q5) Answer the following (Any 5) **[15]**

a) Write a note on Jellies

b) Define and classify different semisolid preparations.

c) Explain mechanism of dissolution.

d) Explain Q.C. tests for gels.

e) Define paste and explain types of paste.

f) Add a note on creams

g) Explain radioactivity and unit of radioactivity.

Q6) Write short note on (Any 2) **[10]**

a) Explain importance of solubility and dissolution in designing of dosage forms.

b) Factors affecting solubility.

c) Explain Noye's Whitney equation.

d) Displacement value.

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Total No. of Questions :6]

SEAT No. :

P2029

[Total No. of Pages : 2

[5552]-23
F.Y. B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY-II
(2013 Pattern) (Semester-II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Figures to the right side indicate full marks.***

SECTION-I

Q1) What are alcohols? Classify with suitable examples. Write any three methods of preparations and three reactions of alcohols. **[10]**

OR

Explain why aldehydes are more reactive than ketones for nucleophilic addition reaction and add a note on Cannizaro reaction?

Q2) Answer the following (any five) : **[15]**

a) Draw structures from IUPAC names of following.

i) 3-chloropentanal

ii) 3-pentanol

iii) 2-methoxy propane

b) Explain the preparation of diazonium salt.

c) How will you distinguish primary, secondary, and tertiary amine by simple chemical tests.

d) Explain the preparations of enamines with their examples.

e) Discuss any two methods of preparation of sulphonic acids.

f) Explain the methods of preparation of ether.

g) Explain the acidity of phenols.

P.T.O.

Q3) Write short note on (any two) : **[10]**

a) Oppenaur oxidations.

b) Haloform reactions.

c) Aldol condensation

d) Perkin reactions.

SECTION-II

Q4) Define and classify alky1 halides with any two structures from each class. Discuss in detail any three methods of preparation and reactions of alky1 halides. **[10]**

OR

Discuss reaction mechanism and factors affecting $SN^1$and SN^2 reactions.

Q5) Answer the following (any five) : **[15]**

a) Explain any two methods of preparation of amides.

b) Give any two methods of preparation of esters.

c) Discuss Transesterification reaction.

d) Define and classify functional derivatives of carboxylic acids.

e) Explain any two reactions of isocyanides.

f) Give any two methods of preparation of acid chloride.

g) Explain any two reactions of carboxylic acids.

Q6) Write short notes on (any two) : **[10]**

a) Substitution nucleophilic internal reaction.

b) Dieckmann reaction

c) Dicarboxylic acids.

d) Preparation and reactions of cyanide.

Total No. of Questions : 6]

SEAT No. :

P2030

[Total No. of Pages : 2

[5552]-24
F.Y. B. Pharmacy
HUMAN ANATOMY & PHYSIOLOGY - II
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Draw and enlist the parts of Brain. Describe in detail the Anatomy Cerebrum & add a note on functional areas of Cerebrum? **[10]**

OR

Draw a neat labeled diagram of Respiratory system. Describe in detail pulmonary ventilation? Add a note on physiological factors affecting respiration?

Q2) Answer the following (any five) **[15]**

a) Define the following terms
   i) Asthma
   ii) Emphysema
   iii) Bronchitis

b) Explain the structure of Trachea.

c) Explain physiology of Hearing.

d) Write a note on Cranial Nerves.

e) Explain Reflex Arc

f) Draw a neat labeled diagram of Human Ear

g) Explain the meninges of CNS.

Q3) Write notes on (any two) **[10]**

a) Spinal Nerves.

b) Limbic system.

c) Cerebrum.

d) Ventricles of Brain.

P.T.O.

SECTION - II

Q4) Draw a neat labeled diagram of internal structure of kidney and explain in physiology of urine formation. **[10]**

OR

Explain in detail structure and function of male reproductive system.

Q5) Answer the following (any five) **[15]**

a) Define the following terms

i) Hypothyrodism

ii) Endometriosis

iii) Diabetes Mellitus

iv) Nephritis

v) Pyelonephritis

b) Draw a neat labeled diagram of urinary system

c) Enlist the various hormones secreted hypothalamus and discus their functions

d) Explain Spermatogenesis

e) Draw a neat labeled diagram of ovary representing various stages of follicles.

f) Explain characteristics of normal urine

g) Explain physiological role of FSH and LH

Q6) Write notes on (any two) **[10]**

a) Renin-angiotensin-aldosterone system

b) Synthesis, storage and release if thyroid hormone

c) Process of urine formation

d) Spermatogenesis

Total No. of Questions :6]

SEAT No. : ____

P2031

[Total No. of Pages :2

[5552]-25
F.Y.B.Pharmacy
PHARMACOGNOSY
(2013 Pattern) (Semester-II)

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

Instructions to the candidates:

1) ***Answers to the two sections should be written in separte books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Black figures to the right indicate full marks.***
4) ***All questions are compulsory.***

SECTION-I

Q1) Attempt any one:

a) Explain in detail structure of plant cell along with function of each component of plant cell. **[10]**

OR

b) Explain in detail types and dynamics of ecostsyems along with a detail account of phytoremediation.

Q2) Attempt any Five **[15]**

a) Explain in detail relevance of biology to pharmaceutical sciences.

b) Explain in brief transcription.

c) Explain functions of meristematic tissues.

d) Explain microscopy of fruit.

e) Explain Role of gibberellins as plant growth regulator.

f) Explain artificial method of classification.

g) Enlist factors responsible for rapid degradation of habitats of western Ghats.

Q3) Write short notes on any two of following **[10]**

a) Economic botany.

b) Mendelian genetics.

c) Polyploidy breeding.

d) History and development of pharmacognosy.

P.T.O.

SECTION-II

Q4) Attempt any one **[10]**

a) Elaborate a detail morphological and microscopical account of bark.

OR

b) Explain in detail significance, site and pathways involved in photosynthesis.

Q5) Attempt any Five **[15]**

a) Explain application of hybridization for crop improvement.

b) Explain in brief applied biology.

c) Explain in brief reserve material in plant cell.

d) Explain in detail primary growth in plants.

e) Explain parasitic mode of nutrition.

f) Explain in brief binomial nomenclature.

g) Provide significance of pharmacognosy

Q6) Write short notes on any two of following **[10]**

a) Genetic code.

b) Unorganised drugs.

c) Cytokinins.

d) Significance of western Ghat biodiversity.

Total No. of Questions : 6]

SEAT No. :

P2032

[Total No. of Pages : 2

[5552]-26
First Year B. Pharmacy
PHARMACEUTICAL ANALYSIS - I
(2013 Pattern) (Semester - II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***All questions carry equal marks.***

SECTION - I

Q1) Explain theoretical consideration, limitations and solvents in non-aqueous titration. **[10]**

OR

Explain buffer in detail. What is buffer index? Derive an equation to calculate pH of buffer solution

Q2) Answer the following (any five). **[15]**

a) Define Primary standard. Enlist requirements of primary standards.

b) Explain student t- test.

c) Preparation and Standardization of 0.1 M Perchloric acid solution

d) What do you mean by Protogenic and Protophilic solvent explain with examples.

e) Define Molarity. Molalitv and Mole Fraction.

f) Explain Ostwald's theory.

g) Explain neutralization curve for weak acid and weak base with example.

Q3) Write short notes on (any two). **[10]**

a) Applications of non-aqueous titrations.

b Types of Non-aqueous solvents.

c) Minimization of errors in analysis.

d) Expression of concentration and strength of solution.

P.T.O.

SECTION - II

Q4) What are Argentimetric titrations? Give comprehensive account of different Precipitation titrations. **[10]**

OR

What is co-precipitation and how it is reduced? Give applications of Gravimetric analysis.

Q5) Answer the following (any five). **[15]**

a) How will you Prepare and standardize 0.1 N $AgNO_3$ solution.

b) Discuss advantages and limitations of Mohr's method.

c) Explain masking and demasking agents with suitable examples.

d) Differentiate between iodimetric and iodometric titration.

e) Explain assay of calcium gluconate as per I.P

f) How will you prepare and standardize 0.05 M disodium EDTA solution.

g) Explain digestion in gravimetry.

Q6) Write short notes on (any two). **[10]**

a) Sodium Nitrite Titration.

b) pM indicators.

c) Unit operations in Gravimetry.

d) Titanous Chloride titration.

Total No. of Questions :6]

SEAT No. :

P2033

[Total No. of Pages : 2

[5552]-31
S.Y. B.Pharmacy
PHYSICAL PHARMACEUTICS - I
(2013 Pattern) (Semester - III)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written on separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the properties of ideal and real gases with the help of suitable equations. Elaborate on compressibility factor. **[10]**

OR

Explain Gibbs phase rule. Explain one component systems with the help of phase diagram.

Q2) Answer any five : **[15]**

a) Write a note on Claudes method for liquefaction of gases.

b) Explain first law of thermodynamics.

c) Explain principles of aerosols containing liquefied propellents.

d) Define critical temperature, critical pressure and critical volume of gases.

e) State the Braggs equation.

f) Write a note on crystalline and amorphous solids.

g) Explain significance of glass transition temperature.

Q3) Answer any two : **[10]**

a) X ray crystallography

b) Two component system

c) Law of corresponding states.

d) Polymorphism

P.T.O.

SECTION - II

Q4) Prove that lowering of vapor pressure is a colligative property. Explain isopiestic method for determination of vapor pressure. **[10]**

OR

Explain Hildebrand solubility approach for non-ideal solutions.

Q5) Attempt any five : **[15]**

a) Why negative deviation occurs in Raoult's law?

b) Write rules to draw boiling point diagram.

c) Explain mechanisms for solubility of polar substances in water.

d) Write application of Nernst distribution law.

e) Explain in brief steam distillation.

f) State kohlrauchs law and its application.

g) Differentiate between Ideal solutions and Real solutions.

Q6) Write short note on any two : **[10]**

a) BCS classification.

b) Factors affecting solubility of gases in liquids.

c) Glass transition temperature.

Total No. of Questions : 6]

SEAT No. :

P2034

[Total No. of Pages : 2

[5552]-32
S.Y. B.Pharm.
PHARMACEUTICAL MICROBIOLOGY
(2013 Pattern) (Semester - III)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail cultivation of human viruses. **[10]**

OR

Write in detail contribution of Louis Pasteur in the field of Microbiology. **[10]**

Q2) Answer the following. (any five) **[15]**

a) Draw the structure of bacterial cell.
b) Write in short contributions of Antony Van Leeuwenhoek.
c) Write the importance and morphology of Penicillium.
d) Differentiate between prebiotics and probiotics.
e) Explain in short 'Reproduction of bacteria'.
f) Write the composition and use of Nutrient agar.
g) Differentiate between bacteria and viruses.

Q3) Write a short note on. (any two) **[10]**

a) Whittaker's five Kingdom concept.
b) Candida albicans.
c) Viable count as per microbial limit test.
d) Growth curve of bacteria.

SECTION - II

Q4) Write the classification of sterilization methods. Explain sterilization by radiations. **[10]**

OR

Write classification of different disinfectants with mode of action and applications. **[10]**

P.T.O.

Q5) Answer the following. (any five) **[15]**

a) Differentiate between live Vaccine and Killed Vaccine.

b) Write the principle of complement fixation test.

c) Differentiate between Exotoxins and Endotoxins.

d) What are Epitopes and Paratopes?

e) Write the applications of ELISA.

f) Explain 'IgA'.

g) Write advantages and disadvantages of membrane filtration.

Q6) Write a note on. (any two) **[10]**

a) Quality control of Vaccines.

b) Phenol coefficient test.

c) Complement system.

d) Autoclave.

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Total No. of Questions : 6]

SEAT No. :

P2035

[Total No. of Pages : 2

[5552]-33
S.Y. B.Pharm.
PHARMACEUTICAL BIOCHEMISTRY
(2013 Pattern) (Semester - III) (Theory)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain effect of substrate concentration on enzyme activity. **[10]**

OR

Explain Translation in Eukaryotic Cell.

Q2) Write short note on any five of the following. **[15]**

a) Biological role of Fructose and Starch.

b) Classification of proteins based on structure.

c) Fibrous Proteins.

d) Differentiation between Prokaryotic and Eukaryotic cell.

e) End Group analysis.

f) Applications of enzymes with emphasis on marker enzymes.

g) Genetic code of eukaryotic cell.

Q3) Explain any two of the following. **[10]**

a) Globular Proteins.

b) Biochemical Reaction.

c) Biological role of any three important amino acids.

d) Scope of Pharmaceutical Biochemistry in Pharmaceutical Sciences.

P.T.O.

SECTION - II

Q4) Give a detailed account of Glycogen catabolism. How this process is regulated? **[10]**

OR

Give a detailed account of Cholesterol biosynthesis. Explain how this process can be inhibited?

Q5) Attempt short notes on any five of the following. **[15]**

a) Urea Cycle.
b) Gluconeogenesis.
c) Vitamin B complex.
d) Breakdown of Purines.
e) Metabolism of Ketone bodies.
f) Glycogen metabolism.
g) Vitamin A.

Q6) Write notes on any two of the following. **[10]**

a) Beta oxidation of fatty acid with odd no. of carbons.
b) Brief Summary of Protein Metabolism.
c) TCA cycle and energetics.
d) Pentose Phosphate Pathway along with its significance.

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Total No. of Questions : 6]

SEAT No. :

P2036

[Total No. of Pages : 3

[5552]-34

S.Y. B.Pharm.

PHARMACEUTICAL ORGANIC CHEMISTRY - III

(2013 Pattern) (Semester - III) (Theory)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Answer to the two sections should be written in separate answer sheets.***
4) ***Draw neat diagrams and structures wherever necessary.***

SECTION - I

Q1) Discuss in detail conformational analysis of ethane and n-butane using energy profile diagrams. **[10]**

OR

Define conformation . Comment on conformational stabilities of cis and trans Decalins using the Newman projections formulae.

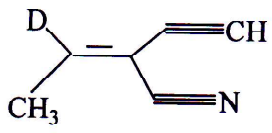
Q2) Answer the following. (Any five) **[15]**

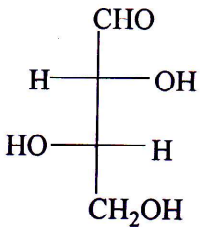
a) Define Configuration, Diastereomer and Meso compounds with one example of each.

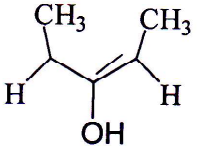
b) Differentiate between configuration and conformation.

c) What are α-amino acids? Discuss any two methods of synthesis of amino acids.

d) Assign Configuration to the following.

i) 

ii) 

iii) 

P.T.O.

e) What is Strecker's synthesis? Explain with reaction.

f) Describe chirality with suitable examples.

g) Comment on nomenclature of optical isomers.

Q3) Write short notes on. (Any two): **[10]**

a) N-terminal assay.

b) Resolution of racemic mixtures.

c) Conformational analysis of disubstituted cyclohexane.

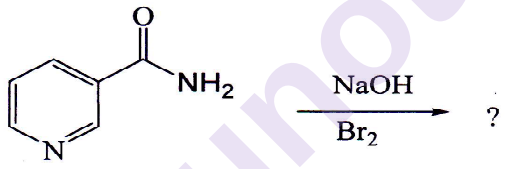
d) Enantiomerism.

SECTION - II

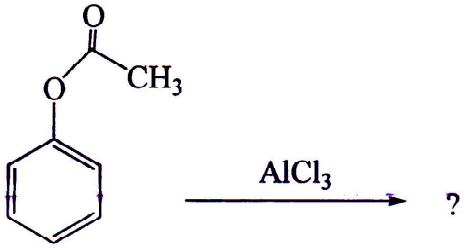
Q4) What are molecular rearrangements? Discuss Benzilic acid and Wolf rearrangement with mechanism. **[10]**

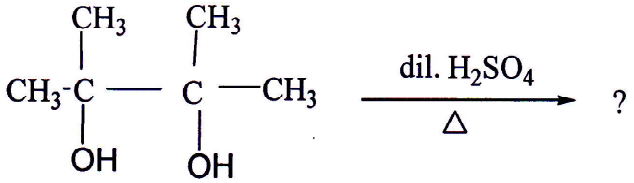
OR

Identify and complete the following reaction with mechanism involved.

a) 

b) 

c) 

d) 

Q5) Answer the following (Any five): **[15]**

a) Define nucleophilic rearrangement reactions. Enlist the rearrangements of electron deficient nitrogen atom.

b) Write any three reactions of anthracene.

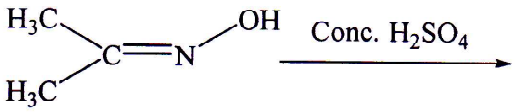
c) Discuss any one rearrangement to electron deficient Oxygen atom.

d) Explain stereochemistry of Pinacol-Pinacolone rearrangement reaction.

e) Explain reaction and mechanism of Curtius rearrangement.

f) Write any three preparation methods of naphthalene.

g) Complete the following reaction with mechanism.



Q6) Write short note on (Any two): **[10]**

a) Reactions of phenanthrene.

b) Bayer-Villiger oxidation.

c) Cope rearrangement.

d) Hoffman rearrangement.

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Total No. of Questions : 6]

SEAT No. :

P2038

[Total No. of Pages : 2

[5552]-36
S.Y. B. Pharmacy
PHARMACOGNOSY AND PHYTOCHEMISTRY - I
(2013 Pattern) (Semester - III)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Solve any one: **[10]**

a) Explain role of secondary metabolites in plant. Differentiate between primary and secondary metabolites.

OR

b) What are lipids? Give in detail occurrence, classification, properties of lipids along with suitable examples.

Q2) Solve any five questions: **[15]**

a) Explain method of preparation of Shark liver oil.

b) Write different chemical tests for the identification of castor oil.

c) Write a note on Acacia.

d) Write different chemical tests for the identification of lipids.

e) Write biological source and uses of Starch.

f) Explain method of preparation of silk.

g) Write biological source, properties and uses of Thaumatin.

P.T.O.

Q3) Write notes on any two: **[10]**

a) General biogenesis of Lipid.

b) Define and classify carbohydrate with example.

c) Define enzyme. Give their classification in detail.

d) What are natural fibers? Write a note on Jute fiber.

SECTION - II

Q4) Solve any one: **[10]**

a) Define and classify Tannins. Explain their methods of extraction.

OR

b) Define and classify Glycosides. Explain general method of extraction of Glycosides

Q5) Solve any five: **[15]**

a) Give the chemical tests for Anthraquinone Glycosides.

b) Give the biological source, chemical constituents of Aloe.

c) Give the occurrence and properties of tannins.

d) Differentiate between Alexandrian Senna and Indian Senna.

e) Give the biological source, chemical constituents of Liquorice.

f) Give the chemical tests for Cardioactive glycosides.

g) Write short note on digitalis.

Q6) Write notes on any two: **[10]**

a) Pharmacognostic study of Amla.

b) Preparation of Black catechu.

c) Differentiate between Black catechu and Pale catechu.

d) Pharmacognostic study of Gentian.

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Total No. of Questions : 6]

SEAT No. :

P2039

[Total No. of Pages : 2

[5552]-41
S. Y. B. Pharmacy
PHYSICAL PHARMACEUTICS - II
(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Write in detail about accelerated stability studies and explain shelf life. **[10]**

OR

Describe the different types of non-Newtonian flow with rheograms and examples. classify different types of viscometer and explain cone and plate viscometer.

Q2) Attempt any five of the following : **[15]**

a) Explain micellar solubilization.

b) What is meant by 'HLB' and 'RHLB'?

c) Define wetting process. How is it useful in pharmacy?

d) Write three applications of chemical kinetics.

e) Differentiate between thixotropy and anti-thixotropy?

f) Describe any three factors governing the rate of a chemical reaction?

g) Explain the limitations of one point viscometer.

P.T.O.

Q3) Write notes on any two of the following: **[10]**

a) First order reactions

b) Adsorption isotherms

c) Hysteresis loops

d) Measurement of interfacial tension

SECTION - II

Q4) a) What do you understand by the term "specific surface of particles"? How is it experimentally determined?

b) Briefly describe what measures you will take to improve flow properties of granules? **[10]**

OR

Define Colloids. What are its different types? Explain colloidal system with reference to its stability.

Q5) Answer any five of the following: **[15]**

a) Explain optical microscopy to determine particle size.

b) Protective colloids find important place in pharmacy. Justify the statement.

c) Discuss factors affecting flow of powders.

d) In a coulter counter, electrolyte solution is added in oder to measure particle size distribution. Why?

e) Discuss Nernst potential and zeta potential with their applications.

f) Concept of Donnan-membrane equillibrium.

g) Comment on; Bulkiness and Granule density.

Q6) Write notes on any two of the following: **[10]**

a) Electrical properties of colloids.

b) Assessment of flow properties of powders.

c) Particle size and size distribution.

d) Derived properties of powders.

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Total No. of Questions :6]

SEAT No. :

P2040

[Total No. of Pages : 2

[5552]-42

Second Year B. Pharmacy

PATHOPHYSIOLOGY AND CLINICAL BIOCHEMISTRY

(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw well labeled diagrams wherever necessary.***

SECTION - I

Q1) Define cardiac shock. Explain detail pathophysiology of cardiac shock **[10]**

OR

Define Hypertension. Explain detail pathophysiology of Hypertension **[10]**

Q2) Attempt any five of the following. **[15]**

a) Discuss etiology of cardiac arrhythmia

b) Write note on Cell injury and inflammation

c) Discuss pathophysiology of Buerger's disease

d) What are clinicalmanifestations of fatty liver?

e) Discuss causes of diarrhea and constipation

f) Define :

i) Peptic ulcer

ii) Bronchitis

iii) Varicose vein

g) Discuss clinical manifestations of hepatitis

Q3) Write note on following (any two) **[10]**

a) Coronary artery disease

b) COPD

c) Raynaud's disease

d) Deep vein thrombosis

P.T.O.

SECTION - II

Q4) Define diabetes. Explain types and pathophysiology of diabetes mellitus **[10]**

OR

Discuss the term renal failure in detail. **[10]**

Q5) Attempt any five **[15]**

a) Write the causative agent for Leprosy and AIDS

b) Define :

i) Etiology

ii) Osteoarthritis

iii) Insomnia

c) Discuss briefly, pathophysiology of endometriosis.

d) Write the epidemiology of tuberculosis

e) Discuss etiology of infertility

f) Discuss the clinical manifestations of Schizophrenia

g) What are the ways of prevention and treatment for Malaria.

Q6) Write note on following (any two) **[10]**

a) Depression

b) Gout

c) Hypothyroidism

d) Nephritis

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Total No. of Questions : 6]

SEAT No. :

P2041

[Total No. of Pages : 2

[5552]-43
S.Y. B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY - IV
(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right side indicate full marks.***

SECTION - I

Q1) Give the methods of synthesis and reactions of Pyridine. **[10]**

OR

Explain nomenclature of heterocyclic compounds with one heteroatom only. Give any three methods of synthesis and three reactions of Furan. **[10]**

Q2) Attempt the following (Any Five): **[15]**

a) Give any three reactions of imidazole.

b) Discuss the Skraup synthesis of quinoline.

c) Give the reaction and mechanism of Knorr - pyrrole synthesis.

d) Why Pyridine is more basic than pyrrole and less basic than methylamine?

e) Explain the terms-Synthon, FGI and analysis with examples.

f) Draw the following structures along with numbering -

   i) 4 - amino Isoquinoline

   ii) Oxazole

   iii) Cinnoline

g) Explain retrosynthetic route of Suphamethoxazole.

P.T.O.

Q3) Attempt the following (Any two): **[10]**

a) Discuss various methods of synthesis of Indole.

b) Explain electrophilic and nucleophilic substitution in quinoline.

c) Explain rules for disconnection of C - C and C - X bond.

d) Elaborate Reactions of Pyrrole.

SECTION - II

Q4) Establish cyclic structure of D (+) Glucose and explain mutarotation in glucose. **[10]**

OR

Classify carbohydrates. Describe Kiliani-Fischer synthesis and Ruff's degradation. **[10]**

Q5) Attempt the following (Any Five): **[15]**

a) Define epimers and anomers with examples.

b) What will happen when fructose is treated with nitric acid, sodium borohydride and hydroxylamine?

c) Explain the principle involved in microwave assisted organic synthesis.

d) Explain any three reactions of Arabinose.

e) Discuss any three applications of Nanochemistry in brief.

f) Write any six medicinal importance of carbohydrates.

g) Compare conventional and combinatorial method of synthesis.

Q6) Attempt the following (Any Two): **[10]**

a) Discuss various solid support and linkers used in solid phase synthesis.

b) Applications of microwave assisted synthesis in pharmaceutical organic chemistry.

c) Elaborate various reactions of Glucose.

d) Applications of combinatorial chemistry in drug discovery.

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Total No. of Questions : 6]

SEAT No. :

P2042

[Total No. of Pages : 2

[5552]-44
S.Y. B. Pharmacy
PHARMACEUTICAL CHEMISTRY
Pharmaceutical Analysis - II
(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right side indicate full marks.***

SECTION - I

Q1) Discuss in detail the principle of polarography and explain its instrumentation. **[10]**

OR

Explain principle of conductometry. Discuss its applications.

Q2) Attempt any five of the following: **[15]**

a) Discuss conduction of current in cell and mass transfer processes.

b) Explain construction and working of Silver electrode.

c) Explain effect of dilution on specific, molecular and equivalent conductance.

d) Classify different electrodes used in potentiometry.

e) Discuss Ilkovic equation.

f) State and explain different methods of end point detection in potentiometry.

g) What is supporting electrolyte? Write role of supporting electrolyte in polarography.

Q3) Attempt any two of the following: **[10]**

a) Write a note on oxygen combustion flask techniques.

b) Dropping mercury electrode.

c) Applications of polarography.

d) Normal Hydrogen Electrode.

P.T.O.

SECTION - II

Q4) Give a detail account on principle, instrumentation and application of Coulometry. **[10]**

OR

Explain in brief the following:

a) Immersion and Pulfrich refractometer. **[5]**

b) Construction and working of Abbe Refractometer. **[5]**

Q5) Attempt any five of the following: **[15]**

a) Write applications of Refractometry.

b) Explain in detail the types of plane polarized light.

c) Give a brief account on electrodes used in Amperometry.

d) Describe in detail the working of electrochemical cell.

e) Add a note on Cotton effect.

f) Give advantages and disadvantages of Amperometry.

g) Explain in brief the current potential relation.

Q6) Write a note on any two of the following: **[10]**

a) Give an account on mass transfer by migration, convection and diffusion.

b) Biamperometric titration.

c) Karl Fischer titration.

d) Differentiate between amperostatic and potentiostatic coulometry.

Total No. of Questions : 6]

SEAT No. :

P2043

[Total No. of Pages : 2

[5552]-45
Second Year B. Pharmacy
PHARMACOGNOSY & PHYTOCHEMISTRY - II
(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Describe in detail biosynthetic pathway for indole and tropane alkaloids. **[10]**

OR

What are alkaloids? Describe its types, classification, chemical test and general method of extraction in detail. **[10]**

Q2) Answer the following (Any 5) **[15]**

a) Give synonym, biological source, chemical constituents and uses of colchicum.

b) Differentiate Cocaand Datura leaf microscopically.

c) Give the chemical test for identification of tropane alkaloids and cinchona.

d) Write a note on pilocarpus.

e) Describe the adulterants of cinchona bark.

f) Draw & describe well labelled T.S. of nux-vomica seed.

g) Explain in short steroidal alkaloids with example.

Q3) Write short note on (Any 2) **[10]**

a) pH gradient technique

b) Life cycle of ergot.

c) Isoquinoline alkaloids

d) Tobacco and Veratrum

P.T.O.

SECTION - II

Q4) What are resins? Give its classification, properties, chemical tests and add a note on Guggul. **[10]**

OR

What are Volatile oils? Classify and describe in detail coriander. **[10]**

Q5) Answer the following (Any 5) **[15]**

a) Give synonym, biological source, chemical constituents and uses of Manroot.

b) Describe the adulterants of clove.

c) Describe Sponge method for extraction of volatile oils.

d) Differentiate between cinnamon and cassia bark.

e) Explain in short podophyllum.

f) Draw & describe well labelled T.S. of clove.

g) What are diterpenoids explain with one example

Q6) Write short note on (Any 2) **[10]**

a) Extrusion and enfleurage

b) Tetraterpenoids: annatto & saffron

c) Isoprenoid pathway

d) Lavender and Sandalwood

Total No. of Questions : 6]

SEAT No. :

P2044

[Total No. of Pages : 2

[5552]-46
S.Y. B. Pharmacy
PHARMACEUTICAL ENGINEERING
(2013 Pattern) (Semester - IV)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define drying. Give factors affecting drying. Explain in detail spray dryer with diagram. **[10]**

OR

Define evaporation. Discuss theory of evaporation. Discuss economy & capacity of single effect evaporator Enlist different types of evaporators. **[10]**

Q2) Solve any five **[15]**

a) Explain modes of heat transfer.

b) Explain molecular diffusion in gases.

c) Explain kirchoff's law of heat transfer.

d) Give working of a pan evaporator.

e) Draw neat labelled diagram of Fluidised bed dryer.

f) Write a note on heat exchangers.

g) Explain working of drum dryer.

Q3) Answer the following (Any two) **[10]**

a) Explain two film theory of interphase mass transfer.

b) Explain tube and shell heat exchanger.

c) Explain horizontal tube evaporator.

d) Explain Fourier's law of heat transfer.

P.T.O.

SECTION - II

Q4) Define and explain rectification. Discuss various types of Fractionating columns. **[10]**

OR

Define steps in crystallization process and explain theories of cryistal growth.

Q5) Solve any Five **[15]**

a) Write a note on caking of crystals.

b) Explain Reynold's number and its significance.

c) Define corrosion and give methods to combat corrosion.

d) Explain working of Pitot tube.

e) Give principle of differential nanometer.

f) Explain process for distillation of immiscible liquids.

g) Explain nucleation in crystallization.

Q6) Answer the following. (Any two) **[10]**

a) Berroulli's theorem.

b) Swenson Walker crystallizer.

c) Molecular distillation.

d) Orifice meter.

Total No. of Questions : 6]

SEAT No. :

P2045

[Total No. of Pages : 2

[5552] - 51
T. Y. B. (Pharm.)
INDUSTRIAL PHARMACY - I
(2013 Pattern) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the TWO Sections should be written in separate answer book.***
3) ***Figures to the right indicates full marks.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Discuss in detail manufacturing defects of Tablet. **[10]**

OR

Discuss in detail Wet and Dry granulation process in Tablet manufacturing.

Q2) Solve ANY FIVE the following. **[15]**

a) Give account on evaluations of granules.

b) Discuss process of Extrusion.

c) Mechanism and working of Fluidized bed granulation.

d) Write at least THREE names for tablet hardness tester.

e) Discuss Weight variation test of tablet as per IP.

f) Give account on types of Tablet.

g) Write a note on super disintegrating agents with Example.

P.T.O.

Q3) Answer ANY TWO **[10]**

a) Give account on Preformulation Parameters of tablet.

b) Write a note on Mouth Dissolving Tablet.

c) Give account on formulation of Chewable tablet.

d) Discuss method of preparation of Effervescent Tablet.

SECTION - II

Q4) Discuss in detail steps involved in Sugar Coating Process. **[10]**

OR

Discuss Film defects and remedies in tablet dosage form.

Q5) Solve ANY FIVE of the following. **[15]**

a) Write a note on plasticizers.

b) Give note on Electrostatic coating and Dip coating.

c) Give details on Typical shell hardness ratio and their use.

d) Short note on Hofliger and Karf.

e) Enlist additives added in gelatin mass with their role.

f) Vibratory Fill Principle and Piston -Tamp Principle.

g) What is Bloom strength and how it is measure?

Q6) Answer ANY TWO **[10]**

a) Discuss in detail Rotary Die process.

b) Give account on Glatt immersion sword system.

c) Give details about Hi-Coater.

d) Discuss Pan variables and Process Air in Film Coating.

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Total No. of Questions :6]

SEAT No. :

P2046

[Total No. of Pages : 2

[5552]-52
T.Y. B.Pharm.
PHARMACEUTICAL ANALYSIS - III
(2013 Pattern) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Answers to the two sections should be written in separate answer books.***

SECTION - I

Q1) Explain principle and instrumentation of Flame Photometry. Discuss in brief about the pharmaceutical applications of Flame Photometer. **[10]**

OR

What is Beer's Lambert's Law. Describe in detail the different causes for deviations from Beer's law.

Q2) Attempt any five questions from the following : **[15]**

a) Write a note on monochromator used in UV/Visible Spectroscopy.

b) Discuss on atomic & molecular spectroscopy.

c) Write a note on liquid-liquid extraction.

d) What types of electronic transitions are involved in the absorption of UV or Visible radiations?

e) Express the wavelength 250Å in micrometers and nanometers.

f) Write a note on sampling plans.

g) Discuss on flame types used in atomic absorption spectroscopy.

Q3) Write a note on any two : **[10]**

a) Working of double beam UV-Visible spectrophotometer

b) Separating analytes from interferents

c) Derivative Spectroscopy

d) Classify instrumental methods of analysis

P.T.O.

SECTION - II

Q4) Discuss in detail about principle and theory of fluorimettric analysis. **[10]**

OR

Explain about instrumentation of Atomic Absorption Spectroscopy.

Q5) Attempt any five questions from the following : **[15]**

a) Excitation and emission spectra.

b) Applications of Atomic Emission Spectroscopy.

c) Explain instrument of Phosphorimeter.

d) Factor affecting fluorescence and phosphorescence.

e) Theory of turbidometric analysis.

f) Write applications of phosphorimetry.

g) Discuss source used in Atomic Emission Spectrophotometry.

Q6) Write short note on Any Two : **[10]**

a) Burners used in Atomic Emission Spectroscopy.

b) Theory of Atomic Emission Spectroscopy.

c) Nephelometer

d) Spectroflurimeter

Total No. of Questions : 6]

SEAT No. :

P2047

[Total No. of Pages : 2

[5552]-53
T.Y. B.Pharm.
MEDICINAL CHEMISTRY - I
(2013 Pattern) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right side indicate full marks.***

SECTION - I

Q1) Enlist various physicochemical properties affecting drug action. Explain solubility and partition coefficient in detail. **[10]**

OR

Explain receptor theories and give detail account on signal transduction pathways.

Q2) Attempt any five of the following: **[15]**

a) Write a note on protein - binding of drugs.

b) Classify anti-anginal drugs with suitable example.

c) Write a note on anti-thrombotic agents.

d) Explain MOA and adverse effect of cardiac glycosides.

e) Explain Class 1A drugs in treatment of arrhythmia.

f) Give different types of receptors with example.

g) Write a note on passive diffusion and active transport of drugs.

Q3) Attempt any two of the following. **[10]**

a) Explain structure-activity relationship of muscarinic agonists.

b) Explain drug acting on Renin-Angiotensin pathways.

c) Give classification of anti-arrhythmic drugs with suitable example. Explain one class in brief.

d) Explain metabolism by conjugation reactions.

P.T.O.

SECTION - II

Q4) Discuss in detail SAR and MOA of cardiotonics. **[10]**

OR

Explain in detail Ganglionic blocker and neuromuscular blocker.

Q5) Attempt any five of the following: **[15]**

a) Write synthesis of carbachol.

b) Explain drugs affecting storage and release of catecholamine.

c) Write MOA of nitrovasoldilator.

d) Give chemistry, SAR of acetylcholine.

e) Write a note on potassium sparing diuretics.

f) Discuss SAR of directly acting sympathomimetics.

g) Give SAR of thiazide diuretics.

Q6) Attempt any two of the following: **[10]**

a) Adrenergic agonist.

b) SAR and MOA of acetylcholine inhibitors.

c) Calcium channel blocker.

d) SAR of beta blocker.

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Total No. of Questions : 6]

SEAT No. :

P2048

[Total No. of Pages : 2

[5552]-54
T.Y. B.Pharmacy
3.5.4. : PHARMACOLOGY - II
(2013 Pattern) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherver necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define Sympathomimetic drugs. Classify sympathomimetic drugs with suitable example. Explain the biosynthesis, storage, release and metabolism of catecholamine. **[10]**

OR

Define Anticholinergic drugs. Classify antimuscarinic agents with suitable example. Explain the mechanism of action, pharmacological action, therapeutic uses and adverse effects of atropine.

Q2) Answer the following. (any five) **[15]**

a) Classify anticholinesterase agents with suitable example.
b) Define the following terms.
   i) Miotics
   ii) Mydriasis
   iii) Glaucoma
c) Classify cholinergic drugs with suitable example.
d) What do you mean antimuscarinic poisoning?
e) Explain Neurohumoral transmission at nerve terminal.
f) Compare d-tubocurarine with succinyl choline.
g) Enlist the difference between sympathomimetic and parasympathomimetic agents.

Q3) Write a short note on (any two) **[10]**

a) Skeletal Muscle relaxant.
b) Alpha blocker.
c) Neuromuscular blocker.
d) Organophosphorus poisoning and its treatment.

P.T.O.

SECTION - II

Q4) Describe the Pharmacological actions of Glucocorticoids. **[10]**

OR

Explain Biosynthesis, pharmacological actions and therapeutic uses of thyroid hormones.

Q5) Answer the following. (any five) **[15]**

a) Describe physiological effects of Glucagon.

b) Therapeutic effects of corticosteroid antagonists.

c) Mechanism of action of Insulin.

d) Classify antithyroid drugs.

e) What are tocolytics? Explain in brief.

f) Explain the role of gonadotrophins in female.

g) Explain the functions of hormones.

Q6) Write a short notes on (any two) **[10]**

a) Androgens.

b) Parathyroid hormone.

c) Progestins.

d) Mineralocorticoids.

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Total No. of Questions : 6]

SEAT No. :

P2050

[Total No. of Pages : 2

[5552] - 56

T. Y. B. Pharm.

PHARMACEUTICAL BUSINESS MANAGEMENT & DISASTER MANAGEMENT

(2013 Pattern) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Give detail account of Network technique. **[10]**

OR

What is planning and its objective? Explain in detail steps involved in planning.

Q2) Answer any Five (Each three marks): **[15]**

a) Explain Mintzberg's managerial role.

b) Define decision making, give its importance.

c) Give advantages and disadvantages of Line & staff organization.

d) Describe in brief Management functions.

e) Give classification of material.

f) What are concepts of controlling?

g) Write an objective of Inventory control.

P.T.O.

Q3) Write note on Any two (Each five marks) **[10]**

a) Henri Fayol's- The administrative Management theory.

b) Departmentalization.

c) Budget as control technique.

d) Taylor principle & techniques.

SECTION - II

Q4) Define Motivation. Explain any two theories of motivation in detail.

OR

Define sales promotion. Give different techniques used in sales promotion. **[10]**

Q5) Answer the following (Any Five) **[15]**

a) Explain different forms of communication.

b) Write the importance of Marketing Research.

c) Explain the procedure for determination of price.

d) Explain the concept of Disaster Preparedness.

e) Define leadership. Explain trait theory of leadership.

f) Explain importance of product life cycle.

g) What are advantages and limitations of sales forecasting.

Q6) Write a short note on (Any Two) **[10]**

a) Geological and mountain area disasters

b) Objectives of advertising

c) Types of communication

d) Role of Medical Representative

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Total No. of Questions : 6]

SEAT No. :

P2051

[Total No. of Pages : 2

[5552]-57
T.Y.B. Pharmacy
ACTIVE PHARMACEUTICAL INGREDIENT TECHNOLOGY
(2013 Course) (Semester - V)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Attempt any one question. **[10]**

a) Define alkylation. Describe various alkylating agents. Explain the manufacturing process for any one Active Pharmaceutical ingredient by alkylation.

OR

b) Define nitration. Discuss various nitrating agents. Describe the manufacture of any one Active Pharmaceutical ingredient by nitration process.

Q2) Attempt any five. **[15]**

a) Distinguish between Unit Process and Unit operation.

b) Define Active pharmaceutical ingredient, Bulk drug and Fine chemical with example of each.

c) What is esterification. Explain the types of esterification.

d) Give details of types of reactors used in API industry.

e) Enlist various methods of resolution of recemic mixtures. Explain any one method in detail.

f) Give details of filters used in API industry.

g) Enlist the factors affecting chemical process. Describe any one factor.

P.T.O.

Q3) Attempt any two. **[10]**

a) Explain the manufacturing method and flow chart for synthesis of Ranitidine.

b) Explain the importance of polymorphism in API.

c) Mention various approaches for asymmetric synthesis. Explain asymmetric synthesis of Propranolol.

SECTION - II

Q4) Attempt any one question **[10]**

a) Explain in brief the steps involved in optimization of organic reactions and processes.

OR

b) Discuss the process variable in API manufacturing and their effect on product quality and yield.

Q5) Attempt any five. **[15]**

a) Enlist the characteristics of ideal reagent for preparation of API.

b) Enlist tools for purification and product isolation. Discuss any one in brief.

c) Discuss classification of solvents in API manufacturing.

d) What is work-up in API manufacturing?

e) Write down the basic differences between expedient route nd optimal / cost effective route.

f) Discuss any two process variables in API manufacturing.

g) Discuss safety and toxicity considerations for selection of reagents for API preparation.

Q6) Write short notes on (Any Two) **[10]**

a) MSDS and its contents

b) IPCs in API manufacturing

c) Strategies for selection of most appropriate route in API manufacturing.

d) Green Chemistry approaches in API manufacturing.

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Total No. of Questions : 6]

SEAT No. : ____

P3393

[Total No. of Pages : 2

[5552] - 61
T.Y. B. Pharmacy (Semester - VI)
3.6. I.T - INDUSTRIAL PHARMACY - II
(2013 Pattern)

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

Instructions to the candidates :

1) ***All Questions are Compulsory***
2) ***Answers to the two Sections should be written in separate books.***
3) ***Neat diagram must be drawn wherever necessary***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Solve any One **[10]**

a) Describe how DLVO theory explains stability of dispersions.

b) Give an account of excipients used in emlsion manufacture.

Q2) Answer the following (Any Five) **[15]**

a) What is phase inversion temperature?

b) What is HLB? Explain it advantages and limitations.

c) What is Ostwald ripening?

d) Differentiate between floccule and cake.

e) Explain steric stabilization of suspensions.

f) How suspensions are evaluated by using volume of sedimentation?

g) How globule diameter affects stability of suspension?

Q3) Write short notes (any two) **[10]**

a) Flocculated and deflocculated suspensions

P.T.O.

b) Explain stability of suspensions by thermodynamic and steric methods.

c) What is protective colloid?

d) Discuss three evaluation tests for suspensions.

SECTION II

Q4) Solve any One **[10]**

a) Comment on various Physiological and Physicochemical aspects related to formulation of semisolid dosage form

b) Design the layout of manufacturing facility for suspension as per schedule M

Q5) Answer the following (Any Five) **[15]**

a) What is flux?

b) Discuss formulation , manufacturing and evaluation of pastes

c) Differentiate In-vivo and ex-vivo Evaluation of Semisolids

d) Investigate drug related factors affecting formulation of semisolid dosage form

e) Discuss the principle, formulation and evaluation of cetrimide cream

f) Differentiate between creams and gels

g) Classify semisolids

Q6) Write Short Note (Any two) **[10]**

a) Patient related factors in semisolid formulation

b) Ointments

c) Spreadability and extrudability

d) Selection criteria for bases

Total No. of Questions : 6]

SEAT No. :

P2052

[Total No. of Pages : 2

[5552]-62
Third Year B. Pharamacy
PHARMACEUTICAL ANALYSIS - IV
(2013 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicates full marks.***

SECTION - I

Q1) Discuss various stationary phases and mobile phases used in TLC. Write the applications of TLC. **[10]**

OR

Write theory of paper chromatography. Discuss various stationary phase used in it. Give the applications of paper chromatography.

Q2) Attempt any five of the following. **[15]**

a) Explain principle of TLC.

b) Explain Resolution and Capacity factor.

c) Write about column packing techniques.

d) Discuss the merits and demerits of HPTLC.

e) How the efficiency of a column can be increased?

f) Discuss the applications of paper chromatography.

g) Discuss the applications of DSC techniques.

Q3) Write a note on any two of the following. **[10]**

a) Applications of HPTLC.

b) Principle and instrumentation of DSC.

c) Electrophoresis

d) Rate and plate theory of chromatography.

P.T.O.

SECTION - II

Q4) Discuss the principle and instrumentation of TGA. **[10]**

OR

Discuss any five X-ray detectors.

Q5) Attempt any five of the following. **[15]**

a) Explain the term Installation Qualification.

b) What is Bragg equation?

c) Name emissions from radioactive decay.

d) What are the factors affecting DTA results?

e) What are the method validation parameters for Identification test?

f) List applications of ITC.

g) Explain the method to determine precision of method.

Q6) Write a note on any two of the following. **[10]**

a) Isothermal Titration Calorimeter.

b) Characterisics of Thermobalance of TGA.

c) Methods to calculate Limit of detection.

d) Instrumentation for DTA.

Total No. of Questions :6]

SEAT No. :

P2053

[Total No. of Pages : 2

[5552]-63
T.Y. B. Pharmacy
MEDICINAL CHEMISTRY-II
(2013 Pattern) (Semester-VI)

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

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions are compulsory.***

SECTION-I

Q1) What are antipsychotic agents? Classify anti-psychotic agents and explain SAR of Phenothiazine. **[10]**

OR

Classify oral anti-hyperglycemic agents with suitable example and structures. Add note on Sulphonylureas.

Q2) Answer any five **[15]**

a) Write metabolic pathway for Diazepam.

b) Give brief account on organ function test agents.

c) Write IUPAC name and structure of Caffeine and Sodium Valproate.

d) Write in brief about halogenated hydrocarbons as general anaesthetics with suitable examples.

e) Classify local anaesthetics agents.

f) Write synthesis of Amitriptyline.

g) Outline synthesis of Phenytoin.

P.T.O.

Q3) Answer any two **[10]**

a) Write note on factors influencing drug metabolism.

b) Discuss SAR, mechanism of action and uses of tricyclic anti-depressants.

c) Give account on Anxiolytic drugs.

d) Discuss in detail about Anti-migraine agents.

SECTION-II

Q4) Classify sedative and hypnotics with suitable example from each class. Discuss SAR and mechanism of action on barbiturates. **[10]**

OR

Discuss phase I and phase II reactions in drug metabolism with suitable examples.

Q5) Answer any five. **[15]**

a) Outline the synthesis of Thiopental sodium.

b) Explain metabolism of Procaine.

c) Write a brief note on radio opaque agents.

d) Outline the synthesis of Amantadine.

e) Classify CNS stimulants with suitable example.

f) Describe any two drugs used as respiratory stimulants.

g) Drugs used in the treatment of Alzheimer's disease.

Q6) Write note on any two. **[10]**

a) Monoamino oxidase inhibitors.

b) Give account on benzodiazepines.

c) Write note on Psychotropic agents.

d) Application of drug metabolism studies in new drug discovery.

Total No. of Questions : 6]

SEAT No. :

P2054

[Total No. of Pages : 2

[5552]-64
T.Y. B. Pharmacy
PHARMACOLOGY - III
(2013 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss Pharmacology of alcohol. Write note on the treatment of alcoholism. **[10]**

OR

Classify general anesthetics with examples.Discuss stages of anesthesia.

Q2) Answer the following: (Any 5) **[15]**

a) Describe antipsychotics

b) Give an account of inhalational anesthetics

c) Write a short note on selective serotonin reuptake inhibitors.

d) Discuss the term anxiety and add note on anxiolytics.

e) Discuss mechanism of action, therapeutic uses of Lithium carbonate.

f) Write uses and adverse effects of tricyclic antidepressants.

g) Classify antiepileptic drugs with example of each class.

Q3) Write short note on (Any2) **[10]**

a) Alzheimer's disease.

b) Benzodiazepines

c) MAO inhibitors

d) Techniques of administration of local anesthetics

P.T.O.

SECTION - II

Q4) Classify NSAIDS and discuss pharmacology of any one drug. **[10]**

OR

Discuss pathophysiology and treatment of peptic ulcer

Q5) Answer the following(Any5) **[15]**

a) Write MOA, Adverse Effects and Clinical Uses of paracetamol.

b) Write a short note on pharmacotherapy of diarrhea.

c) Classify H_2 receptor antagonists. Give their uses.

d) Write a note on mucolytics.

e) How would you treat the infection caused by H.pylori.

f) What is mean by gout? Classify anti gout drugs.

g) Write a note on morphine antagonists.

Q6) Write short note on (Any2) **[10]**

a) Pharmacotherapy of cough

b) COPD.

c) Opioid analgesics

d) Osteoarthritis

Total No. of Questions : 6]

SEAT No. :

P2055

[Total No. of Pages : 2

[5552]-65
Third Year B. Pharmacy
NATURAL PRODUCTS CHEMISTRY
(2013 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***

SECTION - I

Q1) Attempt any one of the following. **[10]**

a) What do you mean by characterization of carbon skeleton? Explain the different methods of characterization. Add a note on elemental analysis by combustion method.

b) Explain the role of spectroscopy in NPC. Add a note on Principle and applications of IR.

Q2) Attempt any five of the following. **[15]**

a) Write significance of Optical rotation in characterization of natural products.

b) Enlist marine anticancer drugs.

c) Write a note on ozonolysis.

d) Explain in detail use of monelin.

e) Explain Woodward - Fischer's rule.

f) Explain what is rate of reaction.

g) Give the Application of HPLC.

Q3) Attempt any two. **[10]**

a) Describe structural elucidation of alkaloids by spectral methods.

b) Write a detailed note on role of natural products in drug discovery.

c) Describe structural elucidation of flavonoids by spectral methods.

d) Give the principle and applications of Gas chromatography.

P.T.O.

SECTION - II

Q4) Attempt any one of the following. **[10]**

a) Write a detailed note on anti-cancer marine drugs.

b) Write an exhaustive note on tracer techniques and its application.

Q5) Attempt any five of the following. **[15]**

a) What is the difference between nutritive and non - nutritive sweeteners?

b) Write a short note on stevia.

c) Explain in detail liquorice as sweeteners.

d) Write B.S, C.C, uses of turmeric.

e) Give the classification of natural colorants.

f) Explain chirality and complexity.

g) Define natural dyes. Give its classification.

Q6) Attempt any two. **[10]**

a) Write a note on strategies on new drug discovery.

b) Describe drugs acting on Cardio Vascular system from marine source.

c) Write a note on Beet and Indigo dye.

d) Write a note on elucidation of biosynthetic pathways by isolated organ, tissues and grafts.

Total No. of Questions : 6]

SEAT No. :

P2056

[Total No. of Pages : 2

[5552]-66
T.Y. B. Pharmacy
BIOORGANIC CHEMISTRY & DRUG DESIGN
(2013 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right side indicate full marks.***

SECTION - I

Q1) Explain various interactions involved in molecular recognition. Discuss molecular adaptation in detail. **[10]**

OR

Explain in detail physiological role of Monoamine Oxidase enzyme. Add a note on MAO inhibitors.

Q2) Attempt any five of the following: **[15]**

a) Explain biochemical role of human and fungal thymidylate synthase

b) Explain the term proximity effect

c) Write a note on chain terminator in DNA strand breaking

d) Discuss in detail serotonin receptor

e) Write a note on topoisomerase poisons

f) Write a note on ACE inhibitors

g) Explain the mechanism of mitomycin-C

Q3) Attempt any two of the following: **[10]**

a) Explain alkylating agents targeting nucleic acid. Discuss mechanism of action of nitrosoureas.

b) Write a note on dopamine receptors and their agonist and antagonists.

c) Discuss in detail role of human and bacterial DHFR and add note on its inhibitors.

d) Explain the structure tyrosine kinase receptor and add note on its antagonists.

P.T.O.

SECTION - II

Q4) Explain Quantum Mechanics (QM) & its methods used in QM calculations. **[10]**

OR

Explain Prodrugs. Write in detail about carrier-linked prodrug.

Q5) Attempt any five of the following **[15]**

a) Give advantages of Hansch & Free-wilson analysis

b) Give ideal characteristics and uses of prodrugs

c) Discuss advantages of QSAR over conventional SAR

d) Write a note on various interactions analyzed in molecular docking studies.

e) Write a note on Pharmacophore modeling

f) Explain molecular docking strategies

g) Enlist parameters used in QSAR study. Explain any one of them.

Q6) Answer any two of following **[10]**

a) Give pharmaceutical applications of prodrugs

b) Write a note on Ligand-based drug designing

c) Explain lead discovery

d) Explain types of enzyme inhibition in rational drug design

Total No. of Questions : 6]

SEAT No. :

P2057

[Total No. of Pages : 2

[5552]-67
T.Y. B. Pharmacy
PHARMACEUTICAL BIOTECHNOLOGY
(2013 Pattern) (Semester-VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION-I

Q1) Discuss in detail principle of rDNA technology. Give an account of expression vector. **[10]**

OR

Explain different techniques used for gene transfer.

Q2) Answer the following (any five) **[15]**

a) Explain the applications of DNA fingerprinting.

b) What is shuttle vector?

c) Describe in short different methods for isolation of DNA.

d) Explain in short site directed mutagenesis.

e) Discuss the principle of gel electrophoresis.

f) Explain western blotting in detail.

g) What is RFLP?

Q3) Write short note on (any two) **[10]**

a) Enzymes acting on DNA

b) Cloning vector

c) Restriction Endonuclease

d) Genomic library

P.T.O.

SECTION-II

Q4) What are immobilized enzymes? Discuss briefly various methods of immobilization of enzymes along with the applications of the same. **[10]**

OR

Enlist different biotechnologically derived products used in healthcare management. Explain in detail production of human insulin.

Q5) Answer the following (any five) **[15]**

a) Explain in short germ plasm storage.

b) Write advantages and disadvantages of immobilized enzymes using entrapment.

c) Define and classify different types of fermenters.

d) Discuss different applications of transgenic animals.

e) Write a note on production of antibiotic by fermentation technology.

f) What is cryopreservation?

g) Draw neat and labeled diagram of typical fermenter.

Q6) Write short note on (any two) : **[10]**

a) Down stream processing

b) Human gene therapy

c) Monoclonal antibodies

d) Transgenic animals

Total No. of Questions :6]

SEAT No. :

P2058

[Total No. of Pages : 2

[5552]-71
Final Year B.Pharmacy
4.7.1-T : STERILE PRODUCTS
(2013 Pattern) (Semester - VII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Write each section in separate answer books.***
3) ***Figures to right indicate marks assigned.***
4) ***Draw neat labelled dirgrams wherever necessary.***

SECTION- I

Q1) Answer any one of the following: **[10]**

a) What is HVAC system and give its importance.

b) Give types of glass, plastics and rubbers used in packaging of sterile parental product and their applications.

Q2) Answer any five of the following: **[15]**

a) Describe general requirements for sterile parenteral products.

b) How type I glass is differentiated from type II glass as per I.P.

c) What are pyrogens? What are the methods to get pyrogen free water?

d) Note on various solvents used in sterile products.

e) What is aseptic area in sterile facility.

f) Note on quality control of rubber closures.

g) Write note on prefilled syringes.

Q3) Answer any Two of the following. **[10]**

a) Write note on sterile reconstituted products.

b) Give flow diagram for large scale manufacture process of aqueous sterile solution having heat unstable drug.

c) Write note on stability study of sterile parenterals product.

d) Describe test for sterility.

P.T.O.

SECTION-II

Q4) Write in detail about characteristics of large volume parenterals Explain stabilization of LVPs. **[10]**

OR

Explain principle, essential components, construction, working and applications of lyophilizer. **[10]**

Q5) Answer the following. (Any five) **[15]**

a) Write advantages and disadvantages of peritoneal dialysis.

b) Write the importance of primary duying in lyophilization process.

c) Explain general requirements of opthalmic formulation.

d) Write the ideal properties and importance of plasma volume expanders.

e) Write types of ligatures and sutures with suitable examples.

f) Explain standards of catgut.

g) What is Total Parenteral Nutrition (TPN)?

Q6) Write a note on (Any two) **[10]**

a) Evaluation of ophthalmic product.

b) Intravenous admixture.

c) Fractionation of plasma

d) Wound dressings

Total No. of Questions : 6]

SEAT No. :

P2059

[Total No. of Pages : 2

[5552]-72
F.Y. B.Pharm.
PHARMACEUTICAL ANALYSIS - V
(2013 Pattern) (Semester - VII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Describe principle, instrumentation and applications of SEM technique. **[10]**

OR

Describe principle, instrumentation and applications of Raman technique.

Q2) Attempt any five of the following. **[15]**

a) Compare MID and NIR IR techniques.
b) What are the advantages of Raman technique?
c) Compare SEM and TEM techniques.
d) Explain principle of TEM.
e) Describe applications of NIR techniques.
f) Explain IR spectral features of alkanes.
g) Explain advantages of FTIR technique.

Q3) Attempt any two of the following. **[10]**

a) Explain IR band characteristic of organic acids.
b) Discuss working of FTIR.
c) Discuss IR solid and liquid sample handling.
d) Discuss factors affecting IR vibration frequencies.

SECTION - II

Q4) Discuss Sample Handling Technique and Columns used in Gas Chromatography. **[10]**

OR

Discuss in detail various Detectors used in Gas Chromatography with suitable diagram. Give their characteristics, advantages and limitations.

P.T.O.

Q5) Attempt any five of the following. **[15]**

a) Write the applications of Atomic Emission Spectroscopy.
b) Give important applications of Gas Chromatography.
c) Write principle of Gas Chromatography.
d) Discuss the applications of Super Critical Fluid Chromatography.
e) Write principle of Super Critical Fluid Extraction.
f) Why derivatization is carried out in GC?
g) Write theory of Atomic Emission Spectroscopy.

Q6) Write a note on any two of the following. **[10]**

a) Instrumentation of Atomic Emission Spectroscopy.
b) Internal and External standard method.
c) Instrumentation of Super Critical Fluid Chromatography.
d) Theory of Flash Chromatography.

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Total No. of Questions : 6]

SEAT No. :

P2060

[Total No. of Pages : 2

[5552] - 73

Final Year B. Pharm.

MEDICINAL CHEMISTRY - III

(2013 Pattern) (Semester - Vll)

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

Instructions to the candidates:

1) ***Attempt all questions.***
2) ***Figures to the right indicates full marks.***
3) ***Answer to the two sections should be written in separate books.***

SECTION - I

Q1) What are endogenous opioids? Explain . Give an account of opioid receptors including the mechanism of action. **[10]**

OR

Give the mechanism of action and classification of NSAIDs.Give an account of acetic acid derivatives as NSAIDs.

Q2) Solve any five questions (each question carries 3 marks): **[15]**

a) Give the structure and mechanism of action of Methadone and Diclofenac.

b) Sketch the scheme of synthesis of Chlorpheniramine.

c) Write a short note on Opioid antagonists.

d) Give the biosynthesis of eicosanoids.

e) Give the SARand MOA of anilines as NSAIDs.

f) Give the SAR of prostaglandins.

g) Give the structural modifications of H_2 receptor antagonists from histamine.

P.T.O.

Q3) Write short note on any two (each question carries 5 marks) **[10]**

a) Sketch the scheme of synthesis of Methadone and Cetrizine.

b) Write a short note on histamine receptors.

c) Give a short account of glucocorticoids.

d) Write a short note on non-sedative H_1 antagonists.

SECTION -ll

Q4) Enlist the various GIT disorders. Classify antidiarrhoeals and antisecretory drugs with examples and mechanism of action. **[10]**

OR

What are antiasthmatic agents? Classify with examples. Give an account of bronchodilators as antiasthmatic agents.

Q5) Solve any five questions (each question carries 3 marks): **[15]**

a) Give the structure and mechanism of action of Betamethasone and Bisacodyl.

b) Give the scheme of synthesis of Ranitidine.

c) Give an account of antispasmodic agents with mechanism of action.

d) Give an account of laxatives with mechanism of action.

e) What are antiemetics? Classify with examples, mechanism of action and SAR.

f) Give an account of prokinetic drugs with examples and mechanism of action

g) Give an account of drugs used in treatment of Irritable bowel syndrome.

Q6) Write short Note on any two (each question carries 5 marks): **[10]**

a) Proton pump inhibitors.

b) Decongestants.

c) Expectorants and antitussives.

d) Anti-inflammatory steroids for asthma treatment.

Total No. of Questions : 6]

SEAT No. :

P2061

[Total No. of Pages : 2

[5552]-74
Fourth Year B.Pharmacy.
4.7.4T : PHARMACOLOGY - IV
(2013 Pattern) (Semester - VII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Each section should be written in separate answer sheet.***
3) ***Neat labelled diagrams should be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Classify Cephalosporin. Explain the mechanism of action, therapeutic action and adverse effects of Cephalexin. **[10]**

OR

Classify chemotherapeutic agents. Explain the mechanism of action, therapeutic action and adverse effects of Methotrexate. **[10]**

Q2) Attempt any five: **[15]**

a) Classify antimalarial drugs with example.
b) Explain Gray Baby Syndrome.
c) Explain the mode of action of Erythromycin.
d) Discuss the antimicrobial spectrum of fluroquinolones.
e) Explain the mechanism of MRSA strain.
f) Explain the therapeutic uses.
g) Explain the toxicity of aminoglycosies.

Q3) Write a short note on (Attempt any two): **[10]**

a) DOT therapy.
b) Mechanism of action of antimetabolite in neoplastic diseases.
c) Antimicrobail resistance mechanism.
d) Contrimoxazole.

P.T.O.

SECTION - II

Q4) Classify anti-arrhythmic agents. Explain mode of action, therapeutic uses and adverse effects of beta blockers. **[10]**

OR

Classify diuretics with examples. Explain in detail mode of action, pharmacological actions, therapeutic uses and adverse effects of loop diuretics. **[10]**

Q5) Attempt any five: **[15]**

a) Discuss role of antidiuretics.

b) Classify antihypertensive agents with examples.

c) Differentiate between oral and parenteral anticoagulants.

d) Write a note on haemopoeitics.

e) Explain mode of action and therapeutic uses of digitals glycosides.

f) Classify antianginal agents with examples.

g) Discuss role of Fibric Acid Derivatives in atherosclerosis.

Q6) Attempt any two: **[10]**

a) Management of myocardial infarction.

b) Role of reactive oxygen intermediates in various diseases.

c) Scope of safety pharmacology.

d) Potassium sparing diuretics.

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Total No. of Questions : 6]

SEAT No. :

P2063

[Total No. of Pages : 2

[5552]-76
BIOPHARMACEUTICS AND PHARMACOKINETICS
Fourth Year B. Pharmacy
(2013 Pattern) (Semester - VII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Black figures to the right indicate full marks.***

SECTION - I

Q1) Define absorption of drug. discuss influence of physicochemical properties of drug on absorption. **[10]**

Define biotransformation of drug. Enlist Phase I and Phase II reactions. Discuss Phase II reactions in detail.

Q2) Answer the following (Any 5): **[15]**

a) Buccal and sublingual routes of administration.

b) Administration of drug via lungs.

c) Creatinine clearance.

d) Effect of micronization of drug on dissolution.

e) Define and explain absorption window.

f) Absorption of drug after IM administration.

g) Diffusion layer model theory of drug dissolution.

Q3) Write short note on (Any 2) **[10]**

a) Volume of distribution of drug and its significance.

b) Effect of GI pH on absorption of drug.

c) Dissolution of drug and its effect on absorption.

d) Ideal properties of dissolution test apparatus.

P.T.O.

SECTION - II

Q4) What is Bioavailability and Bioequivalence and explain methods for assessing bioavailability study. **[10]**

OR

Explain ONE Compartmental open model for assessment of parameters by IV infusion administration.

Q5) Answer the following (Any 5) **[15]**

a) Explain multiple dose bioequivalence study.

b) What is parallel bioequivalence design.

c) What are Biowaivers.

d) What are the advantages of urinary data over plasma data.

e) What is method of residual.

f) What is non compartmental analysis.

g) Define and explain in short AUC.

Q6) Write short note on (Any 2) **[10]**

a) Loading dose and Maintenance dose.

b) Sigma minus method.

c) Two compartmental analysis.

d) Wash out period.

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Total No. of Questions : 6]

SEAT No. :

P2064

[Total No. of Pages : 2

[5552]-77
Fourth Year B. Pharmcy
4.7.7. (T) :PHARMACEUTICAL JURISPRUDENCE
(2013 Pattern) (Semester - VII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Give the constitution and functions of various consumer protection councils as per the Consumer Protection Act, 1986. Add a note on consumer Disputes Redressal Agencies. **[10]**

OR

Give the constitution and Functions of Central Council of India according to Pharmacy Act, 1948.

Q2) Answer the following (Any 5): **[15]**

a) Define - "Advertisement" under Drugs & Magic Remedies Act. 1945.

b) State the objective of Food Safety and Standards Act 2011.

c) Define : Misbranded Drugs.

d) Explain the formula to calculate the retail price of a formulation as per DPCO.

e) Differentiate between State Pharmacy Council & Joint State Pharmacy Council.

f) Explain any two offences and its corresponding penalties applicable for manufacturing of drugs under the drugs & cosmetics Act & Rules.

g) Explain the functions of Animal Board of India, as per the Prevention of Cruelty to Animal Act, 1960.

P.T.O.

Q3) Write short note on (Any 2): **[10]**

a) Conditions for "Loan Licenses".

b) Functions of State & Central Drug laboratory.

c) Duties & powers of Drug Inspector appointed under drugs & cosmetics Act.

d) Controlled operation given under Narcotic Drugs & Psychotropic substances act 1985.

SECTION - II

Q4) What is Patent Co Operation treaty? What are its advantages? Describe the procedure of filing PCT application along with the PCT timelines. **[10]**

OR

What is section 3 and 4 of the Indian patent act? According to these sections which inventions are not patentable in India? What is the significance of section 3d to the pharmaceutical industry in India.

Q5) Answer the following (Any 5): **[15]**

a) What is compulsory licencing? Under which conditions a compulsory licence can be granted in India. Explain with a case study.

b) What are the grounds of opposition of a patent?

c) What rights does a patent confer upon its owner? What are the remedies available in case of patent infringement?

d) Who is eligible to file a patent in India? Where are the patent offices located? What are their jurisdictions?

e) What are the salient features of a trade mark?

f) Is a living organism patentable. Explain how the jurisprudence of patenting live organisms has evolved world wide.

g) What were exclusive marketing rights and mail box provision?

Q6) Write short note on (Any 2): **[10]**

a) Process and product patent

b) ICH

c) Patenting of traditional knowledge

d) Orange book

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Total No. of Questions :6]

SEAT No. :

P2065

[Total No. of Pages : 2

[5552]-81
Final Year B. Pharmacy
4.8.1 : ADVANCED DRUG DELIVERY SYSTEM
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain formulation development and evaluation of transdermal drug delivery system in detail. **[10]**

OR

Define controlled drug delivery system with its dose calculation, explain various approaches of controlled drug delivery system.

Q2) Answer the following (any five) **[15]**

a) Explain high density gastro retentive drug delivery system

b) Applications of prebiotics and probiotics.

c) Classification of polymers

d) Explain glass transition temperature

e) Write on iontophoresis

f) Write about osmotic pump

g) Differentiate between controlled release and sustain release with plasma drug profile.

Q3) Write short note on (any two) **[10]**

a) Liposomes

b) Penetration enhancers

c) OROS

d) Sonophoresis

P.T.O.

SECTION - II

Q4) Describe in detail Optimization techniques with suitable example. **[10]**

OR

What is mean by microencapsulation? Explain how Interfacial Polymerization and Spray Congealing methods

Q5) Answer the following (any five) **[15]**

a) Describe meter dose inhalers

b) Merit and Demerit of Microencapsulation

c) Explain Design of Experiment

d) Enlist chemical encapsulation methods for Microencapsulation and polymers used

e) Principle design of Aerosols with diagram

f) Write on Aerosol containers

g) Use of Aerosols in Pharmaceutical Industry

Q6) Write short note on (any two) **[10]**

a) Write on Pan coating method of Microencapsulation

b) Explain Evaluation test of aerosols

c) Write on Spray drying method of Microencapsulation

d) Write on variables of DoE and its effect on formulation.

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Total No. of Questions : 6]

SEAT No. :

P2066

[Total No. of Pages : 2

[5552]-82
Fourth Year B. Pharmacy
4.8.2. COSMETIC SCIENCE
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail about various excipients used in manufacturing of cosmetics. **[10]**

OR

Define and classify cosmetics. Give detail account on anatomy, composition and functions of skin.

Q2) Answer the following (Any Five): **[15]**

a) What are antiperspirants? Write about liquid antiperspirants.

b) Describe in brief about bath oils.

c) Discuss about powder rouges.

d) Discuss about perfumes in cosmetics.

e) Describe about deodorants.

f) Discuss formulation aspects of cleansing cream.

g) Describe in brief about bath soaps.

Q3) Write short note on (Any two) **[10]**

a) Anti ageing and anti wrinkle creams

b) Face powders

c) Cold Cream

d) Cake makeup

P.T.O.

SECTION - II

Q4) Discuss in detail about formulation development of oxidative hair dyes. Add a note on hair lighteners. **[10]**

OR

Discuss in brief about various pigments used in eye makeup preparation. Explain in detail about eye shadow.

Q5) Answer the following (Any Five) **[15]**

a) Discuss the formulation aspect of tooth powder.

b) Explain nail bleach as cosmetic products.

c) Discuss general rules in formulation of depilatories as thioglycollates, explain role of calcium hydroxide in thioglycollate type depilatories.

d) Discuss in brief about evaluation tests for manicure preparations.

e) Explain the term cosmeceuticals with example, discuss about retinoid as cosmeceuticals.

f) Explain how baby talcum powders differs from talcum powders for adults.

g) Discuss about nail lacquer remover.

Q6) Write short note on (Any Two) **[10]**

a) Mouth washes

b) Components of shampoo

c) Composition of Nail lacquer

d) Anti-seborrhic preparations

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Total No. of Questions : 6]

SEAT No. :

P2067

[Total No. of Pages : 2

[5552]-83
Final Year B. Pharmacy
PHARMACEUTICAL ANALYSIS - VI
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labeled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Answer the following (any 1) **[10]**

Discuss principle, instrumentation and application of Ion exchange chromatography.

OR

What you mean by magnetic nuclei? Discuss principle of ^{1}H NMR spectroscopy in detail.

Q2) Answer the following (any 5) **[15]**

a) Predict NMR signals in the following compounds:
   i) Propyl chloride
   ii) Iso-propanol
b) What is coupling constant?
c) What is influence of hydrogen bonding on chemical shift?
d) What is spin-spin relaxation.
e) Why TMS is used as internal standard in NMR spectroscopy.
f) What is Pascal triangle for signal splitting in Proton NMR?
g) Write on solvents used in NMR spectroscopy?

Q3) Write short note on (any 2) **[10]**

a) Double Resonance in NMR spectroscopy.
b) Write note on Capillary electrophoresis-Principle and applications.
c) Electron Spin Resonance spectroscopy.
d) C^{13} NMR spectroscopy.

P.T.O.

SECTION - II

Q4) Answer the following (any 1) **[10]**

What are the ideal properties for Pumps used in HPLC? Explain different pumps used in HPLC.

OR

Discuss principle and applications of mass spectrometry. Draw well labelled diagram of double focusing mass spectrometer.

Q5) Answer the following (any 5) **[15]**

a) Calibration curve technique for quantitation in column chromatography.

b) Resolution and Number of Theoretical Plates in HPLC.

c) Single focusing mass analyzer.

d) Significance of Isotope ion.

e) Classify Ion Exchange Resins.

f) Mobile phase treatment in HPLC.

g) Mclafferty rearrangement in Mass Spectrometry.

Q6) Write short note on (any 2) **[10]**

a) HPLC Vs UPLC.

b) Detectors in Mass Spectrometry.

c) GC-MS.

d) Chemical ionization in mass spectrometry.

Total No. of Questions : 6]

SEAT No. :

P2068

[Total No. of Pages : 2

[5552]-84
Final Year B. Pharmacy
MEDICINAL CHEMISTRY - IV
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labeled diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define Anti-mycobacterial drugs? Discuss SAR, MoA and adverse effects of First line Anti-tubercular drugs. **[10]**

OR

What are Antifungal drugs? Give their classification with examples of each Class. Write in brief about Azoles as antifungal drugs. **[10]**

Q2) Answer the following (any Five) **[15]**

a) Give the scheme for synthesis of Chlorambucil.

b) Write the SAR of Isoniazide.

c) Write note on Biguanides as antimalerial drugs.

d) Explain the synergism of Trimethoprim and Sulfamethoxazole.

e) Outline the synthesis of Ciprofloxacin.

f) Write a note on Neuraminidase inhibitors

g) Discuss the SAR and MoA of benzimidazole Anthelmintics, with examples.

Q3) Write Notes on any two. **[10]**

a) Alkylating agents.

b) SAR of sulfonamides.

c) Protease Inhibitors.

d) Chemistry and SAR of Fluoroquinolones.

P.T.O.

SECTION - II

Q4) What are estrogens? Classify them with examples. Give SAR of estrogens. Give therapeutic uses of Estrogens and Antiestrogens. **[10]**

OR

Give the chemical classification of Antibiotics. Discuss the SAR and MoA of Tetracycline antibiotics with examples. **[10]**

Q5) Answer the following. (any five) **[15]**

a) Give the synthesis of Amoxycillin Trihydrate.

b) "Steroid skeleton is not essential for estrogenic activity." Explain.

c) How Tetracycline molecule is inactivated in strong acid and strong base.

d) Why Clavulinic acid is called Suicidal substrate?

e) Add a note on Antiandrogens.

f) Write in brief about Antithyroid drugs.

g) Give the synthesis of Cefadroxil.

Q6) Write notes on any TWO. **[10]**

a) Lincomycin Antibiotics.

b) SAR and MoA of Chloramphenicol.

c) Chemistry, SAR and MoA of Aminoglycoside Antibiotics.

d) Strtuctural features and therapeutic uses of Progestins.

Total No. of Questions : 6]

SEAT No. :

P2069

[Total No. of Pages : 2

[5552]-85
Final Year B. Pharmacy
4.8.5: PHARMACOLOGY - V
Including Biostatistics
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define bioavailability & bioequivalence. Give advantages & applications with special issues. **[10]**

OR

Define drug interaction. Discuss in detail drug interaction & add a note on drug food interaction with suitable example.

Q2) Solve any Five **[15]**

a) Why phenalezine should not be administered with banana, cheese, red wine. Justify

b) Explain the Thompson & Rawlins classification.

c) Explain the bioavailability, different methods of determination & its applications.

d) Explain the drug interaction during drug metabolism with suitable example.

e) Discuss in detail cardiac marker

f) Define pharmacovigilance & give its significance.

g) Give challenges & future of gene therapy.

Q3) Write notes on (any Two) **[10]**

a) Tissue engineering.

b) Drug abuse & misuse with its treatment.

c) Types of drug induced diseases.

d) TDM & its Importance.

P.T.O.

SECTION - II

Q4) Write the composition, objective, organization & therapeutic committee in hospital pharmacy. **[10]**

OR

What is GCP? Give guideline of GCP & explain in detail Schedule Y.

Q5) Solve any Five **[15]**

a) Discuss in detail informed consent.

b) Define inclusion criteria, randomization & double blind study.

c) Discuss in detail phase IV clinical trial.

d) Write about data monitoring committee.

e) Explain ethical issues in Nuremberg code.

f) Write composition & responsibilities of IEC.

g) Explain the types of clinical research.

Q6) Write notes on (any Two) **[10]**

a) Role of clinical trial in new drug development.

b) Bed side pharmacy & satellite pharmacy.

c) Outpatient service.

d) Hospital formulary.

Total No. of Questions : 6]

SEAT No. :

P2070

[Total No. of Pages : 2

[5552]-86

Fourth Year B. Pharmacy

4.8.6 : NATURAL PRODUCTS : COMMERCE, INDUSTRY & REGULATIONS

(2013 Pattern) (Semester-VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION-I

Q1) Solve any one: **[10]**

Describe the share of spices and condiments in domestic market of herbal products.

OR

Comment on regulatory requirements for production of herbal drugs in India.

Q2) Solve any five: **[15]**

a) Discuss the importance of biofuels.

b) Comment the difficulties to run plant based drug industry.

c) Comment of ICH guidelines for herbal drug industry.

d) Describe the documents required to obtain License for Herbal drug manufacturing.

e) Describe the global market size of essential oils.

f) Give brief note on turnover of OTC herbal products in domestic market.

g) Comment on volume of nutraceuticals in Indian economy.

P.T.O.

Q3) Write notes on any two: **[10]**

a) Herbal excipients market.

b) Leading Herbal drug manufacturers.

c) WHO guidelines for herbal drug manufacturing.

d) Sale of herbal drug in India.

SECTION-II

Q4) Solve any one: **[10]**

Define and classify allergens. Comment on inhalant allergens.

OR

What is need of pharmacovigilance. Write its protocol with significance.

Q5) Solve any five: **[15]**

a) Write adverse drug reactions of Liquorice.

b) Describe primary exposure in allergy.

c) Write objectives of Pharmacovigilance.

d) Comment on the toxicity of St. Jhon's Wort.

e) Discuss on Injectant allergens.

f) Write the functions of national Pharmacovigilance centre.

g) Describe the preparation of allergenic extracts.

Q6) Write notes on any two: **[10]**

a) Diagnosis of allergy.

b) Toxicity of Cannabis.

c) Who guidelines for herbal drug safety.

d) Infestant and ingestant allergens.

Total No. of Questions : 6]

SEAT No. :

P2071

[Total No. of Pages : 2

[5552]-87
F.Y. B.Pharmacy
QUALITY ASSURANCE TECHNIQUES
(2013 Pattern) (Semester - VIII)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss in detail validation master plan (VMP). **[10]**

OR

Explain URS, DQ, IQ, OQ & PQ.

Q2) Attempt any five of the following. **[15]**

a) Discuss the organization of Quality Assurance department.
b) Discuss total quality controls.
c) Explain concurrent validation.
d) Discuss importance of Quality Audits.
e) Explain validation of compression machine.
f) Discuss quality control.
g) Write the important guidelines for cleaning method validation.

Q3) Write short notes on any two of the following. **[10]**

a) QC of finished product.
b) Validation of tray dryers.
c) QBD.
d) Statistical quality control.

SECTION - II

Q4) What is change control? Explain and design documents for change control. **[10]**

OR

Explain the role of QA and write the importance of Documentation.

P.T.O.

Q5) Attempt any five of the following. **[15]**

a) Write precautions during processing of intermediate products.

b) Give responsibilities of personnel in cGMP.

c) Explain clothing of personnel in manufacturing plant.

d) Explain construction of equipment in manufacturing plant.

e) Explain Testing Frequency in stability testing of new drug.

f) Explain Plumbing and drainage system in manufacturing plant.

g) Explain Design, size and location for equipment.

Q6) Write short notes on any two of the following. **[10]**

a) Measure for controlling contamination in clean room.

b) Quality Manual and Quality policy.

c) Sanitation of manufacturing premises.

d) Components of QA.

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