Total No. of Questions : 6] SEAT No. :

P1683 [Total No. of Pages : 2

[4749] - 101
First Year B. Pharmacy (Semester - I)
1.1.1 T : PHARMACEUTICS - I
(2013 Pattern)

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

Instructions to the candidates:

1) ***Answers 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]**

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

OR

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

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

a) Write the preservatives used in liquid oral formulations.

b) Write the scope of pharmaceutical engineering.

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

d) Describe Homoeopathy as an alternate system of medicine.

e) Write the principles of Ayurveda.

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

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

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

a) Scope of Formulation Development and Hospital pharmacy.

b) USP.

c) Principles of Siddha and Unani.

d) Pharmacy code of ethics.

P.T.O.

SECTION - II

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

What are solutions? Explain various methods to improve the solubility of poor water soluble drugs.

OR

Describe the concept of preformulation and formulation.

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

a) Which are the major factors affecting the stability of pharmaceutical product.

b) Discuss formulation of elixir.

c) What are aromatic waters? How they are preserved? Differentiate between aromatic and concentrated aromatic water.

d) What are syrups? How invert syrup is prepared and stored.

e) Explain CGMP as a tool for quality assurance.

f) Discuss the formulation and evaluation of oral rehydration powder.

g) Enlist various IPQC and quality control tests for solutions.

Q6) **Write short notes (any two) :** **[2 × 5 = 10]**

a) Types of water used in pharmaceutical solutions.

b) Discuss formulation and evaluation of tooth powder.

c) Validation parameter of quality analysis.

d) Types of enema.

Total No. of Questions : 6] SEAT No. :

P1684 [Total No. of Pages : 2

[4749] - 102
First Year B. Pharmacy (Semester - I)
MODERN DISPENSING PRACTICES
(2013 Pattern)

)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) Answer any one : **[10]**

a) Explain various parts of prescription with suitable example.

b) Elaborate on good compounding and dispensing practice.

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

a) Define posology; give formulas for dose calculation of child.

b) Give pharmacological storage condition for drug product.

c) Write note on stability of medicine.

d) Explain documentation of prescription filling.

e) Write a note on PMR.

f) Give in detail documentation of purchase and stock record.

g) Give the formulas for dose calculation of child.

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

a) Explain in brief pricing of prescription.

b) Write a note on drug profile.

c) Give the importance of pictogram with suitable example.

d) Explain proof spirit; calculate proof strength for 40% v/v alcohol.

P.T.O.

SECTION - II

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

a) Discuss with examples various types of chemical incompatibilities and methods to remove them.

b) Explain organization, structure, factors and design of retail pharmacy.

Q5) Answer any five in short : **[15]**

a) Write a detail note on idiosyncratic drug reactions.

b) Write patient counseling note for diabetis.

c) Explain the role of pharmacists in ADR.

d) Give patient counseling for inhalers.

e) What would be the dose of child of 5 years; if the adult dose is 500 mg.

f) Explain the role of pharmacists in family planning.

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

a) Write a note on drug information service.

b) Explain the steps in patient counseling for hypertension.

c) Write in detail note on rational drug use.

d) Write a short note on Drug interactions.

Total No. of Questions : 6] SEAT No. :

P1685 [Total No. of Pages : 2

[4749] - 103
First Year B. Pharmacy (Semester - I)
PHARMACEUTICAL INORGANIC CHEMISTRY
(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 answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss in detail the different sources of impurities in pharmaceuticals. **[10]**

OR

Discuss in detail the limit test of Lead and sulphate.

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

a) Explain the physiological role of calcium and magnesium in body.

b) Discuss the mechanism of action of antimicrobials as topical agents.

c) What are protectives and adsorbants? Discuss the preparation, properties and uses of Bismuth sub carbonate.

d) Enlist the different waters official in IP and explain sterile water for injection.

e) Explain the principle and reaction involved in limit test for Chloride.

f) Write the preparation, properties and uses of calcium carbonate.

g) Explain the physiological role of chloride and bicarbonate in body.

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

a) Official control tests for water.

b) Qualitative tests for alkali and alkaline earth metals.

c) Limit test for Arsenic.

d) Inorganic gases used in pharmacy.

P.T.O.

SECTION - II

Q4) Discuss in detail about physiological acid base balance. **[10]**

OR

What are topical agents? Discuss the mechanism of action of topical agents. Discuss the properties, assay and uses of calamine and zinc oxide.

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

a) Discuss the absorption, distribution and physiological role of copper in body.

b) Write the properties, assay and uses of nitrogen.

c) Write properties, storage and uses of compounds used in cyanide poisoning.

d) Describe the preparation, properties and uses of hydrogen peroxide.

e) Discuss the role of Zinc and its salts as essential and trace ion.

f) Discuss properties, storage and uses of sodium fluoride.

g) What are expectorants? Discuss the mechanism of action of expectorants.

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

a) Methods to remove hardness of water.

b) Radioopaqoe contrast media.

c) Properties, storage and uses of magnesium hydroxide.

d) Electrolyte combination therapy.

Total No. of Questions : 6] SEAT No. :

P1686 [Total No. of Pages : 4

[4749] - 104
First Year B. Pharmacy (Semester - I)
1.1.4 : PHARMACEUTICAL ORGANIC CHEMISTRY - I
(2013 Pattern)

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

Instructions to the candidates:

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

SECTION - I

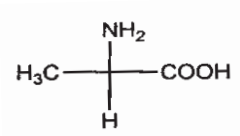
Q1) What are elimination reactions? Explain mechanism, stereochemistry of E_1 and E_2 reactions. Compare E_1 and E_2 mechanism. **[10]**

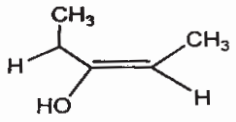
OR

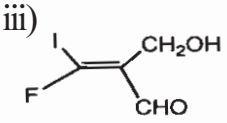
What is aromatic electrophilic substitution reaction? Write down the mechanism of Halogenation and nitration of benzene. What is the importance of concentrated sulphuric acid in nitration?

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

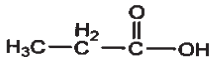
a) Assign R/S or E/Z configuration to following.

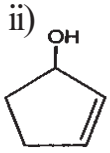
i) 

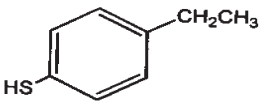
ii) 

iii) 

b) Write IUPAC names for following structures.

i) 

ii) 

iii) 

c) Write any three reactions of alkanes.

d) Define following terms with suitable examples.

i) Carbocation ii) Carbanion iii) Electrophile

P.T.O.

e) Discuss Markovnikoff rule with example.

f) Explain tautomerism with example.

g) Draw resonating structures of any two from following.

i) Aniline

ii) Nitrobenzene

iii) Benzoic acid

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

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

b) Define hybridization. Mention different types of hybridization? Explain sp^2 hybridization.

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

d) Draw structures of following compounds from IUPAC names.

i) 1, 1 - dichloromethane.

ii) 3 - chloro - 2 - methylpentan - 2 - one.

iii) 2 - butenal.

iv) Methyl ethanoate.

v) N, N-dimethyl ethanamine.

SECTION - II

Q4) a) What is isomerism? Explain any four types of isomerism with examples.

b) Classify various types of chemical reactions with suitable examples.

[10]

OR

Explain the directing effects of following functional groups towards electrophilic substitutions on benzene:

a) –OH b) $-CH_3$

c) –COOH d) $-NO_2$

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

a) Arrange following in order of increasing acidity with explanation.

i) Acetic acid

ii) Trichloroacetic acid

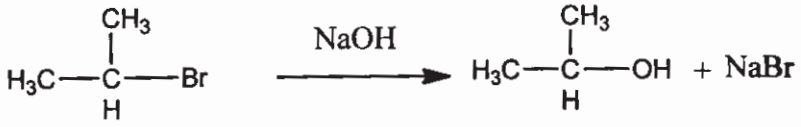
iii) Chloroacetic acid

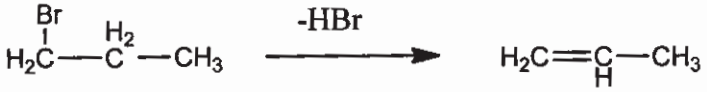
b) Explain Saytzeff rule for 1,2 elimination reaction?

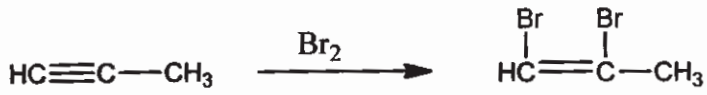
c) Write a note on ozonolysis.

d) Tertiary carbocations are more stable then secondary carbocations explain.

e) Identify the type of chemical reaction (Addition, Substitution etc.) in following :

i) 

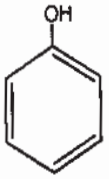
ii) 

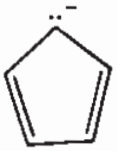
iii) 

f) Explain hyper conjugation and inductive effect with example.

g) Apply Hukel's rule of aromaticity and differentiate following compounds into aromatic and non-aromatic (anti-aromatic) compound.

i) 

ii) 

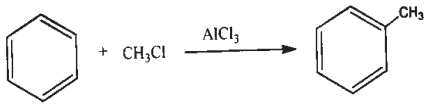
iii) 

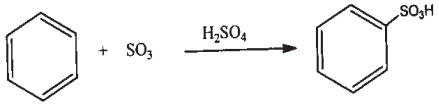
Q6) Solve any two : **[10]**

a) Inter and Intra molecular forces of attraction.

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

c) Write down the stepwise mechanism for following reactions.

i) 

ii) 

d) Explain Inductive effect, Mesomeric effect, Electromeric effect and resonance with examples.

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Total No. of Questions : 6] SEAT No. :

P1687 [Total No. of Pages : 2

[4749] - 105
First Year B. Pharmacy (Semester - I)
1.1.5 : HUMAN ANATOMY AND PHYSIOLOGY - I
(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 answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What are the different types of muscular tissues? Write their functions and properties. Discuss the anatomy and physiology of skeletal muscles. **[10]**

OR

Enlist the clotting factors. Describe in detail the mechanisms that contributes to hemostasis and hemostatic control mechanism.

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

a) Describe the structure and function of platelets.

b) Define the term inflammation and hemorrhage.

c) Describe the structure and function of mitochondria.

d) Describe the structure and function of RBC.

e) What are the functions of plasma membrane?

f) Explain aquired/adaptive immunity.

g) Discuss the arrangement of proteins in the plasma membrane.

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

a) Protein synthesis.

b) Active transport across plasma membrane.

c) Epithelial tissue.

d) ABO and Rh blood type.

SECTION - II

Q4) Explain the structure of heart with neat-labeled diagram. Discuss the cardiac cycle. **[10]**

OR

Enlist the organs of digestive system. Describe the structure of stomach. Explain the mechanical and chemical digestion in stomach.

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

a) Explain the structure and functions of Lymph node.

b) Explain the composition and functions of saliva.

c) Define health. Add note on health promotion.

d) Enlist the elements of conduction system of heart. Add note on AV nodal delay.

e) Write note on SL valves.

f) Define the terms peptic ulcer, gastritis and dysentery.

g) Explain the concept of balanced diet.

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

a) Maintenance and regulation of blood pressure.

b) Liver.

c) Electro-cardiogram (ECG).

d) Spleen.

Total No. of Questions : 6] SEAT No. :

P1688 [Total No. of Pages : 2

[4749] - 106
First Year B. Pharmacy (Semester - I)
1.16 : COMMUNICATION & SOFT SKILL DEVELOPMENT
(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 writteen in separate answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

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

a) What are interpersonal and intrapersonal skills? Explain various interpersonal skills with their importance.

b) Define communication. Enlist types of communication. Describe barriers of communication and effective treatment.

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

a) Explain the objective and need for communication.

b) Explain structuring a message and effective ways to improve the same.

c) Explain the process of developing effective message.

d) Write a note on summary and abstract of a formal report.

e) Explain salient features of technical communication.

f) Explain any three types of business letters.

g) A pharmacy college wants to make enquiry for purchase of books for its library, Write business letter regarding the same.

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

a) Business report and its structure.

b) Electronic mail.

c) Objective style and literary composition.

d) Why it is essential to maintain variety in sentences and paragraphs in written communication?

P.T.O.

SECTION - II

Q4) Give detail account on use of modern technology in communication. **[10]**

OR

Explain in detail about soft skills - an integral part of communication.

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

a) Contents of memo.

b) What are instructions?

c) Describe email etiquetter.

d) Format of 'leave letter'.

e) Explain effective profiling.

f) Rough chart v/s final report.

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

a) Personnel interview and group discussion.

b) Role of phonetics in effective communication.

c) Write a complaint letter for unavailability of laboratory chemicals and also forward the order letter for the same.

Total No. of Questions : 6] SEAT No. :

P1264 [Total No. of Pages : 2

[4749] - 11
First Year B. Pharmacy
PHARMACEUTICS - I
(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

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

Discuss in detail concept of physicochemical properties involved in preformulation.

OR

Define bioavailability and bioequivalence. Explain the factors affecting drug absorption and distribution.

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

a) What is Pharmacopoeia? Add a note on United States Pharmacopoeia.

b) Enlist the different routes of drug administration; explain in brief regarding ocular route of drug administration.

c) Describe various packages for Tablets.

d) Describe Ayurvedic system of medicine.

e) Classify the dosage forms.

f) Explain the ideal characteristics of packaging materials.

g) Explain the development of pharmacy profession in India.

P.T.O.

Q3) Write short notes (Any Three) : **[15]**

a) Drug Metabolism.

b) Clinical Trials.

c) Pharmaceutics and its scope.

d) Dose response curve.

e) cGMP & Quality Assurance.

SECTION - II

Q4) Explain mechanism of powder mixing. Explain factors affecting solid-solid mixing. Describe principle construction and working of double cone blender. **[10]**

OR

Describe principle, construction and working of plate and frame filter.

Q5) Solve any five (3 marks each) **[15]**

a) Draw a well labelled diagram of ribbon blender.

b) Explain factors affecting on size reduction.

c) Write a note on dusting powder.

d) Write a note on pouch filling machine.

e) Explain how aeration and foam is prevented during mixing of liquids.

f) Describe construction and working of paddle mixer.

g) Discuss formulation of tooth powder.

Q6) Solve any three (5 marks each) **[15]**

a) Discuss formulation and evaluation of dry syrup. Mention advantages of dry syrup.

b) Explain in detail factors affecting on rate of solution.

c) Describe principle construction and working of ball mill.

d) Discuss formulation and evaluation of oral rehydration powder.

e) Describe theory of filtration. Draw and describe leaf filter.

Total No. of Questions : 6] SEAT No. :

P1265 [Total No. of Pages : 2

[4749] - 12
F.Y. B. Pharmacy
MODERN DISPENSING PRACTICES
(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

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

a) Define prescription, Explain in detail responding to prescription and pricing of prescription.

b) Explain in detail fundamental operations involved in compounding and dispensing of pharmaceutical product and comment on container and closure of dispensed product with suitable example.

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

a) Write a detail note on PMR.

b) Write a note on "Code of Pharmaceutical ethics".

c) Explain labeling of dispensed product.

d) In what proportion may a pharmacist's 30% and 80% alcohol be mixed to make 1000 mL of 50% alcohol?

e) Write a note on idiosyncratic cases.

f) Explain in detail pharmacist consultation for OTC product.

g) Define molarity, normality, millimoles and milliequivalence.

P.T.O.

Q3) Answer any three : **[15]**

a) Comment on "Pharmacist as health care provider".

b) Give details on patient counseling of prescription of drugs.

c) Give various areas of pharmaceutical career development.

d) Explain proof spirit; calculate proof strength for 50% v/v alcohol.

SECTION -II

Q4) Solve any one from the following : **[10]**

a) Write a detailed account on drug interaction.

b) Describe ligatures and sutures in detail.

Q5) Solve any five from the following in brief. **[15]**

a) Explain formulation methods of ointments.

b) Explain in brief physical incompatibility.

c) Explain legal requirements for establishment and maintenance of drug store.

d) Explain formulation of Tooth Pastes.

e) Describe effervescent granules.

f) Explain role of Pharmacist in adverse drug reactions.

g) Explain counseling for diabetic patients.

Q6) Write a short note on following (solve any three) **[15]**

a) Methods of preparation of ointments.

b) Topical gels.

c) Rational drug use.

d) Advantages and applications of Suppository in drug delivery.

e) Define displacement value and its role in suppositories.

Total No. of Questions : 6] SEAT No. :

P1266 [Total No. of Pages : 2

[4749] - 13
F.Y. B. Pharmacy
1.3 : PHARMACEUTICAL INORGANIC CHEMISTRY
(2008 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) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define limit test, Explain the principle and procedure involved in the limit test for lead as per I.P. **[10]**

OR

Give definition of purity and explain in details various sources of impurities in pharmaceutical substances.

Q2) Attempt ANY FIVE of the following : **[15]**

a) Write quality control test for water.

b) Physiological acid - base balance.

c) Assay of aspirin as per I.P.

d) Elaborate various official preparations of sodium chloride.

e) Describe an antacids containing aluminium.

f) Write properties and mode of actions of any one antidote.

g) Write limit test for chloride as per I.P.

P.T.O.

Q3) Write notes on ANY THREE of the following : **[15]**

a) Oxygen gas.

b) Methods for remove the hardness of water.

c) Mechanism of action of antimicrobials.

d) Essential elements for body.

e) Electrolyte combination therapy.

SECTION - II

Q4) What are topical agents? Enlist and explain protective's and adsorbents. **[10]**

OR

What are radioisotopes? Write a principle involve in nuclear chemistry and give its pharmaceutical application.

Q5) Attempt ANY FIVE of the following : **[15]**

a) Give the brief history of Indian Pharmacopoeia.

b) Write the assay of Boric acid as per I.P.

c) Write mode of action of protective agents.

d) Write the assay of iron as per I.P.

e) Applications of dental products.

f) Write properties and mode of action of aluminum hydroxide.

g) Discuss the principle involved in the limit test for sulphate as per I.P.

Q6) Write notes on ANY THREE of the following : **[15]**

a) Official waters.

b) Theory behind buffer action.

c) Classify antidotes with examples, describe any one agent in detail.

d) Ammonia gas.

e) Expectorants.

Total No. of Questions : 6] SEAT No. :

P1267 [Total No. of Pages : 3

[4749] - 14
F.Y. B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY - I
(2008 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 books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Enlist various factors affecting electron availability. Explain each factor in detail giving suitable example. **[10]**

OR

Explain various reaction Intermediates with suitable example.

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

a) Arrange the following in increasing order of basicity giving reason.

i) Dimethylamine

ii) Methylamine

iii) Trimethylamine

b) Explain Intermolecular forces.

c) Define and explain nucleophile and electrophile with suitable example.

d) Differentiate between sigma & pi bonds.

e) Explain steric effect with example.

f) Give reason why chloroacetic acid is stronger acid than acetic acid.

g) Explain structural Isomerism with suitable example.

P.T.O.

Q3) Answer the following any three : **[15]**

a) Hybridization in carbon.

b) Write synthesis of following :

i) 2, 4, 6 - tribromoaniline

ii) Acetanilide.

c) Draw structure of following :

i) 2 - chloro pentane

ii) 1, 1, 1 - triphenyl methane

iii) 1, 1, 2 - tribromopropane

iv) 3 - buten - 2 - one

v) Methyl ethanoate.

d) What is resonance effect? Explain with suitable example.

e) Explain electrophilic attack on benzene with suitable example.

SECTION - II

Q4) What are elimination reactions? Explain E_2 reaction with suitable example. **[10]**

OR

Give any three methods of preparation and reactions of amine with suitable example. Explain primary, Secondary, tertiary amine giving suitable example.

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

a) What is hydration? Explain with suitable example.

b) What are various rules of elimination. Explain with example.

c) Give any two methods of preparation of carboxylic acids, with examples.

d) Arrange the following compounds in increasing order of basicity and justify arrangement.

i) Ethylamine

ii) Triethyl amine

iii) Diethylamine

e) Give any two preparations methods for phenols with suitable example.

f) Explain cannizzaro reaction with suitable example.

g) Explain addition of halogen acids across C-C double bond.

Q6) Write short notes on any three : **[15]**

a) Ozonolysis.

b) Aldol condensation.

c) Elcb mechanism for elimination reaction

d) Michael condensation.

e) Saytzeft elimination rule.

Total No. of Questions : 6] SEAT No. :

P1268 [Total No. of Pages : 2

[4749] - 15
F.Y. B. Phramacy
HUMAN ANATOMY & PHYSIOLOGY
(2008 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 books.***
3) ***Figures to the right indicate full marks.***
4) ***Neat diagrams must be drawn wherever necessary***

SECTION - I

Q1) Draw a neat labelled diagram of digestive system. Explain in detail structure & functions of each organ. **[10]**

OR

Discuss blood coagulation mechanism.

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

a) Define hypertension, anemia & bronchial asthma.

b) Write characteristics of muscular tissues.

c) Discuss structure & function of stomach.

d) Draw a neat labelled diagram of respiratory system.

e) What are different types of blood cells? Write their characteristics.

f) Explain blood circulation through heart.

g) Discuss structure & function of spleen.

P.T.O.

Q3) Write short notes on (any three) : **[15]**

a) Cell

b) Blood pressure

c) Transport of gases

d) Hemolytic disease of newborn

e) ECG

SECTION - II

Q4) Draw a neat labelled diagram of female reproductive system. Explain physiology of menstruation and role of oestrogen and progesterone. **[10]**

OR

Draw a neat labelled diagram of central nervous system. Explain structure and functional areas of brain.

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

a) Explain structure and function of ear.

b) Discuss venin anglotensin aldosterone system.

c) Discuss male reproductive system and hormones involved in it.

d) Discuss structure and function of thyroid and parathyroid glands.

e) Classify nervous system. Discuss cranial nerves.

f) Draw a neat labelled diagram of skin.

g) Discuss characteristics and functions of muscle tissue.

Q6) Write short notes on any three : **[15]**

a) Parasympathetic nervous system.

b) Synapse and neurotransmitters.

c) Anatomy and physiology of hormones of pituitary gland.

d) Pancreatic islets.

e) Sports physiology.

Total No. of Questions : 6]

SEAT No. :

P1269

[Total No. of Pages : 2

[4749] - 16

First Year B.Pharmacy

PHARMACEUTICAL ENGINEERING

(2008 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 books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Add a note on crystallisation by adiabetic evaporation. Explain factors responsible for caking of crystals. **[10]**

OR

Enlist types of evaporators. Explain capacity and efficiency of multiple effect evaporator in comparison to single effect evaporator.

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

a) Explain boiling inside a vertical tube.

b) Explain factors affecting heat transfer coefficient.

c) Explain types of boilers and give accessories and mountings of boilers.

d) Define Air Handling Unit (AHU), clean room & HEPA filter.

e) Add a note on tubular heat exchanger.

f) Explain Kirchoff's law of heat transfer.

g) Add a note on Wiped film evaporator.

P.T.O.

Q3) Write short notes on any three of the following: **[15]**

a) Theories of crystal growth.

b) Plate heat exchanger.

c) Centrifugal rotary evaporator.

d) Heat transfer by conduction and convection process.

e) Methods used for removal of condensates.

SECTION - II

Q4) Define extraction. Give various types of extraction process and explain in detail principle, construction and working of any two extractors. **[10]**

OR

Discuss fluid flow through packed beds with respect to Poisenlli's and Kozeny's approach.

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

a) Add a note on tray dryer.

b) Add a note on pitot tube.

c) Explain principle and working of turbo tray dryer.

d) Explain flash distillation process in detail.

e) Explain concept of molecular diffusion in gases.

f) Explain principle, construction and working of Venturimeter.

g) Explain the concept of packed columns in fractional distillation.

Q6) Write short notes on any three of the following: **[15]**

a) Plate efficiency.

b) Various types of Corrosion.

c) Spray dryer.

d) Mass transfer in turbulant and laminar flow.

e) Theory of drying.

Total No. of Questions : 6]

SEAT No. :

P1270

[Total No. of Pages : 2

[4749] - 17

First Year B.Pharmacy

Computer Application & Biostatistics

(2008 Pattern)

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

Instructions to the candidates:

1) ***All questions are compulsory and figures to right indicate full marks.***
2) ***Use of programmable calculator is not allowed and exchange of calculators is strictly prohibited.***
3) ***Use graph papers wherever necessary.***

SECTION - I

Q1) Explain various methods statistical data representation with suitable example. **[10]**

OR

Find mean and standard deviation for following data:

Variable Range	0-3	3-6	6-9	9-12	12-15	15-18	18-21
Frequency	3	5	8	7	4	2	1

Q2) a) Distinguish between binomial and normal distribution. **[3]**

b) There are two probabilities involved in Bernoulli's binomial trial experiment. Comment with example. **[3]**

c) Where to apply student t and paired t? Explain. **[3]**

d) Comment on significance level and error level in hypothesis testing. **[3]**

e) Short note on sign rank test. **[3]**

P.T.O.

Q3) a) Explain different types of charts used to represent statistical data. **[5]**

b) Find the equation of regression lines for the following data: **[5]**

Variable X	10	12	11	12	9	11
Variable Y	6	4	5	7	8	6

c) Find the coefficient of correlation for the following paired data. **[5]**

Variable X	7	8	7	6	7	8
Variable Y	12	13	14	15	16	13

SECTION - II

Q4) What is an operating system? Explain different types of operating system. **[10]**

OR

Explain in detail different types of computer input devices.

Q5) a) What are applications of computers in Pharmacy? **[3]**

b) Give different types of Networking. **[3]**

c) Write down the features of MS-PowerPoint. **[3]**

d) What are different types of Printers? **[3]**

e) Write about the computer backup files. **[3]**

Q6) a) Explain in detail different types of scanners and printers. **[5]**

b) Differentiate between Hard Disk Drive (HDD) and Floppy Disk Drive (FDD). **[5]**

c) Comment on Computer virus and its prevention. **[5]**

Total No. of Questions : 6] SEAT No. :

P1689 [Total No. of Pages : 2

[4749] - 201
First Year B. Pharmacy (Semester - II)
1.2.1 : PHARMACEUTICS - II
(2013 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) **Attempt any one question out of two :** **[10]**

a) Explain the principle construction, working, applications, advantages and disadvantages of plate and frame filter press.

b) Explain the principle construction, working, applications advantages and disadvantages of fluidized energy mill.

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

a) Explain significance of particle size separation.

b) Define Bioavailability, bioequivalence and first pass effect.

c) Define Filter aids and explain ideal characteristics of filter aids.

d) Explain the mechanisms of size reduction with examples.

e) Summarize the factors affecting rate of filtration.

f) Discuss the role of packaging in pharmaceutical products.

g) Discuss different types of packaging materials.

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

a) Plant layout designing.

b) Unit dose packaging.

c) Colloid Mill.

d) Impellor.

P.T.O.

SECTION - II

Q4) **Attempt any one question out of two :** **[10]**

a) State the factors affecting mixing. Explain mechanism and equipments used in liquid mixing.

b) Explain importance of GMP and explain the basic requirements for CGMP Current Good Manufacturing Practices.

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

a) Write the importance of GMP.

b) Discuss the significance of size reduction in pharmacy.

c) Explain concept of powder gradation.

d) Define and differentiate between filtration and clarification.

e) Discuss importance of Particle size measurement.

f) Explain the mechanism of powder mixing.

g) What are baffles? Give its significance.

Q6) **Write note on any Two :** **[10]**

a) Evaluation of glass as packaging material.

b) Factors affecting size reduction.

c) Techniques of Particle size measurements.

d) Absorption.

Total No. of Questions : 6] SEAT No. :

P1690 [Total No. of Pages : 2

[4749] - 202
First Year B. Pharmacy (Semester - II)
DOSAGE FORM DESIGN
(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 answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Give different types of suppositories discuss in brief evaluation of suppositories marks. **[10]**

OR

Explain theories of emulsions, and its formulation aspects marks.

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

a) Concept of target drug delivery system.

b) Explain the concept of modified release dosage forms.

c) Explain the process of solubilization of solute in solvent.

d) Note on Dry suspensions for reconstitution.

e) Explain HLB and RHLB.

f) Note on suspensions containing poorly wettable solids.

g) Explain quality control aspects of radiopharmaceutical dosage forms.

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

a) Give various ways of expression of solubility.

b) Brief note on NDDS.

c) Discuss methods of producing radionuclides.

d) Elaborate formulation of microemulsion.

P.T.O.

SECTION - II

Q4) What are suspensions? Classify them and explain its applications in drug delivery systems. **[10]**

OR

What are Radiopharmaceuticals? Write note on therapeutic applications of Radiopharmaceuticals.

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

a) Differentiate between paste and cream.

b) Comment on suspending agents.

c) Define pastes. What are the types of pastes.

d) Diagnostic applications of radiopharmaceuticals.

e) What are various evaluation tests for ointments.

f) What are jellies? Write its applications.

g) Evaluation tests for suppositories.

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

a) Explain formulation of dry powder suspension.

b) Evaluation of suspension.

c) Displacement value.

d) Coca butter as a base.

Total No. of Questions : 6] **SEAT No. :**

P1691 **[Total No. of Pages : 2**

[4749] - 203
First Year B. Pharmacy (Semester - II)
PHARMACEUTICAL ORGANIC CHEMISTRY - II
(2013 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) What are SN^1 and SN^2 reactions? Explain mechanism and factors affecting SN^1 reactions. **[10]**

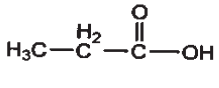
OR

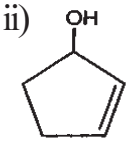
What are nucleophilic addition reactions? Explain in brief addition of Grignard reagent, alcohol to aldehydes.

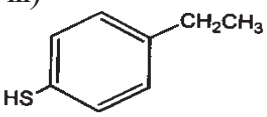
Q2) Answer the following. (Any five) : **[15]**

a) Write any two methods of preparation of carboxylic acids.

b) Write the IUPAC names of following.

i) 

ii) 

iii) 

c) How will you differentiate between primary, secondary, and tertiary amines by chemical test.

d) Give any two reactions of benzene sulfonic acid.

e) Why Chloroacetic acid is stronger than acetic acid.

f) Explain any two reactions of alkyl cyanides.

g) Compare basicity between cyclohexylamine and aniline.

P.T.O.

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

a) Explain Hoffmann's degradation of amides.

b) Write synthetic uses of ethylacetoacetate.

c) Write note on knoevenagel condensation.

d) Explain acidity of phenols.

SECTION - II

Q4) What are amines? Explain separation methods of amines from the primary, secondary and tertiary amines mixture. **[10]**

OR

What are aromatic sulfonic acids? Explain acidity of benzene sulfonic acid and write laboratory method of preparation of benzene sulfonic acid.

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

a) Write any two methods of preparation of alkyl halides.

b) Explain why boiling point of alcohols are much higher than those of corresponding alkanes

c) How will you distinguish between phenols and ethyl alcohol?

d) Write any two reactions of acid chloride.

e) Draw structures from IUPAC names of following compounds. (Any three)

i) 3-Ethyl-4-methyl petenoic acid.

ii) 2-Propene-1-ol.

iii) 4-Pentenamide.

iv) 4-Methyl-2-pentanone.

f) Explain Kolbe - Schimidt reaction of phenols.

g) Write distinguishing test of primary, secondary, tertiary alcohols.

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

a) Explain Dieckmann condensation.

b) Compare and contrast between substitution and Elimination.

c) Explain Oppenaur oxidation.

d) Write any two methods of preparation of aldehydes.

Total No. of Questions : 6] SEAT No. :

P1692 [Total No. of Pages : 2

[4749] - 204
First Year B. Pharmacy (Semester - II)
1.2.4 : HUMAN ANATOMY AND PHYSIOLOGY - 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 answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the anatomy of spinal cord. Write in detail about reflex arc. **[10]**

OR

Define respiration. Describe the actions of muscles involved in breathing. Add a note on transport of gases.

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

a) Draw neat labeled diagram of internal ear.

b) Explain the thermoregulation in brief.

c) Write a note on ventricles of brain.

d) Enlist cranial nerves with their function.

e) Describe the structure of olfactory receptors.

f) Explain the meninges of the CNS.

g) Define and give clinical significance of different respiratory volumes.

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

a) Structure of neuron.

b) Physiology of vision.

c) Structure and functions of skin.

d) Cerebrum.

P.T.O.

SECTION - II

Q4) Explain the physiological role of hormones of anterior pituitary gland. **[10]**

OR

Explain in detail various phases of Menstrual Cycle and harmones involved in it.

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

a) Write location and functions of kidney.

b) Explain structure of sperm with a neat labeled diagram.

c) Write a note on Hypothalamic hormones.

d) Draw a neat labeled diagram of Nephron.

e) Enlist name and function of types of Anterior Pituitary Cells.

f) Write function of Seminal Vesicle, Prostate and Cowper's gland.

g) Write a note on the juxtaglomerular apparatus (JGA).

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

a) Spermatogenesis.

b) Calcium Homeostasis.

c) Physiology of micturition.

d) Renin angiotensin aldosterone system.

Total No. of Questions : 6] **SEAT No. :**

P1693 **[Total No. of Pages : 2**

[4749] - 205
F.Y.B.Pharmacy (Semester - II)
PHARMACOGNOSY
(2013 Pattern)

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 books.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Attempt any one :

a) Elaborate a detail account of structure and functions of proteins. **[10]**

OR

b) Explain in detail general morphology and anatomy of leaf.

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

a) List out various under - disciplinary subjects.

b) Explain in brief applied botany.

c) Explain in brief relevance of Biology to pharmaceutical sciences.

d) List out various ergastic cell content.

e) Differentiate between meristematic tissues and permanent tissues.

f) Explain in brief general morphology of bark.

g) Explain in brief plant cell wall.

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

a) History of DNA structure.

b) Mitosis.

c) Secondary growth in plant.

d) General anatomy of seed.

P.T.O.

SECTION - II

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

a) Explain in detail importance of plant growth regulator.

OR

b) Define pharmacognasy and explain it's current status and scope.

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

a) Explain in brief saprophytic mode of nutrition.

b) Explain in brief need for classification of plants.

c) Explain in brief artificial method of classification.

d) Describe ecological succession.

e) Describe dynamics of ecosystems.

f) Explain in brief speciation and extinction.

g) Explain in brief phytoremediation.

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

a) Binomial nomenclature.

b) Site and pathway for photosynthesis.

c) Hybridization.

d) Significance of western Ghat Biodiversity.

Total No. of Questions : 6] **SEAT No. :**

P1694 **[Total No. of Pages : 2**

[4749] - 206
F.Y. B. Pharmacy (Semester - II)
PHARMACEUTICAL ANALYSIS - I
(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 answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

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

OR

Explain in detail various neutralisation curves of acid base titrations with examples.

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

a) Differentiate between normality and molarity.

b) Define primary standard and give its properties.

c) Explain the terms standard deviation and regression.

d) Define buffer. Explain the types of buffers.

e) Explain leveling and differentiating effect.

f) Give neutralisation curve of strong acid & strong base with example.

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

a) Acid base indicators.

b) Minimization of errors in analysis.

c) Measures of central tendancy.

d) Limitations of Arrhenius theory.

P.T.O.

SECTION - II

Q4) State and explain various type of EDTA titration. **[10]**

OR

Discuss the unit operations in Gravimetric analysis.

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

a) Discuss on Metallochromic indicators.

b) Explain chelation and coordination number.

c) What is the need for masking and demasking agents?

d) How will you standardize 0.05 disodium edetate solution.

e) How redox indicator changes colour near the equivalence point.

f) Differentiate between qualitative & quantitative analysis.

g) Explain how ferroin acts as redox indicator.

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

a) Ligand & sequestering agent.

b) Co - precipitation.

c) Argintometric titration curve.

d) K Fajans method.

Total No. of Questions : 6]

SEAT No. :

P1271

[Total No. of Pages : 2

[4749] - 21
S.Y. B.Pharmacy
Physical Pharmacy
(2008 Revised 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 on separate answer sheets.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss about electrical properties of colloids. **[10]**

OR

Enlist various colligative properties. Explain any one property with its methods of determination.

Q2) Answer in brief (Any Five): **[15]**

a) State the Gibbs phase rule with examples.

b) State the Shultz - Hardy rule.

c) Write a note on properties of lyophilic colloids.

d) Linde's method of liquefaction of gases.

e) Enlist factors affecting solubility of gases in liquids.

f) Hofmeister series.

g) Polymorphism.

P.T.O.

Q3) Short notes (Any Three): **[15]**

a) One-component system (water).

b) Conductometric titrations.

c) X-ray crystallography.

d) Compressibility factor.

e) Significance of partition coefficient.

SECTION - II

Q4) Explain thixotrophy and anit-thixotrophy. Describe the role of thixotrophy in pharmaceutical formulations. **[10]**

OR

Enumerate the derived properties of powders and how are they evaluated.

Q5) Answer in brief (Any Five): **[15]**

a) List four methods to improve flow properties of granules and powders.

b) Differentiate between Zeta potential and Nerst potential.

c) Explain the method for determination of interfacial tension.

d) Define pseudo first order give two examples.

e) Define contact angle and what are its applications.

f) Define rheology and enlist its application.

g) Write the advantages of basket type over paddle type dissolution apparatus.

Q6) Write short notes on (Any Three): **[15]**

a) Coulter-Counter method.

b) Falling sphere viscometer.

c) Degradation Pathways for drugs.

d) Non-Newtonian types of flow.

e) Surface pressure method for determination of Surface tension.

Total No. of Questions : 6]

SEAT No. :

P1272

[Total No. of Pages : 3

[4749] - 22

S.Y. B.Pharmacy

Pharmaceutical Microbiology & Immunology

(2008 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 books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) How will you check microbial contamination and spoilage of non-sterile pharmaceutical dosage forms. **[10]**

OR

Explain the importance of following in pharmaceutical sciences:

a) Actinomycetes.

b) Preservative efficacy test.

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

a) What is yeast? Write the applications of 'Saccharomyces cerevisiae'.

b) Draw the my diagram of phase contrast microscopy.

c) Explain in short cultural characteristics of Rickettsia.

P.T.O.

d) Differentiate between Gram-positive bacteria and Gram-negative bacteria.

e) Explain the characteristics of 'Escherichia'.

f) List different methods used for counting the microorganisms.

g) Explain:

i) Selective media.

ii) Leeuwenhoek's microscope.

Q3) Write a note on (Any Three): **[15]**

a) Cultivation of Human viruses.

b) Streak plate method.

c) Bacterial Reproduction.

d) Electron microscopy.

e) Tumour virus.

SECTION - II

Q4) Explain in detail 'Test for sterility' by considering following points: **[10]**

a) Culture media.

b) Methods.

c) Interpretation of results.

OR

Write in detail about the role of a complement system in host defense mechanism.

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

a) Differentiate between active immunity and passive immunity.

b) Explain:

i) IgM.

ii) Hapten.

c) What is attenuated vaccine? Explain.

d) Write the mechanism of action & applications of following disinfectants:

i) Chlorine.

ii) Mercuric Chloride.

e) Explain different factors affecting choice of antimicrobial agent.

f) What is microbial virulence?

g) Explain 'sterilization by filtrations'.

Q6) Write a note on (Any Three): **[15]**

a) Diphtheria antitoxin.

b) Assay of streptomycin.

c) Laminar air flow.

d) Type - I-hypersensitivity.

e) Complement-fixation test.

Total No. of Questions : 6]

SEAT No. :

P1273

[Total No. of Pages : 2

[4749] - 23

S.Y. B.Pharmacy

PHARMACEUTICAL BIOCHEMISTRY

(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. 1 and Question No. 4 are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagram must be drawn wherever necessary.***
4) ***Figures to right side indicate full marks.***

SECTION - I

Q1) Define and classify enzymes with suitable example and explain enzyme inhibition. **[10]**

OR

Define and explain anabolism and catabolism and TCA cycle with regulation and energetics of TCA cycle.

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

a) Give the functions of phospholipids.

b) Explain the bonds responsible for protein structure.

c) Role of lysosomes in cell.

d) Give the ring structure of maltose, sucrose and lactose.

e) Amino acid pool.

f) Isoelectric pH.

g) Classification of lipids.

P.T.O.

Q3) Solve any three: **[15]**

a) Enlist different ways of regulation of enzyme activity in the living system and explain Allosteric regulation and inhibition.

b) Passive transport system.

c) Biosynthesis of pyrimidine.

d) B-oxidation of fatty acid.

e) Classification of amino acid.

SECTION - II

Q4) Explain in detail kidney function test. **[10]**

OR

Define and classify vitamin with structure and explain Vit. D in detail.

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

a) Marker enzyme.

b) Disorder due to Vit. A deficiency.

c) Balance diet.

d) t-RNA.

e) Nucleosides and Nucleotides.

f) Role of fibre in nutrition.

g) Immunofluorescence.

Q6) Solve any three: **[15]**

a) Replication in eukaryotic cell.

b) Nutritional disorder in childrens and Anemia.

c) PCR.

d) RIA.

e) Metabolism of Iron.

Total No. of Questions : 8]

SEAT No. :

P1274

[Total No. of Pages : 3

[4749] - 24

S.Y. B.Pharmacy

Pharmaceutical Organic Chemistry - II

(2008 Pattern)

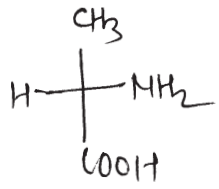
Time : 3 Hours] *[Max. Marks : 80*

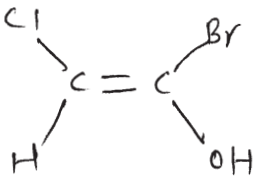
Instructions to the candidates:

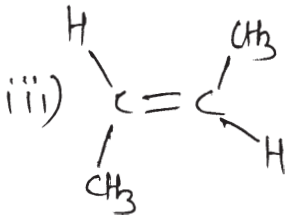
1) ***Question No. 1 & 5 are compulsory. Out of remaining question solve any two in each section.***
2) ***Answer the two sections should be written on separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to right indicates full marks.***

SECTION - I

Q1) a) Assign Configuration. **[6]**

i) 

ii) 

iii) 

b) Write a note on mutarotation. **[4]**

Q2) Define & classify amino acids & add a note on strecker synthesis & Gabrial phthalimide synthesis. **[15]**

Q3) Describe conformational analysis of ethane in detail with energy profile diagram. **[15]**

P.T.O.

Q4) Write a short note on following (Any Three): **[15]**

a) Any two methods of racemic resolution.

b) Multiple parallel synthesis.

c) Peptide bond.

d) Glucose.

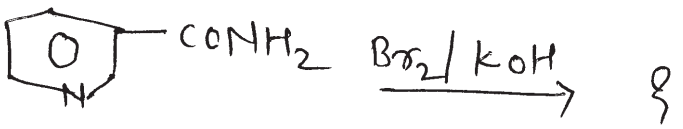
SECTION - II

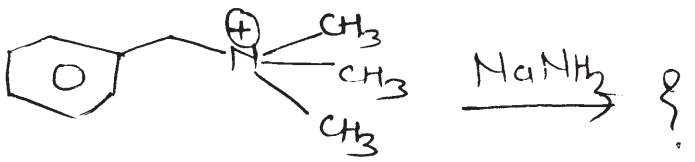
Q5) Explain reaction & mechanism of Pincol & Benzilic acid rearrangement. **[10]**

OR

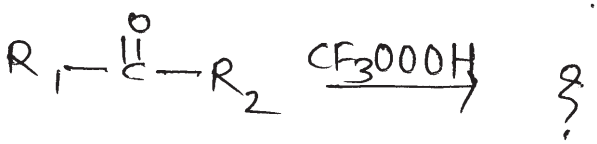
Explain reaction & mechanism of Bayer-Villiger & Hoffmann rearrangement.

Q6) Predict the product & explain reaction mechanism involved (Any Three): **[15]**

a) 

b) 

c) 

d) 

Q7) Give any two methods of synthesis with mechanism (any two): **[15]**

a) Thiophene.

b) Quinoline.

c) Pyridine.

Q8) Answer the following (any three): **[15]**

a) Rules of disconnection.

b) Retrosynthesis of propranolol.

c) Fischer indole synthesis.

d) Furan synthesis.

e) Wagner - Meerwein rearrangement.

Total No. of Questions : 6]

SEAT No. :

P1275

[Total No. of Pages : 2

[4749] - 25

S.Y. B.Pharmacy

2.5 : PHARMACEUTICAL ANALYSIS - I

(2008 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 books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

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

Give theory of Redox titration. Discuss various indicators used in redox titration. Add a note on Permanganate titration.

OR

Explain in detail about instrumentation and applications of Polarimetry.

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

a) Discuss in brief about solvents and indicators used in nonaqueous titration.

b) How will you prepare and standardize 0.1 N Iodine solution?

c) Note on : Assay of Boric acid.

d) Give applications of high frequency titrations.

e) How 0.1 N H_2SO_4 is prepared and standardized.

f) What are Primary standard substances. Enlist ideal properties of Primary standard substances.

g) Describe various types of conductivity cells.

P.T.O.

Q3) **Solve any three of the following:** **[15]**

a) Applications of conductometry.

b) Note on : Ceriometric titration.

c) Sodium Nitrite titration.

d) Theories of acid base indicators.

e) Note on : Assay of H_2O_2.

SECTION - II

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

a) Classify errors in analysis. Suggest methods to minimize them.

b) Write in details the Kjeldahl's method.

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

a) Discuss saturated Calomel Electrode.

b) Discuss application of 'Q' test.

c) How will you calibrate a pH meter?

d) State and explain various types of EDTA titrations.

e) Explain the mechanism of Metalochrome indicators.

f) What are types of washing solvents used in gravimetry?

g) Explain the terms mean, mode and standard deviation.

Q6) Write short notes on **any three**: **[15]**

a) Oxygen flask combustion technique.

b) Mohr's method.

c) Student's t-test.

d) Standard Hydrogen electrode.

e) Methods of endpoint detection in Potentiometry.

Total No. of Questions : 6]

SEAT No. :

P1276

[Total No. of Pages : 2

[4749] - 26

S.Y. B.Pharmacy

PHARMACOGNOSY - I

(2008 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 books.***
3) ***Figures to the right indicate full marks.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Explain various factors that affect the cultivation of crude drugs. **[10]**

OR

Explain in detail various methods of classification of crude drugs.

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

a) Explain Sexual method of propagation of crude drugs with its merits and demerits.

b) Explain the different identification tests for Agar and Starch.

c) Write a brief account on various shapes of barks.

d) Differentiate between Roots and Rhizomes.

e) Add a note on Linnaeus system of classification of drugs.

f) Differentiate between Organized and Unorganized drugs.

g) Add a exhaustive note on Stomata and its types.

P.T.O.

Q3) Write a short notes on **(Any Three):** **[15]**

a) Cotton as a natural fibre.

b) Ash value and its types.

c) Anatomy of Leaf.

d) Methods for determining moisture content.

SECTION - II

Q4) Describe in detail biological source, method of preparation of wood cellulose and their uses. **[10]**

OR

Describe in detail biological source, method of preparation and characterization and uses of Wheat starch.

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

a) Explain primary and secondary metabolites with suitable examples.

b) Define Adulteration and Substitution.

c) Explain the importance of Extractive value.

d) Give biological source, chemical composition and uses of Agar.

e) Define Stomatal index and give its significance.

f) Add a brief note on types of vascular bundles.

g) Give biological source, chemical composition and uses of Tragacanth.

Q6) Write a short note on **(Any Three):** **[15]**

a) Probiotics and Prebiotics.

b) Wool and Jute.

c) Organoleptic evaluation of crude drugs.

d) Harmful adulterants.

Total No. of Questions : 6]

SEAT No. :

P1277

[Total No. of Pages : 2

[4749] - 27

Second Year B. Pharmacy

2.7 : PHARMACOLOGY - I (Including Pathophysiology)

(2008 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 books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define & classify Receptor. Describe in detail G - Protein coupled receptor. **[10]**

OR

Define drug absorption. Enlist the factors affecting absorption. Explain any five of them.

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

a) Define Pharmacology. Discuss the scope of Pharmacology.

b) Define anticoagulant, antihyper lipidemic and thrombolytics.

c) Define non-viral vectors. Enlist the various non-viral vectors used for gene therapy.

d) Explain the term agonist with suitable examples.

e) Enlist the processes of drug elimination.

f) Define & classify antihyper lipidemic drugs.

g) Write the merits and demerits of intravenous route of administration.

P.T.O.

Q3) Write note on following (any three): **[15]**

a) Blood brain barrier.

b) Ectopic synthesis of therapeutic proteins.

c) Drug treatment in pediatric patients.

d) Adverse drug reaction.

e) Drug toxicity.

SECTION - II

Q4) Discuss etiology & pathophysiology of chronic renal failure. **[10]**

OR

Define ulcers. Explain etiology & pathogenesis along with complications of chronic peptic ulcers.

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

a) Write the etiology of asthma.

b) Discuss the etiology and clinical features of malaria.

c) Define diabetes and classify it.

d) Define and classify epilepsy.

e) Discuss in short pathophysiology of amoebic dysentry.

f) Explain pathophysiology of pneumonia.

g) Explain pathophysiology of Alzeimers disease.

Q6) Write note on following (any three): **[15]**

a) Pathophysiology of Cancer.

b) Cardiac shock.

c) Tuberculosis.

d) Pain.

e) Hypersensitivity.

Total No. of Questions : 6] **SEAT No. :**

P1695 **[Total No. of Pages : 2**

[4749] - 301
S.Y. B.Pharmacy (Semester - III)
2.3.1 : PHYSICAL PHARMACEUTICS - I
(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) ***Figures to the right indicate full marks.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Define polymorphism. What are different shapes of polymorphs? Add a note on pharmaceutical applications of polymorphism. **[10]**

OR

Define aerosols. Explain the principle involved in aerosols. Add a note on two phase system of aerosols.

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

a) Explain Claucle's process in liquefaction of gases.

b) What is Gibb's phase? Give it's application in pharmacy.

c) Explain deviation from gas theory.

d) Describe one conponent system with suitable example.

e) What is crystallization? What crystal parameters are generally applicable while studying crystals?

f) Explain : Critical gas constants.

g) Write a note on : three phase system of aerosols.

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

a) Linde's process

b) Glass transition temperature

c) Vander Waal equation for real gases

d) X - ray diffraction method of crystal analysis

P.T.O.

SECTION - II

Q4) Explain Nernst distribution law and discuss the factors affecting it. **[10]**

OR

State the Raoult's law of lowering of vapour pressure. Explain deviation from Raoult's law. Add a note on Ebullioscopic method.

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

a) What is solubility parameter? Give its significance.

b) Differentiate between fractional distillation & steam distillation.

c) Define the terms activity, activity coefficient & osmotic coefficient.

d) State Kohlrauschs law & its applications.

e) Write the applications of distribution phenomenon.

f) Comment on problems involving molecular weight determination w.r.t. colligative properties.

g) Explain solvent solute interation.

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

a) BCS classification.

b) First law of thermodynamics.

c) Arrhenius theory of electrolytes.

d) Lowering of vapour pressure.

Total No. of Questions : 6] SEAT No. :

P1696 [Total No. of Pages : 2

[4749] - 302

S.Y.B.Pharmacy (Semester - III)

PHARMACEUTICAL MICROBIOLOGY & IMMUNOLOGY

(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) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What are viruses? How they are different from typical living cells? How does the multiplication of human viruses take place? How are human viruses cultivated? **[10]**

OR

Write the different techniques used for preservation of bacterial culture & describe in detail the growth curve in bacteria.

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

a) Explain "whittaker's five kingdom concept"

b) Draw the structure of bacteria.

c) Write medical importance if "penicillium"

d) Comment "nutrient agar is the common medium in the laboratory".

e) How will you detect presence of salmonella in nonsterile pharmaceutical preparations?

f) Explain any one method to determine the viable microbial count from pharmaceutical preparation.

g) Write a function of pili, flagella & capsule.

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

a) Historical development of microbiology.

b) Types of culture media.

c) Prebiotics & Probiotics.

d) MLT (microbial limit test)

P.T.O.

SECTION - II

Q4) Define antigen & antibody. Explain in detail different antigen antibody reactions & give their significance. **[10]**

OR

Explain in detail following points

a) Microbial virulence
b) Exotoxin & Endotoxin
c) Mecharism of HMI & CMI

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

a) Comment on "moist neat sterilization is more superior than dry heat"

b) Write ideal properties of disinfectants.

c) Differentiate between active & passive immunity.

d) Differentiate between live (attenuated) and killed vaccine.

e) Explain principle of antigen antibody reaction invitro.

f) Draw basic structure of immunoglobulia.

g) Why active immunization therapy is not recommened to immunodeficient person.

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

a) Methods of sterilization.
b) RW test.
c) Chemical classification of disinfectant.
d) RIA (Radio Immuno Assay).

Total No. of Questions : 6] SEAT No. :

P1697 [Total No. of Pages : 2

[4749] - 303
S.Y. B.Pharmacy (Semester - III)
PHARMACEUTICAL BIOCHEMISTRY
(2013 Pattern) (Theory)

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

Instructions to the candidates:

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

SECTION - I

Q1) Attempt any one of the following :

a) Define enzyme inhibitor and explain reversible and irreversible inhibition of enzyme. **[10]**

b) Define and classify lipids with suitable examples. Give their functions in detail. **[10]**

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

a) Write a note on golgi apparatus.

b) Discuss general properties of protein.

c) Explain functions and biological role of starch.

d) Write a note on co-enzymes & co-factors.

e) Explain secondary structure of DNA.

f) Draw neat labelled diagram of Eukaryotic cell.

g) Write a note on end group analysis in short.

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

a) Colour reactions of amino acids.

b) Factors affecting enzymatic activity.

c) Describe cell organelles with their roles.

d) Write a note on nucleic acids.

P.T.O.

SECTION - II

Q4) Attempt any one of the following :

a) Define lipids & explain in details Beta oxidation of fatty acids. **[10]**

b) Define & classify vitamins explain indetails biochemical functions of vit A & vit. B_2. **[10]**

Q5) Write a short note on any five of the following : **[15]**

a) Vit. B6

b) Folic Acid

c) Oxidative phosphorylation

d) Transcription

e) Define nucleic acid & it's biochemical function

f) Oxidative deamination

g) Ketone bodies

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

a) Biosynthesis of pyrimidines

b) Write in detail about structure & biochemical functions of Vit.C.

c) TCA cycle

d) Metabolism of triglycerides

Total No. of Questions : 6] SEAT No. :

P1698 [Total No. of Pages : 3

[4749] - 304

S.Y.B.Pharmacy (Semester - III)

PHARMACEUTICAL ORGANIC CHEMISTRY - III

(2013 Pattern)

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 indicate full marks.***

SECTION - I

Q1) Define amino acids. Classify it in details and give method of synthesis & reaction of amino acids. **[10]**

OR

Define racemic modification. Enlist the different methods used for resolution of racemic mixture. And explain in details each method.

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

a) Give all possible isomers of 2,3,-dichloro - butane.

b) Define amino acid and add a note on peptide bond.

c) Add a note on Gabriel pthalamide synthesis.

d) Define conformational isomerism and add a note on newmann projection formula.

e) Why chair conformation of cyclohexane is more stable than boat conformation explain.

f) Draw the structure of Methionine. Cysteine and Tryptophan.

g) Define configuration, conformation. Racemic mixture. Give example of each.

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

a) Conformations of cyclohexane.

b) Methods of synthesis of amino acids.

c) Conformational isomerism of mono alkyl cyclohexanes.

P.T.O.

d) Draw the fischer projection of following :

i) Meso 2,3- dibromobutane

ii) 2 - Chlorobutane

iii) 2R, 3S-2- Chlorobutanol

iv) Meso -2,3 tartaric acid

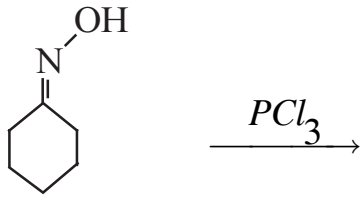
v) D-Glyceraldehyde

SECTION - II

Q4) Define molecular rearrangement reactions. Add a note on sigmatropic rearrangements with two examples. **[10]**

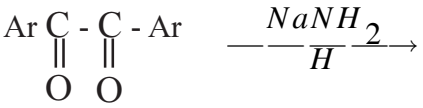
OR

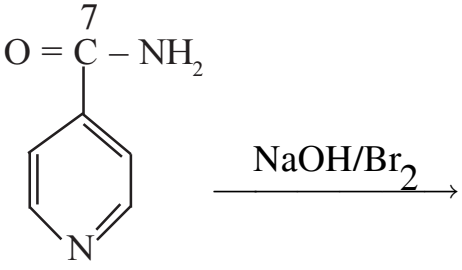
Predict the product

a) 

b) 

c) 

d) 

e) 

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

a) Give mechanism involved in Schmidt rearrangement.

b) How will you convert Pthalamide into anthranilic acid?

c) Give synthesis and reactions of Phenanthrene.

d) Explain Haworth synthesis of anthracene in detail.

e) Give brief account on Wagner-Merewein rearrangement.

f) How Curtis rearrangement help to synthesise azide? Explain with suitable example.

g) Give the ring expansion reactions of Favoroskii rearrangement.

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

a) Lossen rearrangement.

b) Hoffmann rearrangement

c) Pinacol-pinacolone rearrangement.

d) Cope rearrangement.

Total No. of Questions : 6] **SEAT No. :**

P1699 **[Total No. of Pages : 2**

[4749] - 305
S.Y.B.Pharmacy (Semester - III)
PHARMACOLOGY - I
(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) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail process of drug absorption and factors affecting drug absorption. **[10]**

OR

Explain various sources and active ingredients of drug

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

a) Give advantages and disadvantages of parenteral route.

b) Write down process of drug transportation across cell membrane.

c) Explain clinical significance of half life of drug.

d) Write down factors affecting drug metabolism.

e) Explain first pass metabolism.

f) Explain how tissue storage affect drug distribution.

g) Write down factors affecting drug excretion.

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

a) Explain in detail bioavailability & bioequivalence.

b) Define drug distribution. Describe role of plasma proteins in drug distribution.

c) Explain in detail phases of drug metabolism.

d) Write in detail process of development of new drug.

P.T.O.

SECTION - II

Q4) Explain synthesis, storage, release, metabolism and pharmacological actions of serotonin. **[10]**

OR

Discuss in detail factors modifying drug action.

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

a) Define & classify drug interactions with examples.

b) Classify receptors with examples.

c) What do you mean by dose response curve? Give its importance.

d) Explain pharmacological actions of histamine.

e) Explain molecular structure & signal transduction mechanism of ion channel linked receptor.

f) What is mean by drug synergism & antagonism? Justify with examples.

g) Define drug toxicity & give its types.

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

a) H_1 - receptor antagonists.

b) Individualization of drug therapy.

c) Drug therapy in pregnancy.

d) Reporting adverse drug reactions.

Total No. of Questions : 6] **SEAT No. :**

P1700 **[Total No. of Pages : 2**

[4749] - 306
S.Y.B.Pharm. (Semester - III)
PHARMACOGNOSY AND PHYTOCHEMISTRY - I (Theory)
(2013 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) Classify tannins and describe the properties, chemical tests and general method of extraction of tannins. **[10]**

OR

Give an account on biological source, extraction, properties and uses of starch with an example.

Q2) Answer ANY FIVE questions. **[15]**

a) Differentiate between primary and secondary metabolites with example.

b) Significance of swelling index.

c) Classify carbohydrates with example.

d) Write a note on shark liver oil and cod liver oil.

e) Write the biological source, properties and uses of papain.

f) Explain method of preparation of cotton.

g) Define glycosides and enlist their properties.

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

a) Method for determination of water soluble ash and acid insoluble ash.

b) Comment on pharmacognostic account of kalmegh.

c) Pharmacognostic account of Amla.

d) Process for determination of fat / fixed oil.

P.T.O.

SECTION - II

Q4) Explain process of extraction of wool fat and Bees wax in details. Comment on their industrial applications. **[10]**

OR

Explain process for manufacturing cotton, wool, jute and silk. Differentiate between animal and vegetable fibers.

Q5) Answer ANY FIVE questions. **[15]**

a) Describe various applications of secondary metabolites.

b) Importance of extractive value.

c) Explain process for extraction of okra mucilage.

d) Explain isolation of carotenoids.

e) Explain process for separation of streptokinase.

f) Explain method of preparation of wool.

g) Comment on occurrence and nomenclature of glycosides.

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

a) Explain process for extraction of agar & pectin.

b) Write a note on Neem oil.

c) Write a note on Kokum butter and cocoa butter.

d) Write pharmacognostic account of gentian

Total No. of Questions : 6]

SEAT No. :

P1278

[Total No. of Pages : 2

[4749] - 31

T.Y. B.Pharmacy

PHARMACEUTICS - II

(2008 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 books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss various defects that might occur in tablets during manufacture discussing its causes and remedies in detail. **[10]**

OR

Describe compression cycle in tableting with diagram.

Q2) Attempt any five: **[5 x 3 = 15]**

a) Describe interactions between plastic container and liquid formulations.

b) Give composition of film coating formula.

c) Describe tests for evaluation of flow properties of granules.

d) Enlist type of documentation in pharmaceutical manufacturing.

e) Give classification of tablets.

f) Explain the process of gelatin manufacturing.

g) Describe evaluation test of gelatin for capsule shell.

P.T.O.

Q3) Attempt any three: **[3 x 5 = 15]**

a) Describe uniformity of weight test for tablets. What are the reasons for weight variation?

b) Explain events involved in the formation of tablet during compaction process.

c) Describe formulation of soft gelatin capsules.

d) Explain filling principles in manufacture of hard gelatin capsules.

e) Give an account of various tablet coating pans.

SECTION - II

Q4) Discuss formulation development, manufacturing and evaluation of Lipsticks. **[10]**

OR

Explain instabilities of emulsion, their reasons and possible remedies to make emulsion stable.

Q5) Solve any five: **[5 x 3 = 15]**

a) Explain brushless shaving creams.

b) Explain the phenomenon of sedimentation in suspension.

c) Discuss formulation aspects of vanishing cream.

d) What is mechanism of sunscreen preparation? Write about sunscreen index.

e) What are objectives of eye mascara? Give an account of cake mascara.

f) What are antiperspirants? Write about liquid antiperspirants.

g) Discuss any two methods of preparation of ointment.

Q6) Write short notes on any three: **[3 x 5 = 15]**

a) Paste.

b) Gelling agents.

c) Homogenizer.

d) Antioxidants as cosmeceuticals.

e) Hair tonics.

Total No. of Questions : 6]

SEAT No. :

P1279

[Total No. of Pages : 3

[4749] - 32

Third Year B. Pharmacy

PHARMACEUTICAL BIOTECHNOLOGY

(2008 Pattern)

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

Instructions to the candidates:

1) ***Answers to the two Sections should be written in separate books.***
2) ***Neat diagram must be drawn wherever necessary.***
3) ***All questions are compulsory.***

SECTION - I

Q1) Define Biotechnology, write application of biotechnology to pharmaceutical Industry. **[10]**

OR

Draw steps involved in recombinant DNA technology, Give an account vectors.

Q2) Solve any five (3 marks each) **[15]**

a) Write role of B galactocidase, alkaline phosphatase & S_1 nuclease.

b) Write in short about labda bactero phase.

c) What is shuffle vector, write its importance.

d) Write benefits of cosmid vector.

e) Methodology & application of Hairy root culture.

f) What is role of reverse transcriptase.

g) What is role of restriction enzyme & DNA ligase.

P.T.O.

Q3) Solve any three : (5 marks each) **]15]**

a) Transgenic animal & its application.

b) Protoplast culture.

c) Explain Ti plasmid.

d) Explain southern blotting.

e) Write short note on DNA fingure - printing.

f) Write principle, components & application of PCR.

SECTION - II

Q4) Explain production & uses of somatotropin. **[10]**

OR

Enlist types of fermenter. Explain in detailed its accessory components & working.

Q5) Attempt any five (3 Marks each) **[15]**

a) Artificial Insemination.

b) Immunofluorescence.

c) Purification toxicity studies in biotechnological products.

d) Application of interferon.

e) Recombinant vaccines.

f) Different methods of sterilization.

g) Surrogate mother hood.

Q6) Write note on any three (5 marks each) **[15]**

a) Immunoassay by ELIZA.

b) Production and uses of human Insulin.

c) Techniques in Invitro fertilization.

d) Applion & production of monoclonal antibodies.

e) Storage & processing of blood products.

Total No. of Questions : 6]

SEAT No. :

P1280

[Total No. of Pages : 3

[4749] - 33

T. Y. B. Pharmacy

MEDICINAL CHEMISTRY - I

(2008 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 sheets.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Write the MOA of Anti - anginal drugs and Classification with one example of each class. **[10]**

OR

Write in detail as a drug designer, designing of drugs affecting adrenergic nervous system. Explain the drugs affecting biosynthesis of norepenephrine.

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

a) Write in brief about protein binding.

b) Write synthesis of Propranolol

c) Discuss the SAR, MOA of Potassium sparing diuretics.

d) Discuss SAR and MOA of Acetylcholine inhibitors.

e) Discuss optical isomers and biological activity.

f) Enlist the different physiochemical parameters and explained any one.

g) Enlist the conjugation reactions and discuss any one

P.T.O.

Q3) Write short notes on ANY THREE of the following. **]15]**

a) Cardio tonic drugs.

b) Anti hypertensive agents

c) Biosynthesis release and metabolism of acetylcholine

d) Nicotinic receptors

e) Bio synthesis of epinephrine

SECTION - II

Q4) Classify neuroleptics and discuss SAR of Benzodiazepines. Write synthesis of amitryptilene. **[10]**

OR

Classify CNS depressants with structure of one drug from each class. Discuss SAR of barbiturates. Write synthesis of Thiopental sodium.

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

a) Discuss anti-parkinson agents.

b) Write synthesis of Rosiglitazone.

c) Write synthesis of Prazocin

d) Discuss SAR of Tricyclic antidepressants.

e) Classify CNS Stimulants with structure of one drug from each class.

f) Discuss different agents for organ function tests.

g) Write note on oral antidiabetic agents.

Q6) Write short notes on ANY THREE of the following. **[15]**

a) Prodrugs and soft drugs.

b) Diagnostic agents.

c) Anti alzheimers drugs.

d) Sedatives and hypnotics.

e) Analeptics and respiratory stimulants.

Total No. of Questions : 6]

SEAT No. :

P1281

[Total No. of Pages : 3

[4749] - 34

T. Y. B. Pharmacy

3.4 : PHARMACEUTICAL ANALYSIS - II

(2008 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) *Neat diagram must be drawn wherever necessary.*

SECTION - I

Q1) What is half wave potential? Explain it with suitable example. Give applications of polarography **[10]**

OR

Explain theory and instrumentation of atomic absorption spectroscopy.

Q2) Attempt any five questions from followings. **[15]**

a) Explain principle behind Flame photometry.

b) Explain development techniques used in paper chromatography:

c) Give Brief history of chromatography.

d) Explain applications of refracometry.

e) Draw neat and labeled diagram of DME

f) What is Quenching?

g) Give advantages and disadvantages of instrumental methods of analysis.

P.T.O.

Q3) Write note on Any Three **]15]**

a) Applications of Atomic Absorption Spectroscopy

b) Instrumentation of Fluorimetry

c) HPTLC

d) Principle of Electrophoresis

SECTION - II

Q4) What is amperometric analysis. Explain procedure, advantages and disadvantages, applications of it. **[10]**

OR

What are different methods of thermal analysis. Explain factors affecting thermogravimetric analysis

Q5) Attempt any five questions from followings **[15]**

a) Explain derivative spectroscopy

b) Explain monochromators used in UV —Visible spectroscopy

c) Give principal behind nephelometry.

d) Give principal behind coulometric analysis.

e) Give applications of UV-visible spectroscopy

f) Explain difference between single beam and double beam instrument with diagram.

g) Explain:

i) Chromophore

ii) Auxochrome

iii) Bathochromic shift

iv) Hypsochromic shift

Q6) Write note on Any Three **[15]**

a) Applications of Nephalometry and turbidometry

b) DTA

c) Spectrophotometric titrations

d) Light sources used in UV Visible Spectroscopy

Total No. of Questions : 6] **SEAT No. :**

P1282 **[Total No. of Pages : 2**

[4749] - 35
Third Year B. Pharmacy
PHARMACOLOGY - II
(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) Write the therapeutic classification of sympathomimetic drugs. Discuss mechanism of action, pharmacological actions, therapeutic uses, and adverse drug reactions of cardiac stimulants. **[10]**

OR

Classify antiepileptic drugs. Discuss mechanism of action, pharmacological actions, therapeutic uses, and adverse drug reactions of phenytoin.

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

a) Write therapeutic uses and adverse effects of imipramine.
b) What do you mean by redistribution of barbiturates?
c) Write the adverse drug reactions of atropine.
d) Write the therapeutic uses and adverse effects of morphine.
e) Explain why levodopa is combined with carbidopa.
f) Explain the mechanisms of action of barbiturates.
g) Classify antipsychotics.

Q3) Write short note on (any 3) : **[15]**

a) Organophosphate poisoning.
b) Neuromuscular blocking agents.
c) Drug dependence.
d) Nootropics.
e) α - blockers.

P.T.O.

SECTION - II

Q4) Describe the biosynthesis, storage and release of insulin. Add a note on insulin preparations. **[10]**

OR

Explain the drug therapy in peptic ulcer.

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

a) Classify antidiarrhoeal agents.

b) What are the adverse effects of corticosteroids.

c) Classify local anaesthetics as per their clinical uses.

d) Write the drugs used in treatment of rheumatoid arthritis.

e) Write the estrogen preparations.

f) Classify antiemetic drugs.

g) Write therapeutic uses of progestins.

Q6) Write short note on (any 3) : **[15]**

a) Tocolytics.

b) Oral contraceptives.

c) Drug therapy of asthma.

d) Aromatase inhibitors.

e) Antithyroid drugs.

Total No. of Questions : 6] **SEAT No. :**

P1283 **[Total No. of Pages : 2**

[4749] - 36
Third Year B. Pharmacy
3.6 : PHARMACOGNOSY - II
(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

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

List out methods to study biogenetic pathways. Explain in detail Tracer technique with its significance.

OR

Write in detail about various methods of extraction of essential oils.

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

a) Draw neat labelled diagram of T.S. of Fennel.
b) Write various methods for administration of precursors.
c) Write Borntrager's and modified Borntrager's test with its significance.
d) Write method of preparation of cod liver and shark liver oil.
e) Differentiate between caraway and coriander.
f) Mention hydrolysis test for cyanogenetic glycosides.
g) Discuss method for extraction of eucalyptus oil.

Q3) Write notes on (any three) **[15]**

a) Steroidal saponin.
b) Indian and Alexandrian senna.
c) Anthraquinone glycosides.
d) Bees wax.
e) Biotransformation.

P.T.O.

SECTION - II

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

Define and classify tannins? Give pharmacognosy of contents of Triphala churna.

OR

Define resins write detail pharmacognostic account of Turmeric.

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

a) Write the principle of SFE.

b) Draw a neat labelled diagram of T.S. of Eucaliptus leaf.

c) Give method of preparation and uses of Asafoetida.

d) Write tests for identification of Tannins.

e) Discuss cultivation and preparation of cannabis.

f) Describe method of collection of dalchini.

g) Write Killer kiliani test.

Q6) Write notes on (any three) **[15]**

a) Droplet counter current extraction.

b) Applications of Tissue culture technique.

c) Standardisation of herbal extracts.

d) Black catechu and pale catechu.

e) Natural pesticides.

Total No. of Questions : 6] SEAT No. :

P1284 [Total No. of Pages : 2

[4749] - 37
T.Y.B.Pharmacy
3.7 : PHARMACEUTICAL MANAGEMENT & MARKETING (PBM)
(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) Give detail account on historical. Perspectives of pharmaceutical industry, current status and growth scenario. **[10]**

OR

What are objectives? Explain advantages and limitations of objectives. Give detail account on MBO.

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

a) Material Management

b) Management thoughts.

c) Functions of management

d) Sales forecasting.

e) Balance Sheet.

f) Decision making.

g) Line and staff management organization.

Q3) Write short notes (any three) **[15]**

a) Network Analysis.

b) Planning steps and process.

c) Inventory control and EOQ.

d) QA & QC.

P.T.O.

SECTION - II

Q4) What is leadership? Explain its styles and management grid. **[10]**

OR

What is pharmaceutical expant? Explain about various registration authoritier and regulatory agencies.

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

a) Factor affecting price.

b) Advertising.

c) Channels of distribution.

d) Marketing Research.

e) Product life cycle.

f) Sales promotion.

g) Maslow's theory of motivation.

Q6) Write short notes (any three) **[15]**

a) Communication process.

b) Performance appraisal.

c) Pharmaceutical branding and packaging.

d) Theory X and Y

e) Ethics of Sales.

Total No. of Questions : 6] SEAT No. :

P1702 [Total No. of Pages : 2

[4749] - 402
S. Y. B. Pharmacy (Semester - IV)
Pathophysiology and Clinical Biochemistry
(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 answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Define hypertension. Explain in detail pathophysiology of hypertension. **[10]**

OR

Define COPD and explain in detail pathophysiology of COPD.

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

a) Define and classify Anemia

b) Discuss the etiology of ulcer's

c) Define leukemia and cirrhosis

d) Enlist the etiology of coronary artery disease

e) Write the complication of gall stone

f) Define and enlist the types of hepatitis

g) Write the pathophysiology of diarrhoea.

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

a) Pneumonia

b) Inflammatory bowl disorder

c) Varicose vein

d) Pancreatitis

P.T.O.

SECTION - II

Q4) Discuss in detail pathophysiology of epilepsy. **[10]**

OR

Discuss in detail renal failure.

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

a) Define and enlist the types of depression.

b) Write etiology of urinary calculi.

c) Write epidemiology of malaria.

d) Write the caustive agent of syphilis and gonorrhea.

e) Enlist the clinical manifestions of diabetes mellitus.

f) Explain in brief maliganancy.

g) define

i) Hyperthyroidism

ii) Dysmenorrhoea

iii) Infertility

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

a) Parkinsons disease.

b) Urinary track infections.

c) AIDS.

d) Myasthenia gravis.

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Total No. of Questions : 6]

SEAT No. :

P1703

[Total No. of Pages : 2

[4749]-403

Second Year B. Pharmacy (Semester - IV)

PHARMACEUTICAL ORGANIC CHEMISTRY - IV

(2013 Pattern)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers of the two sections should be written in separate books.***
3) ***Draw neat diagram wherever necessary.***
4) ***Digits written at right side indicates marks of that question.***

SECTION - I

Q1) What is Paal-Knorr synthesis and Skraup quinoline synthesis? Write reaction and mechanism of both. **[8]**

OR

Define heterocyclic chemistry. Write any three synthetic methods and any three chemical reactions of pyridine or indole.

Q2) **Attempt the following (any 5)** : **[15]**

a) Why pyrrole undergo ESR only at 2 or 5-position only? Explain with reaction and resonating structures.

b) Give retrosynthesis of ibuprofen.

c) Write electrophilic substitution reactions of pyrrole.

d) Draw structure of imidazole, 1,3-oxazole and isoquinoline with numbering.

e) Mention one name and use of the drug containing indole, pyridine and furan.

f) Why pyridine is stronger base that pyrrole? Explain with reaction and resonating structures.

g) Define retrosynthesis. Write rules of disconnection.

P.T.O.

Q3) **Attempt the following (any 3)** : **[12]**

a) Write short note on Hantzsch pyridine synthesis.

b) Write any four synthetic methods of quinoline.

c) Why Pyridine undergo electrophilic substitution at β-position only? Explain with reaction and resonating structures.

d) Write retrosynthesis of ciprofloxacin.

e) Write any four chemical reactions of imidazole.

SECTION - II

Q4) Establish open chain and cyclic structure of D(-) fructose : **[8]**

OR

Describe solid supported synthesis and split and mix synthesis in drug discovery.

Q5) **Attempt the following (any 5)** : **[15]**

a) Define nanochemistry. Describe in short any two Pharmaceutical applications of nanochemistry.

b) Define and classify carbohydrates with examples.

c) Write a short note on mutarotation.

d) Write any three differentiating points between conventional synthesis and microwave assisted synthesis.

e) What is Combinatorial Chemistry. Explain deconvolution method.

f) Give any three chemical reactions of glucose.

g) Mention any six importance of carbohydrates.

Q6) **Attempt the following (any 3)** : **[12]**

a) Constitution of glucose.

b) Write any two microwave assisted synthetic reactions.

c) Describe Kiliani-Fischer synthesis and Ruff degradation.

d) Write any four differentiating points between glucose and fructose.

e) Chemical reactions of D-fructose.

Total No. of Questions : 6]

SEAT No. :

P1704

[Total No. of Pages : 2

[4749]-404

Second Year B. Pharmacy (Semester - IV)

PHARMACEUTICAL ANALYSIS - 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 answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail the principle involved in polarographic technique and explain its instrumentation. **[10]**

OR

Explain Instrumentation, principle and applications of high frequency titration.

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

a) Define and classify the electroanalytical methods.

b) Explain the terms molecular and equivalent conductance.

c) Discuss the factors affecting limiting current.

d) Discuss on measurement of potential.

e) Explain the construction and working of Calomel electrode.

f) Explain applications of conductometry.

g) Explain linear scan polarography.

P.T.O.

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

a) Potentiometric titration.

b) Normal Hydrogen Electrode.

c) Applications of polarography.

d) Biamperometric titrations.

SECTION - II

Q4) Write about principle and theory of coulometric techniques. Discuss in detail end point determination of coulometric analysis. **[10]**

OR

Answer the following :

a) Determination of water by Karl Fisher method. **[5]**

b) Spectropolarimeter. **[5]**

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

a) Explain the term Circular dichroism.

b) Add a note on Coulometric cell.

c) Explain the types of plane polarize light.

d) Discuss about Optical activity.

e) Write the applications of coulometric analysis.

f) Explain Specific and Molar refraction.

g) Give an account on Cotton effect.

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

a) Kjeldahl's method.

b) ORD and CD curve

c) Silver coulometer.

d) Construction and working of Abbe refractometer.

Total No. of Questions : 6]

SEAT No. :

P1705

[Total No. of Pages : 2

[4749]-405

S.Y. B. Pharm.

PHARMACOGNOSY & PHYTOCHEMISTRY - II

(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 labelled diagram wherever necessary.***

SECTION - I

Q1) What are pseudoalkaloids & protoalkaloids? Describe pharmacognosy of ergot. **[10]**

OR

Define & classify Resins. Describe pharmacognosy of Canabis.

Q2) Solve any five of the following: **[5 × 3 = 15]**

a) Describe cultivation & collection of opium.

b) Write uses of Guggul.

c) Draw a diagram of T. S. of Vinca leaf.

d) Write Biological Source, Chemical Constituents & uses of Kalmi Dalchini.

e) Write chemical constituents of Ginseng along with their structure.

f) Describe substituents of Snake-root.

P.T.O.

Q3) Write note on any Two: **[2 × 5 = 10]**

a) Purin alkaloids.

b) Extraction of essential oils.

c) Taxus.

d) Difference in Podophylum Hexandrum & Podophylum peltatum.

SECTION - II

Q4) Describe chemistry of alkaloids. Write Biogenesis for Isoquinoline alkaloids. **[10]**

OR

Define Terpenoids. Write detail pharmacognosy of Lavender.

Q5) Solve **any five** of the following : **[5 × 3 = 15]**

a) Write qualitative chemical tests for alkaloids.

b) Write classification of Terpenoids.

c) Describe Isoprene rule.

d) Write Biological source, Chemical constituents & uses of glyco-alcoloids.

e) Describe cultivation collection of opium.

f) Draw T. S. of Withania root.

g) Write chemical test for Purine alkaloids.

Q6) Write notes on any two : **[2 × 5 = 10]**

a) Difference between Cinchona bark & Kurchi bark.

b) Coriander.

c) Sandalwood.

d) Deadly night shade.

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Total No. of Questions : 6]

SEAT No. :

P1706

[Total No. of Pages : 2

[4749]-406

S.Y. B. Pharmacy

PHARMACEUTICAL ENGINEERING

(2013 Pattern) (Semester - IV) (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 the theory of drying and discuss the construction and working of fluidised bed dryer. **[10]**

OR

What are the various modes of heat transfer? Discuss shell and tube heat exchanger in detail.

Q2) Solve any 5: **[15]**

a) Explain molecular diffusion in gases.

b) Discuss capacity and economy of Multiple Effect Evaporator.

c) Discuss advantages and working of agitated tank crystallizer.

d) Explain working of orifice meter.

e) What is HETP?

f) Discuss factors affecting rate of evaporation.

g) Explain working of inclined monometer.

Q3) Write notes on any 2: **[10]**

a) Spray dryer.

b) Bernoulli's theorem.

c) Variable area flow meter.

d) Factors affecting corrosion.

P.T.O.

SECTION - II

Q4) Explain Meir's theory of supersaturation along with its limitations and discuss theories of crystal growth. **[10]**

OR

What is rectification? Explain various types & working of fractionating columns.

Q5) Solve any 5 : **[15]**

a) Explain working of drum dryer.

b) Explain Kirchoff's law.

c) How does centrifugal entrainment separator work?

d) Discuss secondary nucleation in crystallization process.

e) Explain Reynold's number.

f) Explain packing in distillation column.

g) Give working of inverted bucket steam trap.

Q6) Write notes on any 2 : **[10]**

a) Swenson Walker Crystallizer.

b) Freeze Dryer.

c) Molecular distillation.

d) Climbing film evaporators.

Total No. of Questions : 8] **SEAT No. :**

P1285 **[Total No. of Pages : 2**

[4749] - 41
Fourth Year B.Pharmacy
PHARMACEUTICS - III
(2008 Pattern)

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

Instructions to the candidates:

1) ***Question Nos. 1 and 5 are compulsory. Out of the remaining attempt 2 questions from Section - I and 2 questions from Section - II.***
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) What are parenterals? Classify them with suitable examples. Describe in detail quality control tests for parenterals. **[10]**

Q2) a) Define validation. What are its different types? **[5]**

b) What are different uses of LVP? Explain TPN. **[5]**

c) Write a note on parenteral suspensions. **[5]**

Q3) a) Explain Glass as packaging material for parenterals. **[5]**

b) What are pyrogens? Why it is difficult to remove pyrogens? How they can be eliminated? **[5]**

c) Describe sterility test for ointments. **[5]**

Q4) Write notes on: **[15]**

a) Isotonicity & Adjustment of Isotonicity.

b) Validation master plan.

c) Antioxidants used in parenterals.

P.T.O.

SECTION - II

Q5) Write pharmaceutical applications of microencapsulation. Describe phase separation coacervation technique of microencapsulation with example. **[10]**

Q6) a) Describe various propellants used in aerosols. **[5]**

b) Discuss basic concept & benefits of optimization. Add a note on 2 Level factorial design. **[5]**

c) Give merits, demerits & applications of targeted drug delivery system. **[5]**

Q7) a) Discuss pre-requisites of drug candidate for controlled drug delivery. **[5]**

b) Describe air suspension technique of microencapsulation. **[5]**

c) What factors influence the deposition of inhaled aerosol particles in respiratory tract. **[5]**

Q8) Write note on: **[15]**

a) Opthalmic inserts.

b) Manufacturing of aerosol.

c) Intra uterine drug delivery system.

Total No. of Questions : 6] SEAT No. :

P1286 [Total No. of Pages : 2

[4749] - 42
Fourth Year B. Pharmacy
BIOPHARMACEUTICS AND PHARMACOKINETICS
(2008 Pattern)

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

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) Describe mechanism of drug transport by comparing passive and facilitated diffusion. **[10]**

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

a) Explain phase-I and phase-II reactions.

b) List various factors influencing renal excretion.

c) Explain various binding sites present on Human serum Albumin.

d) Explain Blood Brain Barrier.

e) Explain factors affecting tissue binding of drug.

f) Explain in short prodrugs.

g) Give objectives of bioavailability studies.

Q3) Write note on (any three) : **[15]**

a) Renal clearance.

b) pH- partition Hypothesis.

c) Plasma concentration - time profile.

d) Theories of drug dissolution.

P.T.O.

SECTION - II

Q4) Explain Biopharmaceutica classification system with its significance. **[10]**

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

a) Explain various applications of pharmacokinetic principles.

b) Define and explain: AUC; MRT.

c) Give reasons of non-linearity in pharmacokinetics.

d) Give significance of compartmental modeling.

e) Explain C_{max}, V_{max} and K_m.

f) Explain various drug dissolution mechanisms.

g) Explain Therapeutic drug monitoring.

Q6) Write short notes on any three : **[15]**

a) In vitro-In vivo correlation (IVIVC)

b) One compartmental model.

c) Method of Residuals.

d) Individualisation of dosage regimen.

Total No. of Questions : 6] SEAT No. :

P1287 [Total No. of Pages : 2

[4749] - 43
Final Year B.Pharmacy
MEDICINAL CHEMISTRY - II
(2008 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 on the separate answer books.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Classify antimalarial agents with suitable example. Write chemistry and SAR of amino quinolines. **[10]**

OR

What are Antimycobacterial agents? Discuss Chemistry SAR, MOA and adverse effects of first line Antitubercular agents.

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

a) Write chemistry and MOA of Amantadine.

b) Sketch the scheme of synthesis of ciprofloxacin.

c) Explain different target sites of bacteria.

d) Sketch the scheme of synthesis of sulfamethoxazole.

e) Explain the SAR of sulphonamides.

f) Explain chemistry of Imidazole antifungals.

g) Give role of bioisosterim in drug design.

Q3) Write short notes on (Solve any three) **[15]**

a) Q SAR

b) Quinolone antibacterial

c) Phase I metabolism reactions.

d) Protease inhibitors.

P.T.O.

SECTION - II

Q4) Discuss Chemistry, SAR mode of action adverse effects and uses of Tetra cycline class of Antibiotics. **[10]**

OR

Discuss chemistry of penicillin antibiotics. Discuss the modifications needed for acid resistant and penicillinase resistant penicillins.

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

a) Chemistry of antibiotics containing penam ring.

b) Sketch the scheme of synthesis of Diclofenac.

c) What are esmogenic agents explain nonstenoidal estrogenic agents in detail.

d) Sketch the scheme of synthesis of Omeprazole.

e) Write the mode of action and SAR of salicylates.

f) Comment on antithyroid drugs.

g) Write a note on H_2- Agonists.

Q6) Solve any three **[15]**

a) What are antihistaminic agents. Explain development of H_2 Antagonist.

b) Write short note on proton pump inhibitor.

c) Explain chemistry, SAR, MOA, adverse effect of steroidal antiinflammatory agents.

d) Write short note on :

Aminoglycoside antibiotics.

Total No. of Questions : 8] **SEAT No. :**

P1288 **[Total No. of Pages : 2**

[4749] - 44
Final Year B. Pharmacy
PHARMACEUTICAL ANALYSIS - III
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.1 and Q.5 are compulsory.***
2) ***Out of the remaining attempt any two from Section - I and Section - II.***
3) ***Draw neat labelled diagrams wherever necessary.***

SECTION - I

Q1) Answer any five (two marks each) **[10]**

a) How will you differentiate between aldehydes and amides by IR spectroscopy.

b) How will you select a solvent in NMR spectroscopy?

c) Explain molecular ion and fragment ion in MS.

d) Explain the phenomenon of fermi Resonance with suitable examples.

e) O_2, Cl_2 do not absorb IR radiation. Explain.

f) Explain Bragg's law in X-ray diffraction technique.

g) Explain Mull technique in IR spectroscopy.

Q2) a) What is chemical shift? Discuss factors affecting it. **[8]**

b) Classify IR transducers and explain any one transducer. **[7]**

Q3) a) Classify ionization sources in MS. Discuss Electron Impact ionisation source and enlist its advantages and disadvantages. **[8]**

b) Discuss the Theory of NMR. **[7]**

P.T.O.

Q4) Write short notes on (any three) **[15]**

a) Plasma sources in AES.

b) Raman spectroscopy.

c) Mchafferty rearrangement

d) X-ray transducers

e) Validation of analytical methods.

SECTION - II

Q5) a) Write the ideal characteristics of detectors in gas chromatography. Explain in Details thermal conductivity detector. **[5]**

b) Application of Gas chromatography. **[5]**

Q6) a) Explain various pumps used in HPLC. **[7]**

b) Discuss in brief on quantization technique and degassing techniques in HPLC. **[8]**

Q7) a) Write in detail theory of UPLC and Add a note on column and advantage of UPLC over HPLC. **[8]**

b) Explain the principle of capillary Zone Electrophoresis. **[7]**

Q8) Write notes on (any three) **[15]**

a) Measurement of Radioactivity.

b) WCOT and SCOT

c) Ion Exchange Chromatography.

d) Supercritical fluid extraction.

Total No. of Questions : 6]

SEAT No. :

P1289

[Total No. of Pages : 3

[4749] - 45

Final Year B. Pharmacy

PHARMACOLOGY - III

(2008 Pattern)

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

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) Classify antiarrhythmic agents. Explain in detail mode of action pharmacological actions, therapeutic uses and adverse effects of membrane stabilizers. **[10]**

OR

Classify antiviral agents. Discuss in detail reverse transcriptase inhibitors with respect to mode of action, pharmacological actions, therapeutic uses and adverse effects.

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

a) Justify therapeutic utility of isoniazide in tuberculosis.

b) Describe the mode of action of anticancer antimetabolites.

c) Comment on role of nitrates in argina pectoris.

d) Discuss the development of drug resistance to antimicrobials.

e) Explain the mode of action and adverse effects of tetracycline.

f) Describe the treatment of acute mercury poisoning.

g) Explain the mode of action of cotrimoxazole.

P.T.O.

Q3) Write notes on any three : **[15]**

a) Calcium channel blockers

b) Management of myocardial infarction

c) Sulfonamides

d) Digitalis glycosides

e) Snake venom poisoning

SECTION - II

Q4) Define Hospital Pharmacy. Discuss in brief about drug distribution system in hospital with its advantages and disadvantages. **[10]**

OR

Explain in brief about different phases of clinical trials.

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

a) Write the importance of patient medication profile.

b) Explain the advantages and applications of therapeutic drug monitoring

c) Explain with example the drug Interaction during drug excretion.

d) Discuss the types of hypersensitivity reactions.

e) Write the importance of Belmont Report.

f) Explain the process of blinded study.

g) Discuss the responsibilities of investigator in clinical trials.

Q6) Write short notes on any three : **[15]**

a) Patient compliance.

b) Hospital formulary.

c) Monitoring and reporting of adverse drug reactions.

d) Role of clinical trials in new drug development.

e) Inpatient pharmacy.

Total No. of Questions : 6]

SEAT No. :

P1290

[Total No. of Pages : 3

[4749] - 46

Final Year B. Pharmacy

PHARMACOGNOSY - III

(2008 Pattern)

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

Instructions to the candidates:

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

SECTION - I

Q1) Define Alkaloids.Describe their physical and chemical properties. Write in details their chemical classification . **[10]**

OR

What are flavonoids? Give an elaborate account of their chemistry and write a note on their characterization.

Q2) Solve any five questions for the following : **[5 × 3 = 15]**

a) Describe ring structure for tropane alkaloids.Give procedure for Vitali Morin's Test.

b) Give microchemical and chemical tests for Nux Vomica.

c) Discuss traditional uses of Brahmi.

d) Write a brief note on Gingko biloba.

e) Describe about one allied species of Rauwolfia.

f) Give pharmacological significance of Ergot alkaloids.

g) Describe microscopical diagnostic features of Kurchi bark.

P.T.O.

Q3) Write elaborate note on following (any three) : **[3 × 5 = 15]**

a) Chemical Profile of Opium

b) Plant Allergens

c) Life Cycle of Ergot

d) Antiinflammatory agents of marine sources

e) Ashwagandha

SECTION - II

Q4) Enlist various parameters recommended by WHO for evaluation of herbal drugs. Write principle & procedure of following: **[10]**

a) Bitterness value

b) Moisture content

OR

Explain the role of Chromatographic techniques in evaluation of herbal drugs.

Q5) Solve any five questions for the following : **[5 × 3 = 15]**

a) Write principle behind extraction of Eugenol.

b) Describe method of preparation of Asava and enlist its evaluation parameter.

c) Describe herbal drug interaction for Digitalis.

d) Write on evaluation of hair care herbal products.

e) Write a note on Churnas.

f) Give examples of three plant based industries.

g) Give spectroscopic details of Digoxin.

Q6) Write note on following (any three) : **[3 × 5 = 15]**

a) Preliminary phytochemical screening.

b) Structural Elucidation of Reserpine.

c) Bhamas.

d) Extraction of Hesperidin.

e) Skin care cosmetics.

Total No. of Questions : 6]

SEAT No. :

P1291

[Total No. of Pages : 3

[4749] - 47

Final Year B. Pharmacy

4.7 : PHARMACEUTICAL JURISPRUDENCE

(2008 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) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Write the constitution and composition of the Central Pharmacy Council, also state the registration procedure of pharmacist. **[10]**

OR

Write the functions of Central Drugs Laboratory (CDL), also write the qualifications and duties of Government Analyst.

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

a) Write the provisions under the Prevention of Food Adulteration Act 1954.

b) Write the importance of DPCO and formula for calculation of retail price of drug.

c) What are consumer disputes redressal agencies?

d) Enlist the advertisement prohibited by Act.

e) What are Schedule J and Y

f) Write in brief importance of Cyber Law.

g) Write in brief importance of education regulation.

P.T.O.

Q3) Write short notes (Any Three) : **]15]**

a) Qualification and Duties of Drug Inspector.

b) Good manufacturing practices for requirement of premises for pharmaceutical products.

c) Guidelines for Industrial safety and Health.

d) Prohibition, Control and Regulation under Narcotic Drugs and Psychotropic Substances Act 1985.

e) Industrial Development and Regulation Act 1951.

SECTION - II

Q4) Elaborate different forms of IPR. **[10]**

OR

Define Patent; write types of patent, criteria to obtain patent.

Q5) Attempt any five (3 marks each) : **[15]**

a) Explain benefits for obtaining patent.

b) What is term of patent?

c) What are documents required for obtaining patents?

d) What is geographical indication under IPR?

e) What is EMR?

f) What is compulsory license?

g) What is opposition to Grant of Patent, Enlist criteria?

Q6) Attempt any three (each 5 marks) : **[15]**

a) Define patent infringement? Explain its significance.

b) Discuss in detail Hatch Waxman Act.

c) Explain ANDA.

d) Define Therapeutic Goods and write role of TGA.

e) Write short note on ICH.