Total No. of Questions : 6]

SEAT No. :

P3022

[Total No. of Pages : 2

[5452]-1001
F.Y.B. Pharmacy
1.1.1. (T) - PHARMACEUTICS - I
(2015 Pattern) (Semester - I)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

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

Define drug; what are the different sources of drug? Write the rationale for development of dosage form.

OR

Write the history of pharmacy profession in india; also write a note on pharmacy code of ethics.

Q2) Attempt any Four. **[12]**

a) Write the scope of formulation development.

b) Give the classification of dosage forms.

c) Describe Homoeopathy as an alternate system of medicine.

d) Describe Unani and Siddha as an alternate system of medicine.

e) What is pharmacopoeia? Add a note on Indian Pharmacopoeia.

f) Write the scope of physical pharmacy.

Q3) Write short notes (any two) **[8]**

a) Scope of pharmaceutical engineering.

b) Career opportunities after pharmacy graduation.

c) Routes of drug administration.

d) Principle of Ayurveda.

P.T.O.

SECTION - II

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

Explain the concept of excipients, classify excipients with examples.

OR

Discuss physicochemical properties to be studied for preformution.

Q5) Attempt any four. **[12]**

a) Give an account of ENT preperations.

b) Write difference between quality control & quality assurance.

c) Discuss in brief Enema.

d) Write difference between simple syrup I.P. and simple syrup USF.

e) Write formulation and direction for simple linctus I.P.

f) Discuss preservatives used in solutions.

Q6) Attempt any two. **[8]**

a) Evaluation of solutions

b) Colours and flavours

c) Polymorphism in solids

d) GMP and cGMP.

Total No. of Questions : 6]

SEAT No. :

P3023

[Total No. of Pages : 2

[5452]-1002

First Year B. Pharm.

MODERN DISPENSING PRACTICES

(2015 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 60*

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 indicate full marks.***
4) ***Use of calculator is allowed.***

SECTION - I

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

a) Explain in detail Good compounding and dispensing practices.

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

Q2) Answer any four. **[12]**

a) Explain in brief Patient medication Record.

b) Describe in brief stability of medicine

c) What would be the dose of child of 1 and 3 years; if the adult dose is 500 mg.

d) Give the pharmacopoeial storage condition for drug product.

e) Explain in brief Drug profile.

f) In what proportion 3% and 15% should be mixed to make 8% of Cetrimide solution.

g) Describe importance of isotonicity calculations in formulations.

Q3) Write a short note on (any two.) **[8]**

a) Types of prescriptions

b) Pricing of prescription

c) Labeling of dispensed product.

d) Containers for dispensed products

P.T.O.

SECTION - II

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

a) Describe in detail Physicochemical incompatibility.

b) Describe in detail steps in patient counseling.

Q5) Answer any four. **[12]**

a) Explain in brief Phamacovigilance.

b) Explain drug information services.

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

d) Describe role of Pharmasist in HIV/AIDS.

e) Explain patient counseling in asthmatic condition.

f) Describe structure and design of retail drug store.

g) Explain methods to remove therapeutic incompatibility.

Q6) Write a short note on (any two) **[8]**

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

b) Role of pharmacist in healthcare and education.

c) Self medication.

d) Patient counseling in hypertension and diabetic patients.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3024

[Total No. of Pages : 2

[5452]-1003

First Year B. Pharmacy

PHARMACEUTICAL INORGANIC CHEMISTRY (1.1.3 T)

(2015 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

Q1) Attempt any ONE from the following. **[10]**

a) Give principle involved in limit test for Arsenic. Draw a well labeled diagram of Arsenic limit test apparatus and give its specifications. Give the role of lead acetate cotton plug in Arsenic limit test apparatus.

b) What are gastrointestinal agents? Classify them with examples. Write a detail note on saline cathartics.

Q2) Solve any FOUR from the following. **[12]**

a) Give the difference between hard water and soft water.

b) Give the solubility parameters as per I.P.

c) Enlist the electrolytes used in acid-base therapy. Give the properties and uses of any one such electrolyte.

d) Describe raw material as source of impurity.

e) Define
   i) Pharmacopoeia,
   ii) Monograph. Enlist the contents of individual monograph.

f) What are gastrointestinal protective adsorbents? Describe any one agent.

g) Give the composition and uses of ORS.

Q3) Solve any TWO from the following. **[8]**

a) Describe any four methods of removing hardness of water.

b) What are antacids? Write a note on combination of antacids.

c) Give physiological role of
   i) Sodium
   ii) Phosphate
   iii) Potassium
   iv) Calcium.

d) Give the principle involved in limit test of Lead along with the reaction.

P.T.O.

SECTION - II

Q4) Attempt any ONE from the following. **[10]**

a) Explain in detail absorption, distribution and physiological role of Iron. Give preparation, properties, uses and storage of

i) Ferrous Sulphate

ii) Ferric ammonium citrate

iii) Ferric chloride

b) What are topical agents? Classify them with suitable examples. Explain mechanism of action of Antimicrobial agents. Discuss Preparation Properties, storage and uses of Sodium perborate.

Q5) Solve any FOUR from the following. **[12]**

a) Write preparation, properties, uses and storage of oxygen.

b) What are expectorants? Give mechanism of action, preparation, properties of Potassium iodide.

c) Discuss any one lithium compound as an antidepressant agent.

d) Give the storage conditions for following inorganic gases

i) Carbon dioxide

ii) Nitrous oxide

iii) Nitrogen

e) Discuss copper as a trace element.

f) Give preparation, properties and uses of boric acid.

g) What are astringents? Discuss zinc sulphate as an astringent.

Q6) Solve any TWO from the following. **[8]**

a) Discuss barium sulphate as a 'Radioopaque Contrast Media'.

b) Define 'Antidotes'. Classify them with suitable examples. Give preparation, properties and uses of sodium thiosulphate.

c) Write a note on topical protective and adsorbents.

d) Write a note on 'dental products'.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3025

[Total No. of Pages : 3

[5452]-1004
F.Y. B. pharm
PHARMACEUTICAL ORGANIC CHEMISTRY - I
(2015 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

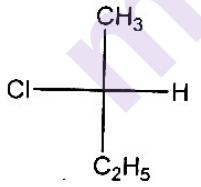
Q1) What is aromatic electrophilic substitution reaction? Mention any three types. Write down the mechanism of friedel craft alkylation. **[10]**

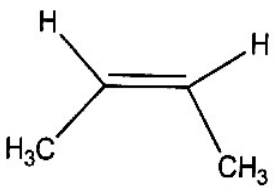
OR

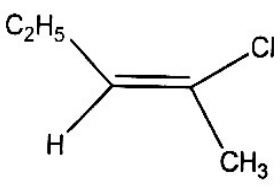
Define Elimination reactions and Explain in detail mechanism, stereochemistry and factors affecting rate of E1 reactions. **[10]**

Q2) Answer the following (any four) **[12]**

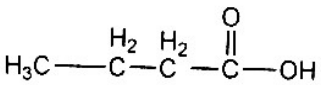
a) Assign R/S of E/Z configuration to following

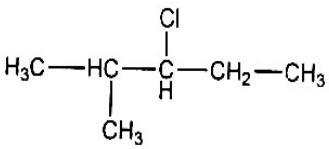
i) 

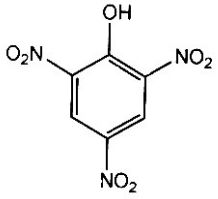
ii) 

iii) 

b) Write IUPAC names for following structures

i) 

ii) 

iii) 

c) Define following terms with suitable examples

i) Nucleophile ii) Carbanion iii) Electrophile

P.T.O.

d) Aniline is less basic than ethylamine. Give reason.
e) Explain Hyperconjugation with example.
f) Write short note on ozonolysis reaction in alkenes.
g) Draw resonating structures of following
   i) Benzoic acid ii) Aniline

Q3) Answer the following (any two) **[8]**

a) Define hybridization. Explain formation of ethane molecule through concept of hybridization.
b) Discuss mechanism of nitration of benzene. Expalin role of Conc. H_2SO_4 in nitrating mixture.
c) Compare E1 and E2 elimination reactions.
d) Classify organic compounds on the basis of elemental composition (at least four classes with suitable examples).

SECTION - II

Q4) Explain types of chemical reactions with suitable examples. **[10]**

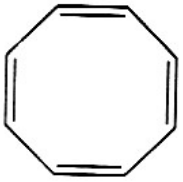
OR

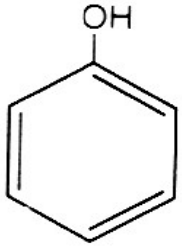
Define isomerism? Explain structural and geometrical isomers with examples. **[10]**

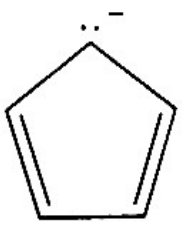
Q5) Answer the following (any four) **[12]**

a) Draw structures from IUPAC names of following :
   i) 4-nitro ethylbenzene
   ii) 2-chlorobutanoic acid
   iii) Butanal
b) Explain any two factors affecting E2 reactions.
c) Explain Saytzeff rule for 1,2 elimination reaction?
d) Explain why phenol is less acidic than acetic acid.
e) Explain mechanism of E_1CB reaction.
f) Arrange following in order of increasing acidity with explanation
   i) Acetic acid
   ii) Trichloroacetic acid
   iii) Chloroacetic acid

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

i) 

ii) 

iii) 

Q6) Answer the following (any two) **[8]**

a) Hydroxyl group is ortho-para director? Explain.

b) State and explain markovnikov and Anti markonikov rule.

c) Write any two methods of preparation and two reactions of alklynes.

d) Explain inter and intra molecular forces of attraction.

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Total No. of Questions :6]

SEAT No. : ____

P3026

[Total No. of Pages : 2

[5452]-1005
First Year B. Pharmacy
HUMAN ANATOMY AND PHYSIOLOGY - I
(2015 Pattern) (Credit System) (Semester - I)

Time : 3 Hours] ***[Max. Marks : 60***

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 RBC life cycle in detail. **[10]**

OR

Explain different types of Muscular tissues with their function & properties. Discuss Anatomy & Physiology of skeletal muscles.

Q2) Answer the following (Any 4) : **[12]**

a) Explain the structure and functions of Nucleus.

b) Explain with the help of figure an example of Negative feedback loop.

c) Explain the structure of Mitochondria.

d) Explain the structure of Epithelial tissue.

e) Define the Following :

i) Anatomy ii) Histology iii) Immunity

f) Explain the levels of structural organization.

g) What are different types of Anemia?

Q3) Write short note on (Any 2) : **[8]**

a) Protein Synthesis

b) Body Imaging Techniques

c) Anatomy and functions of Spleen

d) Connective Tissue

P.T.O.

SECTION - II

Q4) Define cardiac cycle and describe various events occurring in cardiac cycle. **[10]**

OR

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

Q5) Answer the following (Any 4) : **[12]**

a) Explain the conduction system of Heart.

b) Draw neat labeled diagram of Artery and Vein.

c) Explain the types of blood circulation.

d) Discuss histology & functions of Pancreas.

e) Define:

i) Cardiology ii) Gastroenterology iii) Health

f) Write a note on heart sounds.

g) Explain the functions of Stomach.

Q6) Write short note on (Any 2) : **[8]**

a) Small Intestine

b) ECG

c) Large Intestine

d) Family planning

Total No. of Questions : 6]

SEAT No. :

P3027

[Total No. of Pages : 2

[5422]-1006

F. Y. B. Pharmacy

1.1.6 - COMMUNICATION AND SOFT SKILL DEVELOPMENT

(2015 Pattern) (Semester - I)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

Q1) Define communication. Enlist the types of Communication. Explain in detail the types of Non verbal Communication. **[10]**

OR

Describe the Expository style of writing and states its structure.

Q2) Answer the following. (Any 4) **[12]**

a) State various purposes of writing.

b) Explain the importance of oral communication.

c) State the principles of paragraph writing.

d) Language as a tool of communication

e) Explain about abstract.

f) Write about semantics of connectives.

g) Explain Scope & Significance of technical communication.

Q3) Write short note on (Any 2). **[8]**

a) Objective Style vs. Literary Composition

b) Developing effective messages

c) Differentiate between technical communication and general writing.

d) Reference material.

P.T.O.

SECTION - II

Q4) Define business communication. Write principles and essentials of good correspondence. Explain Different types of commercial correspondence. **[10]**

OR

Describe the applications of modern technology in communication.

Q5) Answer the following (Any4) **[12]**

a) Write an application for the post of production officer in pharmaceutical industry.
b) Enlist and explain the components of Resume.
c) Classify reports. Write the parts of reports.
d) Write an account on interpersonal skills.
e) What is empathy. Discuss its types.
f) Explain Vowels and Consonants in phonetics.
g) Define notice. Explain its contents.

Q6) Write short note on (Any 2) **[8]**

a) Globalization of business
b) Enquiry letters
c) Email
d) Problem solving

Total No. of Questions : 6]

SEAT No. :

P3028

[Total No. of Pages :2

[5452] - 1011

F.Y. B. Pharmacy

1.2.1 - (T) : PHARAMECEUTICS-II

(2015 Pattern) (Semester - II) (Credit System)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

Q1) Define and classify packaging materials. What are various types of containers and closures used to pack pharamaceutical products? **[10]**

OR

Explain the pharmaceutical significance of size separation. Write a note on powder gradation as per I.P.

Q2) Answer the following (Any Four). **[12]**

a) Explain Darcy equation and Kozeny-Carman equation with respect to filtration process.

b) Describe Strip packing as unit dose packing technique.

c) Enlist and explain factors affecting rate of filtration.

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

e) Explain 'Filter leaf' with well labeled diagram.

f) What are various mechanisms of size reduction?

g) Explain construction, working and application of Colloid mill.

Q3) Write Short Note on (Any 2) **[8]**

a) Rotary drum filter.

b) Filling, forming and sealing technique.

c) Cyclone separator.

d) Importance of size reduction in pharmacy.

P.T.O.

SECTION - II

Q4) Define the terms bio-pharmaceutics, bioavailability and bioequivalence. What is the relevance of bioavailability and bioequivalence in product development process?

Draw a well labeled typical plasma conc. - time profie. **[10]**

OR

Enlist various methods of mixing solids with merits and demerits. Add a note on factors affecting mixing of solids.

Q5) Answer the following (Any 4). **[12]**

a) Describe Phase I and Phases II metabolic processes.

b) Write on Blister packing.

c) Describe and differentiate between active transport and passive diffusion.

d) Write a note on ROPP.

e) Explain in brief Triple roller mill.

f) Layout of Liquid oral manufacturing unit.

g) Discuss in brief Impellers and Propellers.

Q6) Write short note on (Any 2). **[8]**

a) First pass effect.

b) Prevention of aeration and foam.

c) Packaging of liquids.

d) cGMP.

Total No. of Questions : 6]

SEAT No. :

P3029

[Total No. of Pages : 2

[5452]-1012

First Year B. Pharmacy

DOSAGE FORM DESIGN

(2015 Pattern) (Semester - II) (Credit Pattern)

Time : 3 Hours] *[Max. Marks : 60*

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) Define and explain different types of emulsions and discuss instabilities in emulsion. **[10]**

OR

Define and explain different types of powders. Explain method of preparation of effervescent granules.

Q2) Answer the following (Any 4): **[12]**

a) Classify conventional dosage forms with examples.

b) Describe various properties of powders.

c) Explain importance of granulation.

d) Differentiate between floculated and defloculated suspension.

e) Write a note on HLB and RHLB.

f) Explain the Importance and measurement of flow properties of powder.

g) Methods of formulation of Emulsion.

Q3) Write short note on (Any 2): **[8]**

a) Write a note on modified release dosage forms.

b) Add a note on emulsifying agent.

c) Add a note on suspensions of precipitate forming liquids.

d) Formulation aspects of tooth powder.

P.T.O.

SECTION-II

Q4) Explain Radiopharmaceuticals and Write a note therapeutic and diagnostic application of Radiopharmaceuticals. **[10]**

OR

Explain different methods of enhancement of solubility of drugs.

Q5) Answer the following (Any 4): **[12]**

a) Displacement value.

b) Differentiate between ointment and creams.

c) Factors affecting rate of dissolution.

d) Importance of coca butter.

e) Ointment bases.

f) Explain Noye's Whitney equation.

g) Quality control of gels.

Q6) Write short note on (Any 2): **[8]**

a) Mechanism of dissolution.

b) Define and classify different types of semisolid dosage forms with examples.

c) Quality control of radiopharmaceuticals.

d) Add a note on gelling agents.

Total No. of Questions : 6]

SEAT No. :

P3030

[Total No. of Pages :2

[5452] - 1013

F.Y. B. Pharmacy

PHARMACEUTICAL ANALYSIS - I

(2015 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks :60*

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 indicate full marks.***
4) ***All questions carry equal marks.***
5) ***All questions are compulsory.***

SECTION - I

Q1) What is differentiating solvent? Discuss solvents used in non-aqueous titration. Explain preparation and standardization of 0.1 M Perchloric acid solution. **[10]**

OR

Explain in detail Theories of acid base indicators. What do you mean by mixed and universal indicators.

Q2) Answer the following (any four). **[12]**

a) Define Primary standard. Why $KMnO_4$ cannot be used as primary standard.

b) Distinguish between Accuracy and Precision.

c) Explain

i) Normality

ii) Molarity

iii) Molality

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

e) Explain T-test in brief.

f) Discuss in brief external indicators.

g) Polyhydric alcohols are used in the assay of boric acid. Give reason.

P.T.O.

Q3) Write short notes on (any two) **[8]**

a) Principle involved in redox titration with examples.

b) Pharmaceutical Applications of Non-aqueous titrations.

c) Errors in analysis.

d) Explain neutralization curves (with examples) of

i) Strong acid & Strong base titration.

ii) Strong base & weak acid titration.

SECTION - II

Q4) Explain electron balance method. Add a note on end point detection in redox titration. **[10]**

OR

Explain Principle of Volhard's method and elaborate its application in determination of Chloride. Give its advantages over Mohr's method.

Q5) Answer the following (any four). **[12]**

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

b) How solubility product and common ion effect affects precipitation.

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

d) Differentiate between iodimetric and iodometric titration.

e) Nitrobenzene is used in the assay of ammonium chloride. Explain.

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

g) Comment on organic precipitants.

Q6) Write short note on (any two). **[8]**

a) Sodium Nitrite Titration.

b) Masking and Demasking agents.

c) Pharmaceutical Applications of Gravimetry.

d) Titanious Chloride titration.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3031

[Total No. of Pages : 2

[5452]-1014

F.Y. B. Pharmacy

PHARMACEUTICAL ORGANIC CHEMISTRY - II

(2015 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

1) ***All questions are compulosry.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Write reactions whenever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the structure and reactivity of carbonyl group. Distinguish between aldehydes and Ketones. Write the mechanism for Cannizzaro's reaction. **[10]**

OR

What are Phenols? Explain acidity of Phenols. Write any three methods of preparation and three reactions of phenols.

Q2) Solve the following (Any Four) **[12]**

a) Write any three reactions of Alcohols.

b) Explain basicity of Amines.

c) Write chemical equation for reaction of benzaldehyde with :

   i) Semicarbazide

   ii) Phenyl hydrazine

d) Arrange the given organic compounds in order of increasing acidity and justify the order.

   i) Alcohols

   ii) Carboxylic acids

   iii) Phenols

e) Write any three methods of preparation of Amines.

f) Write any three methods of preparation of Ethers.

g) Draw structures for following IUPAC names;

   i) 4-Methyl-2-hexanol

   ii) 2,4,6-tribromo aniline

   iii) 3-Methyl cyclohexanone

P.T.O.

Q3) Solve the following (Any Two) **[8]**

a) Explain Haloform reaction.

b) Tests to distinguish between primary, secondary and tertiary alcohols.

c) Reaction and mechanism for Reformatsky reaction.

d) Methods for preparation of sulphonic acids.

SECTION - II

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

OR

Explain the substitution Nucleophilic bimolecular reaction with mechanism, stereochemistry and factors affecting giving suitable examples.

Q5) Answer the following (Any four) : **[12]**

a) Explain any two reactions of amides.

b) Give preparation and uses of anhydrides.

c) Discuss Transesterification reaction.

d) Explain acid catalyzed esterification of carboxylic acids.

e) Explain any two reactions of isocyanides.

f) Give any two chemical reaction of acid chloride.

g) Explain any two method of synthesis of carboxylic acids.

Q6) Write short note on (Any Two) : **[8]**

a) Malonic ester synthesis

b) Dieckmann reaction

c) Substitution Nucleophilic internal reaction

d) Reaction of Grignard reagent

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3032

[Total No. of Pages :2

[5452] - 1015

F.Y. B. Pharmacy

HUMAN ANATOMY & PHYSIOLOGY - II

(2015 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

Q1) Discuss the anatomy of spinal cord. Explain in detail functional components of reflex arc. **[10]**

OR

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

Q2) Answer the following (any four) **[12]**

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

b) Explain the structure of Taste buds.

c) Explain physiology of Vision.

d) Explain the composition of CSF.

e) Explain the structure of cerebrum.

f) Draw a neat labeled diagram of Human Ear.

g) Explain the structure & functions of Nose.

P.T.O.

Q3) Write notes on (any TWO). **[8]**

a) Distinguish between Sympathetic & Parasympathetic Nervous system.

b) Extra pyramidal system.

c) Brain stem.

d) Neurotransmission.

SECTION - II

Q4) Draw a neat labeled diagram of nephron and explain detailed physiology of urine formation. **[10]**

OR

Discuss female reproductive cycle and hormones involved in it.

Q5) Answer the following (any four) **[12]**

a) Define the following terms.

i) Hypothyrodism

ii) Endometriosis

iii) Diabetes Mellitus.

b) Draw a neat labeled diagram of urinary system.

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

d) Explain Spermatogenesis.

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

f) Explain characteristics of normal urine.

g) Explain physiological role of FSH and LH.

Q6) Write notes on (any two) **[8]**

a) Human growth hormone.

b) Renal clearance test.

c) Pancreas, its secretion and function.

d) Oogenesis.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3033

[Total No. of Pages : 2

[5452] - 1016

First Year B.Pharmacy

PHARMACOGNOSY

(2015 Pattern) (Semester - II) (Credit System)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

Q1) Explain in detail History and structure of DNA along with a elaborate information on molecular basis of hereditary. **[10]**

OR

Explain in detail morphology and microscopy of leaves with a information on surface preparation.

Q2) Answer Any Four. **[12]**

a) Give relevance of biology to pharmaceutical sciences.

b) Provide information on genetic code.

c) Define Ergastic cell contents.

d) Explain in brief structure of plant cell.

e) Differentiation between meristematic and permanent tissues.

f) Explain in brief unorganized drugs.

g) Explain in brief classification of fruits.

Q3) Write short notes on Any Two. **[8]**

a) Economic botany.

b) Meiosis.

c) Primary and secondary growth.

d) Anatomy of seed.

P.T.O.

SECTION - II

Q4) Describe in detail significance, sites and pathways involved in photosynthesis. **[10]**

OR

Define Biodiversity. Explain in detail factors responsible for rapid degradation of habitats of western Ghats.

Q5) Answer any Four **[12]**

a) Explain in detail Significance of chemosynthesis.

b) Describe binomial nomenclature.

c) Describe development and status of pharmacognosy.

d) Explain in detail Artificial methods of classification.

e) Explain in detail mutation in plant.

f) Provide scope and significance of pharmacognosy.

g) Explain in detail need of plant taxonomy.

Q6) Write short notes on Any Two. **[8]**

a) Phytohormones.

b) Natural method of classification.

c) Hybridization.

d) Types of Ecosystems.

Total No. of Questions : 6]

SEAT No. :

P3034

[Total No. of Pages : 2

[5452]-1021

S.Y. B.Pharmacy

2.31-T : PHYSICAL PHARMACEUTICS - I

(2015 Pattern) (Semester - III)

Time : 3 Hours] *[Max. Marks : 60*

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 different methods for liquefaction of gases with their principles.

b) Explain the different terms used in the Gibbs phase rule ,Explain the phase diagram for on component system with its pharmaceutical significance.

Q2) Attempt any Four. **[12]**

a) Explain the Raoult's law.

b) Draw a neat labeled phase diagram for two component system containing liquid phases.

c) Explain the van der Waal equation for real gases.

d) What are the different types of solutions? Enlist the different properties of solutions with examples.

e) The freezing point depression of a solution of 1.00 g of 1,3-dinitrobenzene in 50.0 g of benzene was determined by the equilibrium method and was found to be 0.6095º C.

f) What are solid dispersions? Write their applications in pharmacy.

g) Why freezing point depression is a colligative property?

P.T.O.

Q3) Write short notes (Any two) **[8]**

a) Osmotic pressure as colligative property.

b) Conductometric titrations.

c) Two phase system aerosol.

d) Fractional distillation.

SECTION - II

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

a) State Nernst Distribution law along with factors affecting and applications.

b) Derive the equation for solubility of solids in liquids and discuss factors affecting it.

Q5) Attempt any Four. **[12]**

a) Discuss significance of polymorphism in pharmaceuticals.

b) Define solubility parameter,Solubility and Saturation solubility.

c) Discuss the types of interaction between Solute and solvent.

d) Discuss solubility and permeability co-relationship in detail.

e) Define and differentiate Entropy and Enthalpy.

f) Discuss drug and solvent properties affecting Distribution coefficient.

g) Discuss the factors affecting solubility of gases in Liquid.

Q6) Write short notes (Any two) **[8]**

a) Crystallization .

b) Glass transition temperature.

c) X-Ray Crystallography.

d) Solubility of electrolytes.

Total No. of Questions : 6]

SEAT No. :

P3036

[Total No. of Pages : 2

[5452]-1023

S. Y. B. Pharmacy
PHARMACEUTICAL BIOCHEMISTRY
(2015 Pattern) (Semester - III) (Theory)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

Q1) Explain effect of substrate concentration on enzyme activity in the presence of Inhibitors. **[10]**

OR

Give the structure and function of mRNA. Explain the process of Transcription in eukaryotic cell in brief.

Q2) Attempt short notes on any four of the following: **[12]**

a) Biological role of glucose and glycogen.

b) End group analysis.

c) Classification of amino acids based on structure.

d) Scope of Pharmaceutical Biochemistry in Pharmaceutical Sciences.

e) Biological role of' any three important amino acids.

f) Genetic code of Eukaryotic cell.

g) Applications of enzymes with emphasis on marker enzymes.

Q3) Write notes on any two of the following : **[8]**

a) Globular proteins

b) Enzyme inhibition

c) Nucleotides and Nucleosides

d) Functions of Lipids

P.T.O.

SECTION - II

Q4) Give a detailed account of Urea Cycle and its biological significance. **[10]**

OR

Explain the synthesis of Glycogen in detail. How is Glucose released from Glycogen?

Q5) Attempt short note on any four of the following : **[12]**

a) Homeostasis of Glucose

b) Utilization of Cholesterol

c) Fate of Pyruvate

d) Role of Vit. B6 in Transamination

e) Importance of Glycolysis

f) Triglyceride metabolism

g) mRNA synthesis

Q6) Write notes on any two of the following : **[8]**

a) Explain the steps in Protein Synthesis.

b) Explain TCA cycle and significance in brief.

c) Give an account of Cholesterol synthesis.

d) Explain beta oxidation of odd carbon fatty acids.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3037

[Total No. of Pages : 3

[5452]-1024
S.Y. B. pharm.
PHARMACEUTICAL ORGANIC CHEMISTRY - III
(2015 Pattern) (Semester - III) (Theory)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

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

a) Define and classify carbohydrates. Establish open chain structure and ring structure for fructose.

OR

b) What is meant by racemic modification. Explain various methods of resolution of racemic mixture.

Q2) Attempt any four of the following : **[4×3=12]**

a) Explain the terms "enantiomers" and "diastereomers" How do they differ?

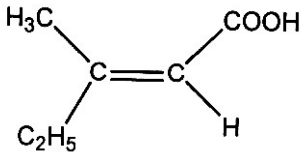
b) Explain the action of Fehling's solution and bromine water on glucose.

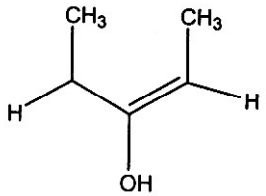
c) Comment on optical isomerism giving suitable examples.

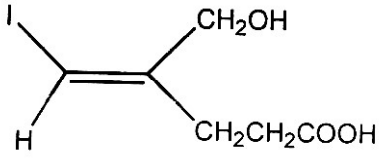
d) How will you convert D-glucose to arabinose?

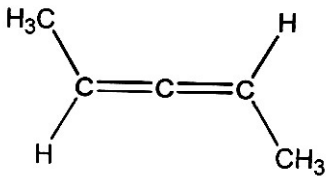
e) Explain various conformations of ethane.

f) Assign configuration to the following. (any three)

i) 

ii) 

iii) 

iv) 

g) Chair conformation of cyclohexane is more stable than boat conformation. Why ?

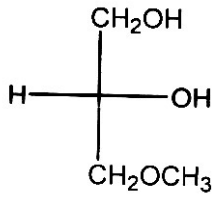
P.T.O.

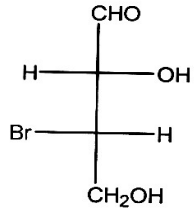
Q3) Attempt any two of the following : **[2 × 4=8]**

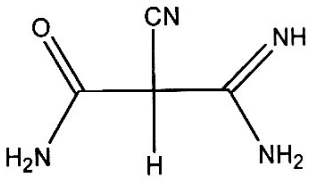
a) Write any four chemical reactions of fructose

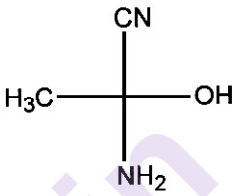
b) Comment on conformational isomerism in n-butane

c) Establish configuration to the following.

i) 

ii) 

iii 

iv) 

d) Predict the product.

i) $C_6H_{12}O_6$ + Ph-NH-NH_2 ⟶ ?

Glucose

ii) $C_6H_{12}O_6$ + $(CH_3CO)_2O$ ⟶ ?

Glucose

SECTION - II

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

a) What are amino acids? Explain various methods for synthesis of amino acids.

OR

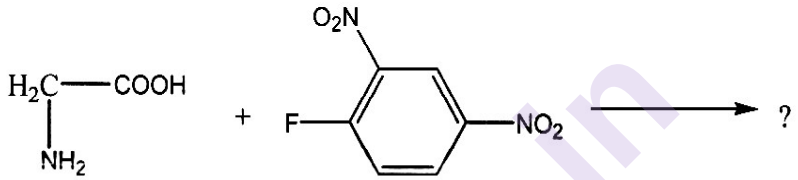
b) How will you synthesize catechol from o-hydroxybenzaldehyde by Dakin oxidation and amines from carboxylic acid by schmidt rearrangement ? Explain giving mechanism.

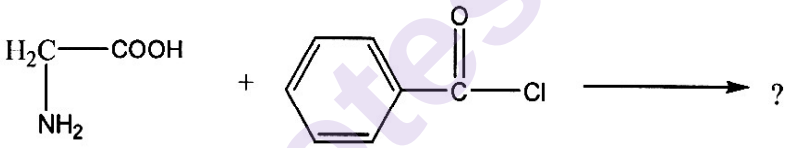
Q5) Attempt any four of the following : **[4×3=12]**

a) Fries rearrangement.
b) Hofmann rearrangement.
c) Lossen rearrangement.
d) Stevens rearrangement.
e) Classify amino acids giving suitable structures.
f) Write a note on pericyclic reactions.
g) Conversion of 1,2-diols to ketones with mechanism.

Q6) Attempt any two of the following : **[2×4=8]**

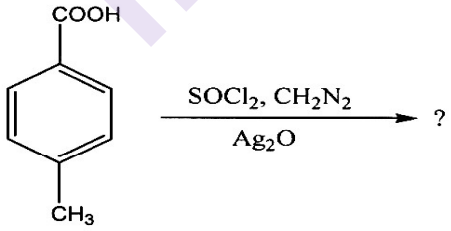
a) Predict the product.

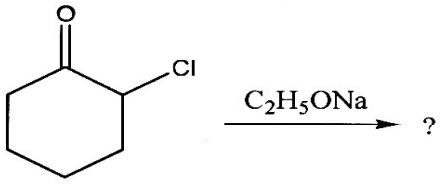
i) 

ii) 

b) Write a short note on solid phase synthesis.

Predict the product and write reaction mechanism.

c) 

d) 

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Total No. of Questions :6]

SEAT No. : ____

P3038

[Total No. of Pages : 2

[5452]-1025
S.Y.B. Pharm.
PHARMACOLOGY - I
(2015 Pattern) (Semester - III)

Time : 3 Hours] ***[Max. Marks :*** 60

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Write answers for section I and section II in separate answer sheets.***

SECTION - I

Q1) Enlist various routes of drug administration. Write site of adminstration, merits and demerits of parenteral routes of drug administration. **[10]**

OR

Define drug absorption. Enlist and explain factors affecting drug absorption. **[10]**

Q2) Solve any four. **[12]**

a) Define drug, pharmacokinetics and pharmacodynamics.

b) What do you mean by essential medicines?

c) Define volume of distribution. What is its significance?

d) Define first pass metabolism of drug? Give one example.

e) Explain drug nomenclature with examples.

f) Which are the factors affecting drug distribution?

g) What are new methods in new drug discovery process?

Q3) Solve any two. **[8]**

a) Write a short note on clinical trials.

b) Write site of administration, examples of dosage form, advantages and disadvantages of sublingual and oral route of drug administration.

c) What are the transport mechanisms of drugs across plasma membrane?

d) Define drug metabolism and discuss phase 1 and phase 2 reactions of drug metabolism.

P.T.O.

SECTION - II

Q4) Classify histamine antagonists with examples and explain their pharmacological actions and therapeutic uses. **[10]**

OR

Explain in detail structure and transduction mechanism of G-protein coupled receptors. **[10]**

Q5) Solve any four. **[12]**

a) Define agonist, antagonist and inverse agonist.

b) What do you mean by drug antagonism? What are its types?

c) What are limitations and significance of dose response curves?

d) Enlist changes in pharmacokinetic parameters in pediatric patients.

e) Define iatrogenic diseases. Give exmples.

f) What are adverse drug reactions? Give their exmples.

g) What are sites and mechanisms of drug action?

Q6) Solve any two : **[8]**

a) Explain Drug Interactions.

b) Discuss rational drug treatment in geriatric patients.

c) Explain pharmacology of 5-HT.

d) Discuss transduction mechanism of ion channel linked receptors.

Total No. of Questions : 6]

SEAT No. :

P3039

[Total No. of Pages : 2

[5452]-1026

S.Y. B. Pharmacy

PHARMACOGNOSY AND PHYTOCHEMISTRY - I

(2015 Pattern) (Semester - III)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

Q1) Define primary and secondary metabolites. Describe the functions of various secondary metabolites in and out of plant. **[10]**

OR

What are the components of Pharmacognostic study? Brief the significance of each component. **[10]**

Q2) Attempt any Four of the following. **[12]**

a) Describe the method of extraction of starch from potato.
b) Describe the industrial uses of some carbohydrates.
c) Write the pharmacognostic account of Linseed.
d) Write B.S., C.C., Uses of Guar Gum and Okra mucilage.
e) Describe the method of extraction of Cod liver oil.
f) Describe source and uses of Insulin.
g) Write in brief about Streptokinase.

Q3) Attempt any two of the following. **[8]**

a) Note on Wool fat.
b) Describe source and properties of Chitosan and cyclodextrin.
c) Write note on Cotton.
d) Differentiate between Cocoa butter and Kokum butter.

P.T.O.

SECTION - II

Q4) Define and classify Glycosides. Describe the biogenetic pathway for Tetracyclic Triterpenoid saponines. **[10]**

OR

What are true tannins and pseudo tannins? Give detail pharmacognosy of Amla. **[10]**

Q5) Attempt any Four of the following. **[12]**

a) Explain Goldbitter skin test.
b) Write chemical tests for sennosides.
c) Explain mechanism of action of Digitoxin.
d) Differentiate between Black and pale catechu.
e) Comment on cardinoloids and bufadinoloids.
f) Write Source and uses of Andrographolide.
g) Describe B.S., C.C., Uses of Rheum palmatum.

Q6) Attempt any two of the following. **[8]**

a) Explain the method for determination of tannin content.
b) Write short note on Yam.
c) Describe properties and various uses of Aloe.
d) Differentiate between Haritki and Bibhitki.

Total No. of Questions : 6]

SEAT No. :

P3040

[Total No. of Pages : 2

[5452]-1031
S. Y. B. Pharmacy
PHYSICAL PHARMACEUTICS - II
(2015 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 60*

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) Classify rheological systems along with examples. Add note on Cup and Bob viscometer. **[10]**

OR

Define and differentiate between surface tension and interfacial tension. Explain the various methods used to measure surface tension and interfacial tension.

Q2) Attempt any four of the following: **[12]**

a) Describe the degradation pathways.

b) What is adsorption isotherm?

c) Explain hysteresis loops in rheology.

d) Describe the method of Falling ball viscometer.

e) Explain order and molecularity.

f) Illustrate and explain yield value in plastic flow.

g) What is half life and shelf life? How are they calculated for first order reactions?

Q3) Write notes on any two of the following: **[8]**

a) Reversible reactions.

b) HLB scale.

c) Spreading coefficient.

d) Negative thixotropy.

P.T.O.

SECTION-II

Q4) a) What do you understand by the term "specific surface of particles"? How is it experimentally determined? **[10]**

b) Briefly describe what measures you will take to improve flow property of a tablet granulation?

OR

Define colloids. What are its different types? Explain stability of colloids with the help of DLVO theory.

Q5) Attempt any four of the following: **[12]**

a) Explain optical properties of colloids.

b) Define : Angle of repose, Bulkiness and Granule density.

c) Discuss the role of moisture content and particle size distribution on flow behaviour of a powder.

d) Define and discuss various porosities.

e) Explain with suitable example protective colloids.

f) Give pharmaceutical importance of Micromeritics.

g) Discuss Nernst potential and Zeta Potential with their applications in pharmacy.

Q6) Write notes on any two of the following: **[8]**

a) Particle size and size distribution.

b) Micellar solubilization and its application.

c) Particle volume measurement.

d) Donnan-membrane equilibrium with its role in pharmacy.

✈ ✈ ✈

Total No. of Questions : 6]

SEAT No. :

P3041

[Total No. of Pages :2

[5452] - 1032

S.Y. B. Pharmacy

PATHOPHYSIOLOGY & CLINICAL BIOCHEMISTRY

(2015 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

Q1) Define and classify Cell injury, explain the etiology of cell injury. **[10]**

OR

Define Myocardial infarction. Discuss in detail pathophysiology and etiology of MI.

Q2) Attempt any four of the following: **[12]**

a) Write the etiology of Jaundice.

b) Deifne and enlist the types of epilepsy.

c) Define reversible and irreversible cell injury.

d) Write the complications of hypotension.

e) Write short note on cellular intoxication.

f) Explain the clinical manifestation of Cirrhosis.

g) Discuss the pathophysiology of Raynaud's disease.

Q3) Write notes on the following (Any two). **[8]**

a) Cardiac Arrhythmia.

b) Hypoxia.

c) Congestive Heart failure.

d) Clinical Manifestation of Angina pectoris.

P.T.O.

SECTION - II

Q4) Define Diabetes. Explain in detail pathophysiology of Diabetes mellitus. **[10]**

OR

Discuss etiology and pathophysiology of Chronic Renal Failure.

Q5) Attempt any four. **[12]**

a) Write etiology of urinary calculi.

b) Write the diagnosis and treatment for Malaria.

c) Define and enlist types of epilepsy.

d) Define the terms:

i) Cretinism

ii) Nephritis

iii) Dysmenorrhoea.

e) Enlist the clinical manifestations of hypothyroidism.

f) Write the causative agents of Syphilis and Gonorrhoea.

g) Discuss in brief about urinary tract infections.

Q6) Write notes on following (any two). **[8]**

a) Schizophrenia.

b) AIDS.

c) Hypothyroidism.

d) PCOD.

Total No. of Questions : 6]

SEAT No. :

P3042

[Total No. of Pages : 2

[5452]-1033

S.Y. B. Pharmacy

PHARMACEUTICAL ORGANIC CHEMISTRY - IV

(2015 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 60*

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 sheets.***
4) ***Draw neat diagrams and structures wherever necessary.***

SECTION - I

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

OR

Define polycyclic compounds. Write methods of synthesis and reactions of Anthracene. **[10]**

Q2) Answer any four of the following. **[12]**

a) Draw the following heterocycles with numbering and example of one drug each.
   i) Hydantoin
   ii) Benzthiazole
   iii) Quinazoline

b) Discuss various linkers and solid supports used in solid phase synthesis.

c) What is the principle of microwave assisted organic synthesis.

d) Give methods of preparation, reactions and uses of diazomethane.

e) Write nucleophilic substitution reactions of quinoline.

f) Discuss Haworth synthesis of napthalene.

g) Imidazole is more basic than pyrrole. Give reason.

Q3) Write short notes on any two of the following. **[8]**

a) Applications of microwave assisted synthesis

b) Retrosynthesis of ibuprofen

c) Electrophilic substitution reactions of furan

d) Deconvolution method in combinatorial synthesis

P.T.O.

SECTION - II

Q4) Give an account of general rules and guidelines in retrosynthesis. **[10]**

OR

What is combinatorial synthesis? Add a note on mixed combinatorial synthesis. Explain 'Mix and Split' synthesis. **[10]**

Q5) Answer any four of the following : **[12]**

a) Thiophene is more aromatic than furan. Justify.

b) What is parallel synthesis in combinatorial chemistry? Write its advantages.

c) Write the resonating structures and reactions of phenanthrene.

d) Why does pyridine undergo electrophilic substitution reactions under strong conditions?

e) Elaborate on the advantages of microwave assisted organic synthesis.

f) What is NBS? Give its synthesis and uses.

g) Give any three reactions on pyrrole.

Q6) Write short notes on any two of the following. **[8]**

a) Applications of combinatorial chemistry

b) Electrophilic substitution reactions of isoquinoline

c) Hantzsch pyridine synthesis

d) Retrosynthesis of Propranolol

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3043

[Total No. of Pages :2

[5452] - 1034

S.Y. B. Pharm.

PHARMACEUTICAL ANALYSIS - II

(2015 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks :60*

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 the Reference and Indicator electrodes with suitable examples. Write the pharmaceutical applications of Potentiometry. **[10]**

OR

What is cell constant of a conductometer? Explain the terms specific conductance, molecular and Equivalent conductance.

Q2) Attempt any four of the following. **[12]**

a) Write principle of conductometry.
b) Classify electroanalytical techniques with suitable examples.
c) Discuss the mechanisms of mass transfer.
d) What is effect of dilution on conductance?
e) How standardization of pH meter is done?
f) Explain the principle of Polarograph.
g) Discuss Differential Pulse Polarography.

Q3) Write short notes on any two of the following. **[8]**

a) Conductometric titrations.
b) Half wave potential.
c) Endpoint detection methods in Potentiometry.
d) Ilkovic equation.

P.T.O.

SECTION - II

Q4) Explain principle of Coulometry and discuss in detail controlled potential coulometry. **[10]**

OR

Explain critical angle concept in refractometry and write instrumentation and working of Abbe's refractometer.

Q5) Attempt any four of the following. **[12]**

a) Give applications of Refractometry.

b) Write advantages and disadvantages of Amperometric titration.

c) Give applications of Coulometry.

d) Explain cotton effect.

e) Explain factors affecting angle of rotation.

f) Explain types of pain polarized light.

g) Explain principle of Amperometry.

Q6) Write short notes on any two of the following. **[8]**

a) Dead stop end point method in amperometry.

b) Karl-Fischer titration.

c) Circular dichorism.

d) Pulfrich refractometer.

Total No. of Questions : 6]

SEAT No. :

P3044

[Total No. of Pages : 2

[5452]-1035
B.Pharm.
PHARMACOGNOSY AND PHYTOCHEMISTRY - II
(2015 Pattern) (Semester-IV)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION-I

Q1) Give pharmacognostical account of Ephedra. **[10]**

OR

Give pharmacognostical account of Jesuit's bark.

Q2) Answer any Four questions: **[12]**

a) Draw transverse section of Kurchi bark.

b) Write three microscopical difference between Vinca leaf and Datura leaf.

c) Explain how you will detect adultration in Rauwolfia root by its histological characters.

d) Draw chemical structure of Vasaka alkaloid.

e) Write biological source, chemical constituents and uses of Ergot.

f) WriteThalleioquin test and give its significance.

g) State the method of collection of Opium latex.

Q3) Write short notes on (Any Two). **[8]**

a) Extraction of alkaloids.

b) Chemistry of ipecac alkaloids.

c) Glycoalkaloid.

d) Pilocarpus

P.T.O.

SECTION-II

Q4) Explain classification, occurrence, properties and chemistry of terpenoids. Give the pharmacognostic account on Clove. **[10]**

OR

What are Diterpenoids? Write a note on Taxus and Coleus.

Q5) Answer any Four questions **[12]**

a) Give the biological source,chemical constituents and uses of Saffron.

b) Explain the histological characteristics of Coriander.

c) Enlist chemical constituents and uses of Boswellia.

d) Give the chemical constituents and uses of Ginseng.

e) Give the biological source,chemical constituents and uses of Artemisia.

f) Draw the structure of Bixin and enlist its uses.

g) Explain cultivation and collection of Indian Hemp including identification test.

Q6) Attempt any Two of the following. **[8]**

a) Explain Sandal wood in detail.

b) Give the pharmacognostic account on Podophyllum.

c) Explain various extraction methods of volatile oils.

d) Write a note on Guggul.

Total No. of Questions : 6]

SEAT No. :

P3045

[Total No. of Pages : 2

[5452]-1036

S. Y. B. Pharm.

PHARMACEUTICAL ENGINEERING

(2015 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

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

a) Define Evaporation. Explain theory of evaporation. Describe multiple effect evaporator.

b) Explain different mechanisms of heat transfer in detail. Add a note on heat transfer to boiling liquids.

Q2) Attempt any four : **[12]**

a) Explain thermostatic traps for removal of condensates.

b) Explain Stefan Boltzman's law of heat transfer.

c) Working of drum dryer.

d) Write a note on molecular diffusion of gases.

e) Describe Pan Evaporator.

f) Explain boiling inside a vertical tube.

Q3) Attempt any two : **[8]**

a) A note on Spray dryer.

b) A short note on wiped film evaporator.

c) Heat transfer by conduction.

P.T.O.

SECTION - II

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

a) Explain crystallization by cooling mechanism. Explain supersaturation, nucleation & crystal growth.

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

Q5) Attempt any four : **[12]**

a) Explain Reynold's number.

b) Explain working of inclined manometer.

c) Explain factors affecting corrosion.

d) Explain Pitot tube.

e) Explain Orifice meter.

f) Write a note on Rotameter.

Q6) Write notes on any two: **[8]**

a) Swenson-Walker crystallizer

b) Bernoulli's theorem

c) Pressure differential flow meter

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3046

[Total No. of Pages : 2

[5452]-1041

T. Y. B. Pharm.

INDUSTRIAL PHARMACY - I

(2015 Pattern) (Semester - V)

Time : 3 Hours] *[Max. Marks : 60*

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) Solve any one question. **[10]**

a) Discuss the physicochemical, biopharmaceutical and therapeutic aspects of design of dosage form.

b) Explain the mechanism of wet granulation and describe any one advanced equipment for wet granulation.

Q2) Solve any four. **[12]**

a) Differentiate between capping and lamination of tablet. Mention remedies for them.

b) Describe various evaluation tests for granules.

c) Describe disintegration test as per IP 2010.

d) Explain formulation of effervescent tablet with example.

e) Write note on disintegrants used in tablet manufacturing.

f) What is Heckel plot? Give its significance.

g) Write a note on different parts of tablet machine.

Q3) Solve any two. **[8]**

a) Explain in detail compression cycle.

b) Give account of formulation of chewable tablets.

c) Write a note on extrusion and spheronization.

d) Explain in brief excipient used in tablet manufacturing.

P.T.O.

SECTION - II

Q4) Answer the following (Any One) **[10]**

a) Why tablet coating is required? Discuss in detail the different coating pans used in tablet coating process.

b) Discuss in detail formulation development of hard gelatin capsule, standards & defects thereof. Explain the volumetric and dosator principle in capsule filling.

Q5) Solve any four. **[12]**

a) What are Type A and Type B gelatin?

b) What are the ideal properties of polymers used in enteric coating of tablet. Enlist the materials used for enteric coating of tablets.

c) Explain the concept of base adsorption.

d) Discuss liming process in gelatin manufacturing.

e) Discuss various quality control tests of soft gelatin capsules.

f) Discuss the concept of compression coating.

g) Describe how tablet properties affecting the coating process.

Q6) Solve any two. **[8]**

a) Add a note on Fluidized bed coater.

b) Quality control parameters of hard gelatin capsules.

c) Write a note on formulation and development of soft gelatin capsules.

d) Discuss the common defects associated with coated tablets.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3047

[Total No. of Pages : 2

[5452]-1042

T. Y. B. Pharmacy
PHARMACEUTICAL ANALYSIS - III
(2015 Pattern) (Semester - V)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

Q1) Discuss in detail about different electronic transition in organic molecule. **[10]**

OR

State and derive the expression for the relationship between Beer's and Lambert's law.

Q2) Attempt any four of the following. **[12]**

a) Write a note on grating monochromator.

b) Explain the advantages of instrumental methods of analysis.

c) Explain the factors affecting absorption maxima.

d) Write about cuvettes used In UV visible spectroscopy.

e) Discuss about preparation of samples for analysis.

f) Discuss solvents used in UV Visible spectroscopy.

g) Explain the term reflection and refraction.

Q3) Write a note on any two of the following. **[8]**

a) Emission spectrum.

b) Photomultiplier tube.

c) Comparison of first and second derivative spectroscopy.

d) Steps in quantitative analysis.

P.T.O.

SECTION - II

Q4) Explain principle involved in fluorimetry and phosphorimetry. Discuss in detail about the factors affecting fluorescence. **[10]**

OR

Explain the principle and discuss in detail about instrumentation of flame photometry.

Q5) Attempt any four of the following. **[12]**

a) Explain principle involved in nepheloturbidimetry.

b) Explain line broadening and Doppler Effect in AAS.

c) Discuss radiation sources used in AAS.

d) Discuss filters used in fluorimetry.

e) Explain synchronous fluorescence.

f) Discuss advantages and disadvantages of fluorimetry and phosphorimetry.

g) Write note on Applications of AAS.

Q6) Write note on any two of the following. **[8]**

a) Interferences and their corrections in AAS.

b) Applications of flame photometry.

c) Instrumentation of Phosphorimetry.

d) Detectors used in AAS.

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3048

[Total No. of Pages : 2

[5452]-1043
T.Y. B. pharmacy
MEDICINAL CHEMISTRY - I
(2015 Pattern) (Semester - V)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

Q1) There are a number of drugs acting through different mechanisms to produce hypotension. Justify the statement with suitable examples. **[10]**

OR

Enlist various physicochemical properties necessary for drug action. Discuss their role in the determining the biological activity of drugs with help of suitable examples. **[10]**

Q2) Attempt any Four questions. Each question carries 3 marks. **[12]**

a) Write about isosterism and its effect on biological activity.

b) Write the scheme of synthesis for captopril

c) Write structures along with IUPAC nomenclature of

i) Methyl dopa ii) Terbutaline

d) Give an account of blood brain barrier.

e) Write a note of aminoalcohol esters as cholinergic blocking agents.

f) Comment on protein binding of drugs.

g) Write the structure, MOA and uses of reserpine.

Q3) Solve any Two questions. Each question carries 4 marks. **[8]**

a) Discuss the types of cholinergic receptors and their important physiological roles.

b) Outline the biosynthetic pathway for adrenergic neurotransmitters.

c) Discuss various theories proposed to explain drug receptor interaction.

d) Write a note on rennin-angiotensin system. Discuss any one ACE inhibitor.

P.T.O.

SECTION - II

Q4) What are sympathomimetics? How do you classify them? Write a detailed note on directly acting sympathomimetics. **[10]**

OR

What do you understand by the term biotransformation? Enlist the various Phase I and Phase II reactions giving one example for each type. **[10]**

Q5) Attempt any Four questions. Each question carries 3 marks **[12]**

a) Comment on role of solubility in drug design.

b) Give signal transduction mechanism for G-Protein coupled receptors.

c) Classify antianginal agents. Write the structure and MOA of any two drugs belonging to different classes.

d) Write a note on Ion channel receptor.

e) Discuss the biosynthesis, storage and release of Ach.

f) Write the scheme of synthesis for clofibrate.

Q6) Solve any Two questions. Each question carries 4 marks **[8]**

a) Discuss about adrenergic antagonists with suitable examples.

b) Write a note on high ceiling diuretics

c) Discuss any two drugs having anticholinergic action.

d) Discuss the general structural features required for drugs to possess cholinergic blocking activity.

❄❄❄❄

Total No. of Questions :6]

SEAT No. :

P3049

[Total No. of Pages : 2

[5452]-1044
T. Y. B. Pharmacy
3.5.4 PHARMACOLOGY - II
(2015 Pattern) (Semester-V)

Time : 3 Hours] *[Max. Marks :* 60

Instructions to the candidates:

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

SECTION - I

Q1) Define anticholinesterase agents. Classify anticholinesterase agents with suitable example. Explain the mechanism of action, therapeutic uses, and adverse effects of reversible anticholinesterases. **[10]**

OR

Define adrenergic receptor antagonist. Classify beta blockers with suitable example. Explain pharmacological action, adverse effect, drug interaction and therapeutic uses of beta blockers. **[10]**

Q2) Answer the following (Any 4) : **[12]**

a) Explain the pharmacological basis for adrenaline in anaphylactic shock.

b) Enlist the difference between sympathomimetic and parasympathomimetic agents.

c) Classify anticholinergic drugs with suitable example.

d) Explain biosynthesis of acetylcholine.

e) Classify skeletal muscle relaxants with suitable example.

f) Classify cholinergic receptors with their site or location.

g) Explain why neostigmine is preferred to physostigmine in myasthenia gravis.

Q3) Write a short notes on (any 2) : **[8]**

a) Neuromuscular blocker

b) Organophosphorus poisoning and its treatment

c) Alpha blocker

d) Pharmacotherapy of glaucoma

P.T.O.

SECTION - II

Q4) Write the classification of antihypertensive agents. Describe the pharmacology of beta blockers. **[10]**

OR

Classify the drug used in the treatment of bronchial asthma. Explain in detail about bronchodilators. **[10]**

Q5) Answer the following (any 4) : **[12]**

a) Describe the mechanism of action of Quinidine.

b) Write the mechanism of action and therapeutic uses of carbonic anhydrase inhibitor diuretic.

c) Discuss the role of HMG-CoA reductase inhibitors in the atherosclerosis.

d) Explain the mechanism of action and therapeutic uses of nitrates.

e) Classify anti-arrhythmic agents with suitable examples.

f) Explain the mode of action and therapeutic uses of anti-diuretic hormone.

g) Explain the action of beta-2 agonist in the treatment of bronchial asthma

Q6) Write a short notes on (any 2): **[8]**

a) Pharmacology of calcium channel blockers

b) Thiazide diuretics

c) Cardiac glycosides

d) Mast Cell Stabilizes

Total No. of Questions : 6]

SEAT No. :

P3050

[Total No. of Pages : 2

[5452]-1045

T.Y.B. (Pharmacy) (Theory)

ANALYTICAL PHARMACOGNOSY AND EXTRACTION TECHNOLOGY

(2015 Pattern) (Semester - V) (Credit System)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

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

a) Explain Non Chromatographic Separation Techniques in detail.

b) Explain Sources, Properties, Isolation, Tests and Uses of Curcumin.

Q2) Attempt any Four of following. **[12]**

a) Define Decoction, Infusion and Maceration with suitable examples.

b) Explain Principle of Column Chromatography with suitable diagram.

c) Emphasize on Isolation of Resveratrol.

d) Describe Advantages and Disadvantages of Supercritical fluid Extraction.

e) Draw the Structures of the following.

i) Caffeine

ii) Atropine

iii) Piperine

f) Elaborate Merits and Demerits of Soxhlet Extraction.

g) Describe isolation of Artemisinin.

Q3) Write a Note on Any Two. **[8]**

a) Differences between HPLC and HPTLC.

b) Microwave Assisted Extraction.

c) Counter Current Extraction.

d) Extraction of Rose oil by Enfleurage.

P.T.O.

SECTION - II

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

a) Describe in detailed principle, procedure & significance of following parameters as WHO.
   i) Total Tannin content determination.
   ii) Foaming Index.

b) Elaborate in detailed requirements of 'Good practices for pharmaceutical quality control laboratories as per WHO.

Q5) Attempt any Four of following. **[12]**

a) Give principle, Procedure and significance involve in arsenic & toxic metals determination.

b) Give importance of proximate phytochemical investigation.

c) Explain principle, procedure & significance of extractable matter as per WHO.

d) Give quality control parameters for microorganism determination.

e) Define bitterness value. Give its significance in herbal drug analysis.

f) Describe in detailed moisture content determination (as per WHO)

g) Add and exhaustive note on need of identity and purity in herbal drug analysis.

Q6) Attempt any Two **[8]**

a) Explain in detailed DNA fingerprinting

b) Define adulteration. Put some examples of direct and indirect adulteration.

c) Give principle & procedure of sampling.

d) Make a note on pesticide residue determination.

Total No. of Questions : 6]

SEAT No. :

P3051

[Total No. of Pages : 2

[5452]-1046

T.Y.B. (Pharmacy)

3.5.6. (T)PHARMACEUTICAL BUSINESS MANAGEMENT & DISASTER MANAGEMENT

(Credit 2015 Pattern) (Semester - V)

Time :3 Hours] *[Max. Marks : 60*

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 book.***

SECTION - I

Q1) Give definition, need for management and functions of management. Write functions and responsibilities of a manager. **[10]**

OR

Give concepts and purpose of control techniques. Explain budgetary and non-budgetary control, break even analysis and network techniques. **[10]**

Q2) Answer the following (any four) **[12]**

a) Important steps in planning
b) Inventory control.
c) Basic principles of organization
d) Types of decisions
e) Management information system
f) Objectives and principles of purchasing.
g) Types of hospitals.

Q3) Write short Note on (Any Two) **[8]**

a) Channels of distribution.
b) Decision making process.
c) Management by objectives.
d) Role of drug store and hospitals related to patient care management.

P.T.O.

SECTION - II

Q4) Give definition, importance, functions, Process, forms and types of communication. **[10]**

OR

Give methods, analysis, advantages and limitations sales forecasting. **[10]**

Q5) Answer the following (any four) **[12]**

a) Maslow's theory
b) Theory X & Y.
c) Managerial Grid
d) Interview techniques
e) Types of disasters.
f) Types of prices.
g) Medical representative.

Q6) Write short note on (any two) **[8]**

a) The Disaster management cycle
b) Advertising
c) Sales promotion
d) Performance appraisal

Total No. of Questions : 6]

SEAT No. :

P3052

[Total No. of Pages : 2

[5452]-1047
T.Y. B. PHARMACY
ACTIVE PHARMACEUTICAL INGREDIENT TECHNOLOGY
(2015 Pattern) (Semester - V)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

1) ***All Questions are Compulsory.***
2) ***Answer to the two section should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherver necessary.***
4) ***figures to the rigth indicate full marks.***

SECTION-I

Q1) Discuss factors affecting Beechamp reduction. Discuss types of reducing agents used in amination by reduction. **[10]**

OR

What is Hydrolysis?Discuss its types.Discuss in detail mfg. Process of dextrose. **[10]**

Q2) Attempt any four **[12]**

a) Give details of dryers used in API mfg unit.

b) Give details of chemical reaction system with emphasis on:
i) Reaction of liquid with solid ii) Reaction of liquid with Gas.

c) Give the characteristics of ideal reagents for API synthesis.

d) Give the chemical and physical factors affecting the chemical process.

e) Distinguish between unit process and unit operation.

f) Describe unit process of oxidation? Give details of oxidative reactions.

g) Explain spent acid strength or dehydrating value of sulphuric acid (D.V.S.).

Q3) Attempt any two. **[8]**

a) Give industrial mfg. Process and flow chart for Ranitidne.

b) Give details of unit process of Nitration.

c) Give indusrial mfg. process and flow chart of amlodipine.

d) Write short note on condensers used in API mfg unit.

P.T.O.

SECTION-II

Q4) Explain effect of process variables on yield and quality of products. **[10]**

OR

Enlist and discuss suitable strategies for selection of most appropriate route and scale up of API. **[10]**

Q5) Attempt any four. **[12]**

a) Give details of tools for purifying the product in API synthesis.

b) Describe in detail the characteristics of expedient route.

c) Give in detail the US FDA Guideline on Chirality.

d) Enlist of methods of identifying polymorphism and discuss any one in detail.

e) What is MSDS? describe its contents.

f) What is work up in API manufacturing.

g) Discuss selection of solvents in API synthesis process.

Q6) Write short note on (Any two). **[8]**

a) Specific Guidance for API mfg.by cell Culture/ Fermentation as per Q7 Guideline.

b) Green Chemistry approach in API synthesis.

c) Resolution of Racemic mixture.

d) Industrial manufacturing of amoxycillin trihydrate and its flow chart.

Total No. of Questions : 6]

SEAT No. :

P3053

[Total No. of Pages :2

[5452] - 1051

T.Y. B. Pharmacy

3.6.1. - (T) : INDUSTRIAL PHARMACY-II

(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

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

a) What is structured vehicle? How does it contribute to suspension stability?

b) Explain rheology of suspensions. Give an account of viscosity building agents.

Q2) Answer the following (Any Four). **[12]**

a) Describe effect of electrolytes on stability of lyophobic suspensions.

b) Define and differentiate flocculated and deflocculated suspensions.

c) Describe role of particle size and zeta potential in suspension stability. Explain what is scale up operations? Enlist various requirements of scale up.

d) Describe use of baffles in preventing vortex. What should be proportion of surfactant A (HLB 14) and surfactant B (HLB 4) to get required HLB of 10.

e) What are flocculating agents? How to they work?

Q3) Write Short Note on (Any two) **[8]**

a) What are the mechanisms for stabilization of dispersions.

b) Microemulsion.

c) Excipients used in suspension.

d) Layout for suspension formulation unit.

P.T.O.

SECTION - II

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

a) Discuss the physiological and physicochemical factors affecting formulation of semisolid dosage form.

b) Discuss the layout and designing of manufacturing facility for semisolid as per schedule M.

Q5) Answer the following (Any four). **[12]**

a) Describe Draize test for preclinical screening of semisolids.

b) Discuss formulation, manufacturing and evaluation of creams.

c) Write a note on absorption bases. Define penetration enhancer and differentiate between physical and chemical penetration enchancer.

d) Explain *in-vitro* evaluation tests for Semisolids.

e) Discuss any three gelling agents.

f) Discuss formulation, manufacturing and evaluation of Pastes.

Q6) Write Short Note on (Any two). **[8]**

a) Equipments used for semisolids.

b) Percutaneous absorption.

c) Raw materials used in semisolid preparations.

d) Anatomy and physiology of skin.

Total No. of Questions : 6]

SEAT No. :

P3054

[Total No. of Pages : 2

[5452]-1052

Third Year B. Pharmacy

PHARMACEUTICAL ANALYSIS - IV

(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks : 60*

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 basic theory and types of chromatography. Explain the rate and plate theory. **[10]**

OR

Discuss various components of HPTLC instrument. Write the applications of HPTLC system.

Q2) Attempt any four of the following: **[12]**

a) Write principle of Electrophoresis.

b) Discuss efficiency of column.

c) Explain 2D TLC.

d) Discuss the column packing techniques.

e) Write the methods for TLC plate preparation.

f) Discuss various types of developments in electrophoresis.

g) Explain the factors influencing HPTLC Separation.

Q3) Write a note on any two of the following: **[8]**

a) Stationary phases used in TLC.

b) Instrumentation of Electrophoresis.

c) Difference between TLC and HPTLC.

d) Paper chromatography.

P.T.O.

SECTION-II

Q4) Discuss in details of instrumentation of TGA. **[10]**

OR

Explain how cell selection play important role in thermal science? Also write about differential thermal analysis.

Q5) Attempt any four of the following: **[12]**

a) Spectrophotometer Qualification.

b) Write about Linearity and range.

c) Interpretation of DSC thermograms.

d) Different types of assays.

e) Isotopic dilution method.

f) Explain various methods for determination of LOD and LOQ.

g) Explain role of ITC technique in ligand binding studies.

Q6) Write a note on any two of the following: **[8]**

a) X-ray gas filled transducer.

b) Applications of radiochemical methods.

c) Polymorphism.

d) Neutron activation process.

Total No. of Questions : 6]

SEAT No. :

P3055

[Total No. of Pages :2

[5452] - 1053

T.Y. B. Pharm.

MEDICINAL CHEMISTRY - II

(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

Q1) Classify anticonvulsant agent with one structure of drug from each class. Add a note on barbiturates. **[10]**

OR

Discuss SAR, MOA and uses of benzodiazepines. **[10]**

Q2) Answer Any FOUR. **[12]**

a) Classify general anaesthetics with suitable example and structure from each class.

b) Draw synthesis of diazepam.

c) Write IUPAC name and structure of mepivacaine and carbamazepine.

d) Write metabolic pathway for tolbutamide.

e) Classify sedative and hypnotics with suitable example from each class.

f) Outline the synthesis of thiopental sodium.

g) Write SAR of hadantoin.

Q3) Answer any TWO. **[8]**

a) Discuss drug metabolism by oxidation reactions.

b) Explain important structural features and mode of action of sodium valproate.

c) Discuss local anaesthetics containing amide linkage.

d) Write a note on oxazolidinediones as anticonvulsant agent.

P.T.O.

SECTION - II

Q4) What are CNS stimulants? Classify them with examples. Give MoA and Add synthesis of Phentermine. **[10]**

OR

What is psychosis? What are Antipsychotic agents? Classify them with examples. **[10]**

Q5) Answer any Four. **[12]**

a) Write a note on Anxiolytic benzodiazepines.

b) Give synthesis of Amitriptyline.

c) Give synthesis of Fluoxetine.

d) Write a brief note on analeptic drugs.

e) Add a brief note on Hallucinogens.

f) Give SAR of Butyrophenone.

g) Add a note on coagulating agents.

Q6) Write Notes on any Two. **[8]**

a) Psychotropic agents.

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

c) MAO Inhibitors.

d) Rauwolfia alkaloids.

Total No. of Questions : 6]

SEAT No. :

P3056

[Total No. of Pages : 2

[5452]-1054

T.Y. B. Pharm.

PHARMACOLOGY - III

(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION - I

Q1) Classify General Anesthetic drugs with examples. Explain in detail various stages of General Anesthesia. Discuss the ideal properties of a General Anesthetic agent. **[10]**

OR

Classify Hypnotics and Sedatives. Explain the pharmacological actions, adverse effects & therapeutic uses of Barbiturates.

Q2) Answer the following (Any four) **[12]**

a) Classify Antianxiety drugs. Give their therapeutic uses.

b) Define the following

i) Hypnosis

ii) Sedation

iii) General Anaesthesia

c) What do you mean by Preanesthetic medication?

d) Classify antidepressant drugs with examples.

e) Explain Pharmacological actions of Alcohol.

f) Discuss Mode of action of Local Anesthetics.

g) Classify types of Epilepsies.

P.T.O.

Q3) Write notes on (any two) **[8]**

a) Barbiturate poisoning

b) Antipsychotics

c) Neuroleptanalgesia

d) Drugs used in the treatment of epilepsy

SECTION - II

Q4) Classify anti-ulcer drugs with examples. Explain causes and pharmacotherapy of peptic ulcer. **[10]**

OR

Discuss Opioid receptors. Explain the Pharmacological effects, adverse effects & therapeutic uses of Morphine.

Q5) Answer the following (any four) **[12]**

a) What do you mean by Salicylate poisoning?

b) Define the following

i) Parkinsonism

ii) Analgesics

iii) Algesia

c) Classify opioid analgesics.

d) Discuss detail pharmacology of levodopa.

e) Explain the therapeutic uses of Aspirin.

f) Discuss role of peripheral dopa decarboxylase inhibitors.

g) Discusss pharmacotherapy of rheumatoid arthritis.

Q6) Write notes on (any two) **[8]**

a) Gout

b) Alzheimer's disease

c) COX-2 Inhibitors

d) Laxatives and Purgatives

♦ ♦ ♦

Total No. of Questions : 6]

SEAT No. :

P3057

[Total No. of Pages :2

[5452] - 1055

T.Y. B. Pharm.

NATURAL PRODUCT CHEMISTRY

(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks :60*

Instructions to the candidates:

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

SECTION - I

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

a) Discuss in detail marine drugs used in Cancer and cardiovascular diseases.

b) Describe and classify natural colours and dyes. Write chemistry and uses of Annato and Indigo. Give suitable method of preparation of dye from Indigo.

Q2) Attempt any four of the following: **[12]**

a) Diversity and Chirality are known strategies applied for new drug discovery from natural product. Explain.

b) Describe in brief isolated organ methods used in biosynthetic study.

c) What are mordant dyes? Explain with examples.

d) Comment on cochineal.

e) Explain chemistry and application of Turmeric.

f) Write Biological source, Chemical constituents and uses of Katemfe.

g) Write a note on Gums and latex.

Q3) Attempt any TWO. **[8]**

a) Give contribution of natural products in new drug discovery.

b) Explain difference between nutritive and non-nutritive sweeteners with examples.

c) Write a note on natural polymers.

d) Give chemistry and applications of colours and dyes obtain from Heena and Beet.

P.T.O.

SECTION - II

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

a) What are biofuels? Give its significance. Describe methods of preparation of bioethanol using different available raw material.

b) Comment on type, functions and applications of natural skin permeation enhancers. Explain with suitable examples of plants and include chemistry of appropriate constituents.

Q5) Attempt any four of the following: **[12]**

a) Explain the role of Turmeric in skin cosmetics.

b) What are approaches for enchancement of absorption of drugs in the body?

c) Write role of Piperine in Bioavailability enhancement.

d) Write Biological source, Chemical constituents and uses of Ginko.

e) Write a note on Rotenone.

f) What is zein? Give its applications.

g) Give importance of Resveratrol as herbal dietary supplement.

Q6) Attempt any Two. **[8]**

a) Write a note on natural pesticides.

b) What are different mechanisms of radiation protection agents from natural products? Give suitable examples.

c) What are hurdles of bioenhancers? Describe solution to overcome limitation using natural bioavailability enhancers with suitable examples.

d) What are types of wound? Explain role of Hyaluronic acid in management of wound.

♦ ♦ ♦

Total No. of Questions:6]

SEAT No. :

P3058

[Total No. of Pages : 2

[5452]-1056
T.Y. B. Pharmacy
BIO ORGANIC CHEMISTRY & DRUG DESIGN
(2015 Pattern) (Semester - VI)

Time : 3 Hours] *[Max. Marks : 60*

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) Classify enzymes with examples. Explain in detail role of DHFR in human and bacteria add a note on DHFR inhibitors. **[10]**

OR

What is molecular adaptation? Explain the proximity effect with examples.

Q2) Attempt any four of the following: **[12]**

a) Explain biochemical role of DOPA carboxylase and its relevance in drug design.

b) Write a note on molecular recognition

c) Write a note on DNA strand breaking

d) Explain the structure of GABA A receptor.

e) Write a note on targets in protein synthesis

f) Write a note on COX- I and COX-2 as drug target

g) Explain the mechanism of nitrogen mustard as alky lating agents

Q3) Attempt any two of the following: **[8]**

a) Explain the physiological role of MAO. Give detailed note on its inhibitors.

b) Explain the structure of acetylcholinesterase enzyme. Add a note on anti-cholinesterase drugs.

c) Write a note on DNA and RNA as drug target. Explain mechanism of intercalation.

d) Explain the structure and add note on tyrosine kinase inhibitors.

P.T.O.

SECTION - II

Q4) Discuss various QSAR approaches in drug design and give detailed account of 3D-QSAR approach. **[10]**

OR

How molecular modeling is useful in new drug discovery and development?

Q5) Attempt any four of the following: **[12]**

a) Write a note on 2D-QSAR

b) Give names of quantum mechanical calculation methods. Explain any one in detail.

c) Explain Pharmacophore modeling

d) Explain Hansch Analysis

e) Write about programs used in molecular Docking.

f) Give applications of Prodrug

g) Write a note on Drug Discovery

Q6) Attempt any two of the following: **[8]**

a) Explain lead identification methods

b) Explain carrier-linked prodrugs

c) Compare the traditional approaches of drug design with rational approaches. Give the advantages and disadvantages of QSAR.

d) Write about success stories of SBDD

Total No. of Questions : 6]

SEAT No. :

P4346

[Total No. of Pages : 2

[5452]-1057A

Third Year B. Pharmacy (Semester - VI)

PHARMACEUTICAL BIOTECHNOLOGY

(2015 Pattern)

Time : 3 Hours] *[Max. Marks : 60*

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 is isolation of DNA? Explain in detail various blotting techniques. **[10]**

OR

Discuss in detail different methods of gene transfer.

Q2) Answer the following (Any 4) **[12]**

a) Discuss the principle of gel electrophoresis.

b) Draw a well labeled diagram of shuttle vector.

c) Write about site directed mutagenesis.

d) Discuss role of alkaline phosphatase in genetic engineering.

e) Draw structural features of DNA ligase.

f) Write the applications of biotechnology.

g) Explain plasmid vector pBR322

Q3) Write short note on (Any 2) **[8]**

a) Expression vectors

b) Restriction endonuclease

c) Isolation of DNA

d) DNA fingerprinting

P.T.O.

SECTION - II

Q4) Describe in detail production of any one antibiotic by fermentation technology. **[10]**

OR

What is enzyme immobilization? Describe methods of immobilization of enzymes along with its applications.

Q5) Answer the following (Any 5) **[12]**

a) Define :

i) Cryopreservation

ii) Germ plasm storage

iii) Transgenic animals

b) Write a note on hybridoma technology.

c) Draw neat and labeled diagram of typical fermenter.

d) Give structural aspects of airlift fermenter.

e) Discuss in brief production of interferon.

f) Write applications of transgenic animals.

g) Give method of production of vitamin B_{12}.

Q6) Write short note on (Any 2) **[8]**

a) Monoclonal antibodies

b) Human gene therapy

c) Applications of transgenic animals.

d) Down stream processing

Total No. of Questions : 6]

SEAT No. :

P3691

[Total No. of Pages : 2

[5452]-1061

F.Y.B. Pharmacy (Semester - VII)

STERILE PRODUCTS

(2015 Pattern)

Time : 3 Hours] *[Max. Marks : 60*

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 complete account of environmental control zones in sterile parenteral manufacturing facility. Add a note on HVAC System. **[10]**

OR

Explain in detail types and formulation of SVP's.

Q2) Attempt any four. **[12]**

a) Describe S. C. route of drug administration.

b) Describe significance of Sterility.

c) Write in brief various routes of Parenteral drug administration.

d) Write a note on Crushed glass test.

e) Describe the selection criteria for containers used in Parenterals.

f) How type I glass is differentiated from type II glass as per IP?

g) Describe in brief Clean rooms.

Q3) Attempt any two. **[8]**

a) Discuss solubility and hygroscopicity as an important parameter in preformulation of Parenterals.

b) Explain in detail Non aqueous vehicles used in Parenterals.

c) Discuss the selection criteria for additives used in SVP's and add a note on Antioxidants.

d) Describe evaluation tests for plastic packaging material.

P.T.O.

SECTION - II

Q4) What is Lyophilization ? Explain steps involved in Lyophilization process. **[10]**

OR

Write ideal properties and explain different types of Plasma Volume Expanders

Q5) Attempt any four. **[12]**

a) Write manufacturing process of LVP's.

b) Explain absorbent foam dressing.

c) State the ideal properties of contact lens care product.

d) Discuss principle of freeze drying process.

e) Explain in detail fractionation of plasma.

f) Write general requirements for ophthalmic products.

g) Write the importance and types of surgical bandages .

Q6) Write note on (any two) **[8]**

a) Whole human blood.

b) Stabilization of LVP's.

c) Cryoprotectants.

d) Quality Control test for Surgical Products.

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Total No. of Questions : 6]

SEAT No. :

P3060

[Total No. of Pages : 2

[5452]-1062
Final Year B. Pharmacy
PHARMACEUTICAL ANALYSIS - V
(2015 Pattern) (Semester - VII)

Time : 3 Hours] *[Max. Marks : 60*

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 FTIR theory, instrumentation and sample handling. **[10]**

OR

Describe principle, various types, advantages and applications of HPLC.

Q2) Attempt any four of the following: **[12]**

a) Compare Raman and IR techniques.

b) What are the advantages of NIR techniques?

c) Compare reverse and normal phase HPLC techniques.

d) Explain applications of SEM.

e) Explain importance of stretching vibrations in IR.

f) Explain IR spectral features of amines and ketones.

g) Explain IR gas sample handling.

Q3) Write a note on any two of the following : **[8]**

a) Analytical HPLC column.

b) Importance and methods of HPLC mobile phase treatment.

c) Theory of Raman techniques.

d) TEM

P.T.O.

SECTION - II

Q4) Describe instrumentation, working and applications of flash chromatography. **[10]**

OR

Classify gas chromatography detectors and explain working, principle and unique characteristics of any two GC detectors form different category.

Q5) Attempt any four of the following : **[12]**

a) Write principle of flash chromatography.

b) Classify HPLC detectors and explained any one in detail.

c) How derivatization is carried out in GC?

d) Explain advantages of super critical fluid chromatography.

e) What are the advantages of gas chromatography?

f) Discuss principle of super critical fluid chromatography.

g) Compare super critical fluid chromatography and HPLC.

Q6) Write a note on any two of the following : **[8]**

a) Instrumentation of super critical fluid chromatography

b) Temperature programming in GC?

c) Van Deemter equation.

d) Advantages of Super critical fluid extraction technique over GC.

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Total No. of Questions : 6]

SEAT No. :

P3061

[Total No. of Pages : 2

[5452]-1063
F.Y. B. (Pharmacy)
473:MEDICINAL CHEMISTRY - III
(2015 Pattern) (Semester - VII)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

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

a) Discuss chemistry, SAR and mode of action of aminoglycoside antibiotics.

b) Define antibiotics. Classify with examples. Explain the chemistry and SAR of cephalosporins.

Q2) Attempt any Four: **[12]**

a) Explain how structural modification of penicillins give orally active penicillins.

b) Discuss chemistry of streptomycin.

c) Give structure, IUPAC name and uses of any three drugs from class cephalosporins.

d) Explain the mechanism of action of β- lactamase inhibitors.

e) Write a short note on cell cycle specific and non-cell specific anticancer agents.

f) Classify alkylating agents with structural examples.

g) Write a short note on penam and monobactum antibiotics.

Q3) Attempt any Two: **[8]**

a) Write a short note on plant origin products used as anticancer agents.

b) Give the IUPAC name, mechanism of action and scheme of synthesis of methotrexate.

c) Write a short note on development of acid-base stable tetracyclines.

d) Write a short note anticancer monoclonal antibodies.

P.T.O.

SECTION - II

Q4) Classify antimalarial agents based on life cycle of malaria parasites with examples. Discuss the chemistry, SAR and MOA of amino quinolines. **[10]**

OR

Classify Anti-HIV agents based on life cycle of HIV with examples. Discuss the SAR, MOA of Reverse Transcriptase inhibitors. **[10]**

Q5) Solve any four **[12]**

a) Classify anthelmintics with their MOA and suitable examples.
b) Outline the synthesis of Ciprofloxacin.
c) Discuss in brief about drugs used as antiamoebics agents.
d) Discuss antileprotic agents with their MOA.
e) Give the Structure, MOA and therapeutic use of
   i) Griseofulvin ii) Ethambutol
f) Outline the synthesis of Albendazole.
g) Discuss chemistry and MOA of Polyene antibiotics.

Q6) Write Short Notes on (Any Two): **[8]**

a) Fluoroquinolones
b) Antituberculosis agents
c) Protease Inhibitors
d) Antifungal agents

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Total No. of Questions :6]

SEAT No. : ____

P3062

[Total No. of Pages : 2

[5452]-1064
F. Y.B. Pharmacy
PHARMACOLOGY - IV
(2015 Pattern) (Semester-VII)

Time : 3 Hours] ***[Max. Marks :*** 60

Instructions to the candidates:

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

SECTION - I

Q1) Classify antimalarial agents with example. Explain in detail mode of action, pharmacological actions, therapeutic uses and adverse effects of quinine, chloroquine and proguanil. **[10]**

OR

Classify antibiotics according to the mechanism of action. Explain in detail mode of action, therapeutic uses and adverse effects of Amoxicillin. **[10]**

Q2) SOVE ANY FOUR. **[12]**

a) Explain mechanism of action and therapeutic uses of fluoroquinolones.
b) Give rationale behind combination of pyridoxine with streptomycin.
c) Classify antiretroviral agents with example.
d) Explain mechanism of action and therapeutic uses of chloramphenicol.
e) What is Log Cell Kill hypothesis?
f) Explain mechanism of action and therapeutic uses of metronidazole.
g) Classify antifungal agents with example.

Q3) SOLVE ANY TWO : **[8]**

a) Mechanisms for development of drug resistance.
b) DOT therapy
c) Antimetabolites used in cancer therapy
d) Dapsone

P.T.O.

SECTION - II

Q4) Classify types of diabetes. Explain pharmacotherapy of diabetes mellitus. **[10]**

OR

Enlist hormones secreted by pituitary gland. Explain pharmacology of hormones secreted by posterior pituitary gland. **[10]**

Q5) SOLVE ANY FOUR. **[12]**

a) Discuss in brief about corticosteroid antagonists.

b) Define dwarfism, giangtism, cretinism.

c) Explain mechanism of action and therapeutic uses of mineralocorticoids.

d) Discuss role of tocolytics.

e) Explain biosynthesis of thyroid hormones.

f) Explain therapeutic uses and adverse effects of progestins.

g) Explain mechanism of action and therapeutic uses of parathyroid hormones.

Q6) SOLVE ANY TWO. **[8]**

a) Glucagon

b) Therapeutic uses of glucocorticoids

c) antithyroid agents

d) Androgens

Total No. of Questions : 6]

SEAT No. :

P3063

[Total No. of Pages : 2

[5452]-1065

Final Year B. Pharmacy

4.7.5 - NATURAL DRUG TECHNOLOGY

(2015 Pattern) (Semester - VII)

Time :3 Hours] *[Max. Marks : 60*

Instructions to the candidates :

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

SECTION - I

Q1) Explain the mechanism of antioxidant drugs. Write in detail about pharmacological screening of antioxidants by DPPH method. **[10]**

OR

Explain Ayurveda system of Medicine. Give the theory and basic concepts and add a brief note on diagnosis and treatment from ayurveda system of medicine. **[10]**

Q2) Answer the following.(Any Four) **[12]**

a) How anticancer activity of drug is evaluated by SRB assay?
b) Write note on "AYUSH".
c) Write short note on Bhasma.
d) Give factors influencing the level of plant metabolites.
e) Discuss the deterioration of crude drugs due to
   i) Moisture
   ii) Temperature
f) Write note on 'Homeopathy System of Medicine'.
g) What are types of tissue cultures?

Q3) Answer the following. (Any two) **[8]**

a) Discuss WHO guidelines on 'Good agricultural' and collection practices' (GACP)
b) Give the preparation method for Arishta.
c) Classify Ayurvedic dosage forms with example for each.
d) Explain in brief diagnosis and treatment in Ayurveda.

P.T.O.

SECTION - II

Q4) Explain importance of novel drug delivery system in herbal medicines. Explain methods of preparation of Liposome and phytosomes. **[10]**

OR

Explain in detail structural elucidation of Morphine **[10]**

Q5) Answer the following. (Any Four) **[12]**

a) Give classification of Herbal cosmetics.
b) Explain sunscreens.
c) Give principle & applications of UV spectroscopy.
d) Give physical methods for structural elucidation of Natural Products.
e) Give general method of preparation of herbal shampoo
f) Classify different types of herbal shampoo
g) Write a note on evaluation of skin cosmetics.

Q6) Answer the following (Any two) **[8]**

a) Write short note on Herbal Hair care Products.
b) Discuss in detail novel drug delivery system for herbal drugs.
c) Discuss in detail the herbs used in skin and hair care cosmetics.
d) Give Principle and applications of IR Spectroscopy.

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Total No. of Questions : 6]

SEAT No. :

P3064

[Total No. of Pages : 2

[5452]-1067
F.Y. B. PHARMACY
4.7.7(T) PHARMACEUTICAL JURISPRUDENCE
(2015 Pattern) (Semester - VII)

Time : 3 Hours] *[Max. Marks : 60*

Instructions to the candidates:

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

SECTION-I

Q1) Give the constitution, Functions & working of Pharmacy Council of India according to pharmacy Act,1948. **[10]**

OR

Give the constitution and functions of Drugs Technical Advisory Board (DTAB) & Drug Consultative Committee (DCC) as per Drugs and Cosmetics Act & Rules.

Q2) Answer the following (any 4) **[12]**

a) Differentiate between State Pharmacy Council & Joint State Pharmacy Council.
b) Define: i) Schedule- Y ii) Schedule- G.
c) Explain the formula to calculate the retail price of a formulation as per DPCO.
d) Define "Magic Remedies" under Drugs & Magic Remedies Act,1954.
e) Explain any two offences and its corresponding penalties applicable for import of drugs under the Drugs & Cosmetics Act.
f) Give the objective of Food Safety and Standards Act 2011.
g) Give the objective of Prevention of Cruelty to Animal Act,1960.

Q3) Write short note on (Any 2) **[8]**

a) Loan Licenses.
b) Illicit traffic under Narcotic Drugs & Psychotropic substances Act,1985.
c) Constitution and functions of Central consumer protection councils as per the Consumer Protection act,1986.
d) Powers & duties of Drug Inspector appointed under Drugs & Cosmetics Act.

P.T.O.

SECTION-II

Q4) Explain various types of Intellectual Properties. Add a note on Product & Process patent. **[10]**

OR

What are the criteria of patenting an invention? which type of inventions are not patentable as per Indian patent Act-1970.

Q5) Answer the followig (any 4). **[12]**

a) What is Hatch Waxman Act? Explain its advantage to the generic pharma companies.

b) What are exclusive marketing rights?

c) Explain Patent Infringement with one example.

d) What is oppositions to the grant of patent? Explain.

e) Write short note on-Orange Book.

f) What are the salient features of Central Drugs Standard Control Organization (CDSCO).

g) State the content of ANDA filling.

Q6) Write short note on (Any 2). **[8]**

a) Compulsory Licensing.

b) What is the significance of para, I II III and IV Certification.

c) Geographical Indications.

d) T. G. A.

Total No. of Questions : 3]

SEAT No. :

P3705

[Total No. of Pages : 4

[5452]-2001

F.Y. B. Pharmacy (Semester - I)

HUMAN ANATOMY AND PHYSIOLOGY - I

(2018 Pattern)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

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

Q1) Answer all the questions (MCQs) (one mark each) **[20 × 1 = 20]**

i) Left atrioventricular aperture is guarded by _____.

a) Tricuspid valve b) Eustachian tube

c) Bicuspid valve d) Semilunar valve

ii) Atrioventricular node is located in _____.

a) Left atrium b) Left ventricle

c) Right Atrium d) Right ventricle

iii) QRS is related to

a) Atrial contraction b) Ventricular contraction

c) Atrial relaxation d) Ventricular relaxation

iv) The deposition of fatty substance in the lining of arteries is called _____.

a) Arteriosclerosis b) Atherosclerosis

c) Angina pectoris d) Angiology

v) When oxygen-rich blood leaves the lungs for the heart, it enters the heart through the pulmonary vein into the _____.

a) left ventricle b) right atrium

c) right ventricle d) left atrium

P.T.O.

vi) The blood vessel that carries deoxygenated blood from the body to the right side of the heart is called the _____.

a) Pulmonary vein b) Aorta

c) Pulmonary artery d) Vena cava

vii) A spleen nodule contains _____.

a) The factory that produces platelets

b) Reservoir of glucose stored as glycogen

c) Red pulp and white pulp

d) Hormone producing islets

viii) A condition in which the body internal environment remains relatively constant with physiological limit i.e. equilibrium is called as _____.

a) Erythropoiesis b) Homeostasis

c) Hemostasis d) Metastasis

ix) The net movement of solvent through selectively permeable membrane from area of higher concentration to area of lower concentration is called as _____?

a) Diffusion b) Osmosis

c) Facilitated diffusion d) Active Transport

x) The tissue that lines the hollow organ of the human body is called as _____.

a) Epithelial tissue b) Muscle tissue

c) Connective tissue d) Nervous tissue

xi) _____ muscle is voluntary in nature.

a) Cardiac muscle b) Smooth muscle

c) Skeletal muscle d) None of the above

xii) This is the (4.5 – 6.5 millions/cumm of blood) normal count of _____.

a) RBC b) WBC

c) Platelets d) None of the above

xiii) What type of antigen are present on the RBC of a person having blood group 'O'

a) Antigen A
b) Antigen B
c) Antigen AB
d) No Antigen

xiv) The superficial layer of the epidermis from which cells are continuously shed is called the _____.

a) stratum granulosum
b) stratum spinosum
c) stratum corneum
d) stratum basale

xv) Example of ball and socket joint is _____.

a) Vertebral disc joint
b) Knee and Elbow joint
c) Shoulder and hip joint
d) Saddle joint

xvi) Which of the following is not regulated by a negative feedback mechanism?

a) Blood O_2 levels
b) Child birth
c) Blood pressure
d) Body temperature

xvii) The Elbow is described as being _____ to the wrist.

a) Proximal
b) Lateral
c) Anterior
d) Distal

xviii) The sympathetic nervous system is also known as _____.

a) Rest and digest
b) Craniosacral division of ANS
c) Somatic nervous system
d) Fight or Flight

xix) Blood is a _____ tissue composed of liquid portion called plasma and a cellular portion consisting of various cells and cell fragments.

a) Epithelial
b) Connective
c) Nervous
d) Muscle

xx) In the functional classification of joints, a freely movable joint is called as _____.

a) Synarthrosis
b) Amphiarthrosis
c) Syndesmosis
d) Diarthrosis

Q2) Long Answers (Any 2 out of 3) **[2 × 10 = 20]**

a) Explain in detail transport mechanisms of substances across the plasma membrane?

b) Draw a neat labelled diagram of interior of Heart and explain in detail Cardiac cycle?

c) Explain the Functions of Blood and explain in detail the Mechanism of Blood clotting?

Q3) Short Answers (Any 7 out of 9) **[7 × 5 = 35]**

a) Explain the levels of structural organization of Human body.

b) Explain with example Negative feedback mechanism.

c) Explain the Conduction system of Heart.

d) Explain the Anatomy and functions of Spleen.

e) Explain the ABO system of Blood.

f) Write a note on Epithelial tissue.

g) Describe the physiology of muscle contraction.

h) Explain various stages of cell division.

i) Explain the anatomy and physiology of the ear.

▽▽▽▽

Total No. of Questions : 3]

SEAT No. :

P3706

[Total No. of Pages : 4

[5452]-2002

First Year B. Pharmacy (Semester - I)

PHARMACEUTICAL ANALYSIS - I (BP102T)

(2018 Pattern)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

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

Q1) Multiple choice questions. **[20 × 1 = 20]**

i) As per pharmacopoeia the term "very soluble means"

a) Less than 1 part
b) From 1 to 10 parts
c) From 10 to 30 parts
d) From 30 to 100 parts

ii) As per pharmacopoeia the term "storage condition for cool "expressed as temperature in between

a) 2° to 8°C
b) 8° to 25°C
c) 25° to 40°C
d) None of above

iii) Normality is defined as

a) no of gram/Lit
b) no of gram equivalent/Lit
c) no of mole/Lit
d) no of equivalent/Lit

iv) Which of the following is not electrochemical method

a) Voltametry
b) Polarography
c) Coulometry
d) None of above

v) Relative standard deviation are also called as

a) Relative mean deviation
b) Average deviation
c) Coefficient of variance
d) None of above

P.T.O.

vi) Fifth edition of Indian Pharmacopoeia is published in

a) 1985 b) 1996

c) 2007 d) 2010

vii) Titration of hydrochloric acid and sodium hydrochloride is the type of

a) Strong acid and weak base b) Strong acid and strong base

c) Weak acid and strong base d) Weak acid and weak base

viii) Amphiprotic solvent have following property

a) Protogenic b) Protophilic

c) Both of above d) None of above

ix) pH range of Phenolphthalein is in between

a) 5.2 - 6.8 b) 6.2 - 7.6

c) 6.8 - 8.4 d) 8.3 - 10.00

x) Meaning of LOD is

a) Loss on drying b) Limit of detection

c) Both of above d) Lower limit of detection

xi) Which of the following is strongest reducing agent?

a) Al b) Cu

c) Zn d) Mg

xii) Which ion is having lowest molar conductivity?

a) Ag^{+} b) NO^{-}_{3}

c) OH^{-} d) CH_3COO^{-}

xiii) Bismuth is titrated in _____.

a) Alkaline solution b) Acidic Solution

c) Neutral Solution d) Alcoholic solution

xiv) Main advantage of DME is _____.

a) Surface is reproducible, smooth and continuously renewed

b) Capillary is very small in diameter

c) Mercury is very easily oxidized

d) It is used for analysis of reproducible or easily oxidizable substances

xv) Murexide is also known as _____.

a) Ammonium purpurate b) Ammonium tartarate

c) Ammonium succinate d) Ammonium nitrate

xvi) Sodium nitrate cannot be analyzed gravimetrically because _____.

a) All compounds containing sodium ions or nitrate ions are soluble

b) Sodium nitrate is insoluble

c) Sodium nitrate is an inert substance

d) The stability of sodium nitrate is very low

xvii) Indicator is not required in _____.

a) Mohr's method b) Gay Lussac's method

c) Volhad's method d) Fajan's method

xviii) Polarograph is _____.

a) Current Vs Volt graph b) DME

c) Instrument d) None of these

xix) Current used for measurement of conductance is _____

a) AC b) DC

c) Any one of these d) None of these

xx) Hydrogen electrode can be used as.

a) Reference b) Indicator

c) Both of above d) None of these

OR

Answer the following **[10 × 2 = 20]**

a) Explain qualitative and quantitative analysis

b) Write about Nesslers cylinder as per IP

c) Give the criteria for selection of primary standard solution

d) Starch indicator give blue color with iodine, justify it

e) Give the role of thioglycolic acid in limit test of Iron

f) Define ligand and Chelate.

g) Enlist metal EDTA complexes.

h) What are organic precipitants?

i) Explain effect of dilution on specific and molecular conductance.

j) Classify different electrodes used in potentiometry.

Q2) Answer the following (any two) **[2 × 10 = 20]**

a) What is impurity? Explain in detail about different sources of impurity.

b) Define limit test. Write principle, reaction, apparatus and procedure for limit test of Arsenic.

c) What are Redox titrations? Explain half reaction and Nernst equation? Discuss assay of ferrous sulphate by cerometry.

Q3) Answer the following (any seven) **[7 × 5 = 35]**

a) Explain Mohr's Method.

b) Write preparation and 0.1 N perchloric acid.

c) Explain different methods of minimizing errors.

d) Write a note on limit test of sulphate.

e) Give the construction and working of Conductivity cell?

f) Write a note on masking and demasking agents.

g) Give the difference between iodometry and iodimetry?

h) Write a note on indicator electrode.

i) Write principle, reaction and procedure for assay of sodium chloride by volhards method.

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SEAT No. :

P3707

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[5452]-2003

First Year B. Pharm (Semester - I)

PHARMACEUTICS - I

(2018 Pattern)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

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

Q1) Multiple choice questions (MCQ) select the proper choice. **[20 × 1 = 20]**

i) The doses of Vitamine are generally given as _____.

a) mg/kg body wt b) sex

c) I.U. d) divided dosage

ii) Dose of substance is given as 250mg four times a day on the basis of _____.

a) Weight b) BSA

c) Elimination time d) None

iii) _____ called as Legend prescription.

a) Modern b) NHS

c) CGHS d) Leaflet

iv) _____ part of prescription will give details of dose schedule.

a) Inscription b) Subscription

c) Sigma d) Superscription

v) Compounding & dispensing prescription are written in

a) English b) Latin

c) French d) German

P.T.O.

vi) Dose on BSA is based on _____.

a) Weight b) Hight & weight

c) Sex d) Age

vii) Dose is a _____ quantity.

a) Related b) Changed

c) Fixed d) Average

viii) $COCl_2$ test for identification of emulsion is based on _____.

a) Solubility b) M.P.

c) Moisture content d) Poly morph

ix) Alligation is a tech used for _____.

a) Proof spirit b) Dilution

c) % solutions d) Isotonicity

x) Drug-Drug interaction is _____ type of incompatibility.

a) Chemical b) Physical

c) Therapeutic d) Unintentional

xi) Two solids after mixing forms the Liquid is called _____.

a) Polymorph b) Solution

c) Eutectic d) Dispersion

xii) Creams are basically _____.

a) Emulsion b) Suspension

c) Lotions d) Liquids

xiii) As per B.P. standard 100° proof spirit is _____ % alcohol.

a) 57.1% v/v b) 50% v/v

c) 49.28% w/v d) 57.1% w/v

xiv) Effervescent granules contain slightly excess acid because _____.

a) It is pleasant b) Stable

c) Complete reaction d) Preservative

xv) Dusting powder is also called as _____ powder.

a) Divided b) Talcum

c) Effervescent d) Dredged

xvi) The dose of Ear drop/Nasal drop is given as _____.

a) Micro liters b) Mililiter

c) Drop d) None

xvii) Solutions having freezing point _____ is isotonic with tear secretion.

a) 0.52ºC b) 5.2ºC

c) 0.52ºF d) -0.52ºC

xviii) The powder which transfer the moisture to another powder is called _____.

a) Efflorescent b) Hygroscopic

c) Deliquescent d) Effervescent

xix) Lanoline is a _____ type of ointment base.

a) Absorption b) Oily

c) Oleogienous d) Aqueous

xx) The most stable form of coeabutter is _____.

a) Alfa b) Gamma

c) Bita d) Lamda

Q2) Answer any two. **[2 × 10 = 20]**

a) Define prescription. Explain its various parts with suitable example.

b) Explain various types of suppositories and its bases. Give the importance of displacement value in preparation with example.

c) Define and classify the Incompatibility. Explain physical incompatibility.

Q3) Solve any seven. **[7 × 5 = 35]**

a) Justify, "syrup I. P is more concentrated than syrup USP".

b) Classify emulsion by various ways. Explain aceasia emulsion.

c) Classify the suspending agents. Explain floculated & defloculated suspension.

d) Define ointment. Explain its various bases with example.

e) Highlight your views on carrier development of pharmacist in India.

f) In what proportion water is added to 75%, 60% & 50% POH. per magnet solution to convert 30% solution.

g) The dose of a drug is 40 mg for an adult. What will be the dose for 15 month old infant and 04 years child.

h) Explain various factor which affect the dose.

i) Justify the process for preparation of sodium citro tartarate effervescent granules.

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Total No. of Questions : 3]

SEAT No. :

P3708

[Total No. of Pages : 4

[5452]-2004

First year B. Pharmacy (Semester - I)

PHARMACEUTICAL INORGANIC CHEMISTRY

(2018 Pattern)

Time : 3 Hours] *[Max. Marks : 75*

Instructions to the candidates:

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

Q1) Multiple choice questions. **[20 × 1 = 20]**

i) Which one of the following limit test requires thioglycollic acid?

a) Chloride b) Sulfate

c) Arsenic d) Iron

ii) The equation for buffer capacity was originally proposed by which scientist?

a) Donald Van Slyke b) Arrhenius

c) Sorenson d) Feldman

iii) The particles containing two protons and two neutrons with atomic mass 4 and atomic number 2 are emitted from radiation source. Which type of particles are these?

a) Alpha Particles b) Beta Particles

c) Gamma Particles d) X-Rays

iv) Which of the following substances can be used to prepare Phosphate buffer for pharmaceutical applications?

a) Phosphoric acid and hydrochloric acid

b) Sodium dihydrogen phosphate and Disodium hydrogen phosphate

c) Sodium Phosphate and Phosphoric acid

d) Potassium phosphate and sodium phosphate

P.T.O.

v) Which of the following agent is not the constituent of ORS?

a) Sodium Chloride b) Potassium Chloride

c) Calcium Chloride d) Dextrose

vi) In which year seventh edition of Indian Pharmacopoeia was published?

a) 1996 b) 2007

c) 2010 d) 2014

vii) Which one of the following electrolyte is used in the treatment of physiological acid-base imbalance?

a) Dextrose b) Sodium Chloride

c) Calcium Chloride d) Sodium Acetate

viii) Which one of the following agent is used as dentifrice?

a) Potassium carbonate b) Sodium carbonate

c) Ammonium carbonate d) Calcium carbonate

ix) Which of the following antacid causes rebound acidity?

a) Sodium bicarbonate b) Aluminium hydroxide

c) Calcium carbonate d) Magnesium hydroxide

x) Which one of the following radioisotope is used as radiopharmaceutical?

a) Sodium Iodide - 110 b) Sodium Iodide -116

c) Sodium Iodide - 131 d) Sodium Iodide - 90

xi) NaF is used as -

a) Astringent b) Antibacterial

c) Desensitiazing agent d) Anti caries agent

xii) ORS is used in treatment of –

a) Anemia b) Diarrhea

c) Achlorhydria d) Acidity

xiii) Which one of the following modification in limit test for chloride on $KMnO_4$ is required?

a) Pretreatment with sodium hydroxide

b) Pretreatment with ethanol

c) Pretreatment with hydrogen peroxide

d) Pretreatment with hydrochloric acid

xiv) Which of the following titrant is required for Hydrogen peroxide assay?

a) Sodium chromate
b) Potassium permanganate
c) Potassium chromate
d) Potassium dichromate

xv) Which of following is not a saline cathartic?

a) Magnesium Hydroxide
b) Disodium Hydrogen Phosphate
c) Sodium Potassium Tartarate
d) Copper Sulphate

xvi) What will be the effect, if the red blood cells are suspended in a 2.0% NaCl solution?

a) Swelling of RBCs
b) Shrinkage of RBCs
c) No effect on RBCs
d) Bursting of RBCs

xvii) Which type of antidote Sodium nitrite is?

a) Chemical
b) Physiological
c) Mechanical
d) Universal

xviii) Identify the correct substance from following which is commonly known as "Green Vitriol" or "Green Copperas".

a) Copper Sulphate
b) Ferrous Sulphate
c) Calcium Sulphate
d) Zinc Sulphate

xix) Which one of the following parameter is required in calculation of half-life of radioactive material?

a) Equilibrium constant
b) Decay constant
c) Initial weight of radioactive material
d) pKa of radioactive material

xx) Copper sulfate is useful as -

a) Antidote
b) Antacid
c) Expectorant
d) Emetic

Q2) Solve any two of the following. **[2 × 10 = 20]**

a) What are antimicrobial agents? Give their classification, mode of actions & add a note on Hydrogen peroxide.

b) Define & classify antacids. Give the ideal properties of antacids. Add a note on combinations of antacids.

c) What are radiopharmaceuticals? Give the properties of alpha, beta particles and gamma radiations, Write the therapeutic and diagnostic applications of radioisotopes.

Q3) Solve any Seven of the following. **[7 × 5 = 35]**

a) Explain principle & reaction involved in limit test of Iron.

b) Write a note on preparation, properties & uses of Sodium Bicarbonate IP.

c) Explain the principle involved in limit test of Arsenic with reactions.

d) What is ORS? Explain its composition & uses.

e) What are expectorants? Write a note on preparation & properties of Ammonium chloride.

f) Explain properties, uses& official preparations of Calcium Gluconate.

g) Discuss the history of Indian Pharmacopoeia and write the importance of Pharmacopoeia.

h) Write a note on Sodium chloride & its official preparations.

i) Classify antidotes & add a note on Sodium thiosulfate.

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