Total No. of Questions : 6]

SEAT No. :

P1508

[Total No. of Pages : 2

[4949] - 11
First Year B. Pharmacy
1:1:1 - PHARMACEUTICS - I
(2015 Pattern) (Credit Pattern)

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

What is pharmaceutics? Write about scope of pharmacy.

OR

Write in detail about various pharmacopoeias.

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

a) Explain general principles of Ayurveda.

b) Give an account of classification of dosage forms.

c) Write about different sources of drugs with examples.

d) Define drug and new drug as per regulatory aspects.

e) Write note on routes of administration.

f) What is unani system of medicine.

g) Write about career apportunities in pharmacy.

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

a) Code of ethics

b) Quality assurance

c) Compendia in pharmacy

d) History of pharmacy

P.T.O.

SECTION - II

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

What are solutions? Explain methods of preparation of solutions and factors affecting rate of solutions.

OR

Define the concept of preformulation and formulation.

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

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

b) What are the methods used to increase solubility.

c) Describe antioxidants used in formulations.

d) Explain the application of physiochemical properties related to preformulations.

e) Explain in details colors and flavours with examples.

f) What are quality control tests for solutions.

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

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

a) Explain in short different excipients .

b) Elaborate types of water used in solutions.

c) Discuss formulation and evaluation of syrup.

d) Discuss factors affecting rate of solution.

Total No. of Questions : 6]

SEAT No. : ____

P1509

[Total No. of Pages : 2

[4949] - 12
F.Y. B. Pharmacy (Semester - I)
MODERN DISPENSING PRACTICES
(2015 Pattern) (Credit System)

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 prescription. Explain different types of prescription. Add a note on pricing of prescription. **[10]**

OR

a) Describe in detail documentation for stock and purchase records. **[7]**

b) How much of a 5% will be required to prepare 1000ml of a 1 in 500 solution. **[3]**

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

a) How many grams of $CaC1_2.2H_2O$ should be dissolved in water to make 200mL of a solution that contains 298mOsm/L. [Given: Molecular weight of $Cac1_2.2H_2O$=147]

b) What are different parts of prescription? Explain giving one example.

c) Calculate the strength of 44.8%o/p (over proof) and 75%u/p (upper proof).

d) Explain prescription filling.

e) Write a note on labeling of dispensed product.

f) In what proportions may a manufacturing pharmacist mix 20%,15%,5% and3% zinc oxide ointments to produce 10% ointment.

g) Discuss: Drug profile documentation.

P.T.O.

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

a) Explain patient medication record with suitable example.

b) Write short note on Responding to prescription.

c) Explain: Containers and closures used for dispensed products.

d) Discuss steps involved in dispensing.

SECTION - II

Q4) Explain therapeutic incompatibility and methods to remove it using suitable examples. **[10]**

OR

Explain in detail steps in patient counselling.

Q5) Solve any four out of seven. **[12]**

a) Explain Idiosyncracy

b) Explain 3 formulae for calculation of doses for infants and children.

c) Write in brief Reporting of ADR.

d) Explain counseling to be given by a pharmacist to a patient suffering from asthma.

e) What is the role of pharmacist in vaccination.

f) Write a note on rationale use of drugs.

g) Write precautions to be taken by a diabetic patient.

Q6) Solve any two out of four. **[8]**

a) Explain counselling to be given by a pharmacist to a patient suffering from tuberculosis.

b) Write a note on chemical incompatibility.

c) Explain any 4 factors affecting dose of a drug.

d) Explain the legal requirements for establishment and maintenance of drug stores.

Total No. of Questions : 6]

SEAT No. :

P1510

[Total No. of Pages : 2

[4949] - 13

First Year B. Pharmacy (Semester - I)

PHARMACEUTICAL INORGANIC CHEMISTRY (Theory)

(2015 Pattern) (Credit System)

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 brawn wherever necessary.***
4) ***Figure to the right indicate full marks.***

SECTION - I

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

a) Write in detail the different sources of impurities in pharmaceutical.

b) What is hardness of water? Discuss various methods used to remove temporary and permanent hardness of water.

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

a) Acidifying agent.

b) Short note on kaolin.

c) Titanium dioxide used as a topical agent.

d) Write in short oral rehydration salts.

e) Magnesium Hydroxide role as an Antacid.

f) Qualitative test for alkaline earth metals.

g) Principle and reaction involved in Limit test of Chloride I.P.

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

a) Write a note on official control test for water.

b) Write a note on saline cathartics.

c) Give an account on electrolyte used in combination therapy.

d) Discuss absorption, distribution, physiologically role and official compounds of Iron.

P.T.O.

SECTION - II

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

a) What are topical agents? Discuss mechanism action of antimicrobial agents. Discuss the properties, assay and uses of Hydrogen peroxide.

b) Write in detail on important inorganic gases use in pharmacy. Discuss in detail oxygen and Carbon dioxide.

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

a) Fluoride used as an anticaries agent.

b) Ammonium chloride used as an expectorant.

c) Write a short note on Cisplastin.

d) Helium used as a Inorganic gas.

e) Assay of boric acid I.P.

f) Zinc stearate as a topical protective.

g) Write a note on Nitrous oxide.

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

a) Radioopaque medium.

b) Write a note on antidotes.

c) Discuss in detail combination of antacid preparation.

d) Dentifrices.

Total No. of Questions : 6]

SEAT No. : ____

P1511

[Total No. of Pages : 2

[4949] - 14
F.Y. B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY - I
(2015 Pattern) (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 answer sheet.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the concept of aromatic electrophilic substitution? Write mechanism involved in Friedel Craft alkylation and acylation of benzene. **[10]**

OR

What are substitution reaction? Discuss the reaction mechanism and factors affecting SN_1 and SN_2 reactions.

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

a) What is Huckel's rule of aromaticity? Explain with suitable example.

b) Write the difference between pi bond and sigma bond.

c) Write any three methods of preparation of alcohols.

d) Explain the concept of inductive effect with suitable example.

e) Distinguish between Resonance and Tautomerism.

f) Define nucleophile, carbocation and carbine with suitable example.

g) Explain the effects of H - bonding on M.P. & B.P., solubility, stability, acidity & bacsicity.

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

a) Define hybridization Mention different types of hybridization. Explain Sp^3 hybridization in brief.

b) Define and explain hyperconjugation with suitable examples.

c) What is isomerism? Explain enantiomers and diastereomers with example.

d) Explain in brief tautomerism with examples.

P.T.O.

SECTION - II

Q4) Define elimination reaction? Explain mechanism, stereochemistry of E_1 and E_2 reactions. Compare mechanism of E_1 and E_2 reactions. **[10]**

OR

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

i) –OH ii) $-NO_2$

iii) –Br iv) $-CH_3$

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

a) Explain why tertiary carbocations are more stable than secondary carbocations?

b) Explain Hoffman rule for 1,2 -elimination reaction.

c) Draw structure for any three of the following,

4-Ethylaniline, 1,3-Dinitrobenzene, 2-Hydroxy butanoic acid, 3-Methyl-2-pentanone, 1-Ethoxy propane.

d) Write a note on Diels-Alder reaction.

e) Draw resonance structures of Phenol and Aniline.

f) Write synthesis of p-nitrotoluene and 2,4,6 - tribromoaniline starting from benzene.

g) Give and explain any three reactions of alkyl halides.

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

a) Arrange following compounds in increasing order of acidity and explain it.

i) Acetic acid

ii) Dichloroacetic acid

iii) Formic acid

b) Discuss in brief about inter and intramolecular forces of attraction.

c) Write about acidity of carboxylic acids. Discuss the effects of substituent's on acidity of monocarboxylic acids.

d) Explain Markovnikov's and anti-markovnikov's rule with example.

Total No. of Questions : 6]

SEAT No. : ____

P1512

[Total No. of Pages : 2

[4949] - 15
F.Y. B. Pharmacy (Semester - I)
HUMAN ANATOMY AND PHYSIOLOGY - I
(2015 Pattern) (Credit System)

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

SECTION - I

Q1) Enlist the clotting factors. Describe in detail the mechanism that contributes to nemostasis and nemostatic control mechanism. **[10]**

OR

Draw neat labeled diagram of cell.Discuss the stracture and function of nucleus.**[10]**

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

a) Explain acquired/adaptive immunity.

b) What are different types of anemia.

c) Explain the ABO system of blood grouping.

d) Write compositions of cytosol.

e) Explain the transport across cell membrane.

f) Explain structure and functions of spleen

g) Describe the structure and function of platelates.

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

a) Internal environment of body.

b) RBCs

c) Lymph node

d) Protein synthesis

P.T.O.

SECTION - II

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

OR

Define blood pressure. Discuss the factors affecting blood pressure. Explain in detail hormonal regulation of blood pressure. **[10]**

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

a) Explain the structure and functions of liver.

b) Write note on health promotion.

c) Define the terms: Gastritis, peptic ulcers and cirrhosis.

d) Explain types, functions of salivary glands.

e) Write note on heart valves.

f) Describe structure of blood vessels.

g) Explain conduction system of heart.

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

a) Blood circulation.

b) Electrocardiogram (ECG)

c) Stomach

d) Structure and functions of small intestine.

Total No. of Questions : 6]

SEAT No. :

P1513

[Total No. of Pages : 2

[4949] - 16
F.Y. B. Pharmacy (Semester - I)
COMMUNICATION AND SOFT SKILL DEVELOPMENT
(2015 Pattern) (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 answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Black figure to the right indicate full marks.***

SECTION - I

Q1) Define communication? Explain the role of communication in different walks of life. **[10]**

OR

Explain the salient characteristics of the types of writing skills.

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

a) What are the various barriers of communications?

b) Explain the types of non verbal communications.

c) State the significance of technical communication.

d) Explain salient features of argumentative writing.

e) Describe the importance of language as a tool for communication.

f) Differentiate between technical communication and general writing.

g) Explain importance of selecting proper channels for communication.

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

a) Importance of written business correspondence

b) Agenda

c) Upward and downward communication

d) Types of communication

P.T.O.

SECTION - II

Q4) Describe the salient characteristics of effective resume writing. **[10]**

OR

Discuss the role of phonetics for developing effective language skills.

Q5) Solve the following (Any four) **[12]**

a) Explain empathy.

b) Discuss interview skills.

c) Explain the role of emotional intelligence in corporate culture.

d) Explain the importance of internet.

e) Describe interpersonal skills.

f) Explain report writing.

g) Discuss group discussion.

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

a) Problem solving

b) Role of information technology in communication

c) Email etiquettes

d) Office drafting

Total No. of Questions : 6]

SEAT No. : ____

P1514

[Total No. of Pages : 2

[4949] - 21
F.Y. B. Pharmacy (Semester - II)
PHARMACEUTICS - II
(2015 Pattern) (Credit System)

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

Instructions to the candidates:

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

SECTION - I

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

Enlist & explain factors affecting size reduction. Give the principle, working & construction of ball mill.

OR

Explain the factors affecting rate of filtration. Explain the principle, construction & working of leaf filter.

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

a) Explain unit dose packaging for pharmaceuticals.
b) Give the flow chart & ideal layout for liquid manufacturing.
c) Give the construction and working of Hammer Mill.
d) Enlist various filter media. Give the construction & working of filter press.
e) Give the construction & working of Colloidal Mill.
f) Give the evaluation of containers & closures for non-sterile products.
g) Define clarification. Give its techniques.

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

a) Explain steps in GMP.
b) Rotary filter.
c) Edge & end runners Mill.
d) Hydro extractor.

P.T.O.

SECTION - II

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

Give the mechanism of powder mixing. Explain factor which affect mixing. Give advantages & disadvantages and working of planetary mixer.

OR

Define bioavailability & Bio equivalence. Explain the concept & mechanism of absorption.

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

a) Explain methods to measure particle size.

b) Importance of impeller & propeller in liquid mixing.

c) Standards of sieves as per I.P.

d) Explain equipments for size separation.

e) Give constructions and working of Tumbler Mixer.

f) Explain various departments in pharmaceutical manufacturing of solids or liquids.

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

a) Explain GMP with respect to premises & environment.

b) Mechanism of drug distribution.

c) Methods of size distribution.

d) Fluid energy Mill.

Total No. of Questions : 6]

SEAT No. :

P1664

[Total No. of Pages : 2

[4949]-22
First Year B.Pharm
DOSAGE FORM DESIGN
(Credit Pattern) (Semester - II) (2015 Pattern)

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

Instructions to the candidates :

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

SECTION - I

Q1) Attempt any one

Write in detail about importance and method of granulation. Add a note on Effervescent Granules. **[10]**

OR

Give detail account of various components of suspension. Also explain how to evaluate suspension

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

a) Differentiate between flocculated and deflocculated suspension
b) Give advantages, disadvantages of Novel drug delivery systems
c) Define emulsion and give its types
d) Describe various properties of powders
e) How do measure angle of repose
f) Compare dry gum method and wet gum method
g) How do you manufacture creams?

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

a) Self emulsifying drug delivery systems
b) Suppositories bases
c) Dry suspensions
d) Methods of Mixing Powders

P.T.O.

SECTION - II

Q4) Attempt any one

What are various approaches for enhancement of solubility of drug? **[10]**

OR

Explain the term dosage form. Classify Dosage form mentioning their advantages and disadvantages

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

a) Differentiate between creams and ointments
b) Write various units of radioactivity
c) Explain factors affecting rate of dissolution
d) Give account on types of powders
e) Write note on Jellies
f) Write note n HLB
g) Explain various methods of ointment preparation.

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

a) Semisolid bases
b) Radiopharmaceuticals in Diagnosis
c) Emulsifying agents
d) Formulation aspects of tooth powders

Total No. of Questions : 6]

SEAT No. :

P1515

[Total No. of Pages : 3

[4949] - 23
F.Y. B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY - II
(2015 Pattern) (Credit System)

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) ***Write reactions whenever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the structure of carbonyl group. Comment, why aldehydes are more reactive than Ketones? Write the mechanisms for Aldol condensation and Reformatsky reaction. **[10]**

OR

What are alcohols? Classify with suitable examples. Write any three methods of preparation and three reactions of alcohols.

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

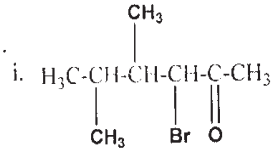
a) Write any three reactions of sulphonic acids.

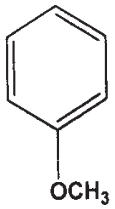
b) Distinguish between aldehydes and ketones by chemical tests.

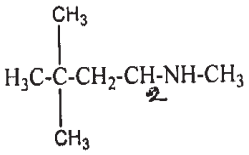
c) Explain acidity of phenols.

d) Comment which is more basic - Ethylamine or aniline and explain the reason for the same.

e) Write IUPAC names for.

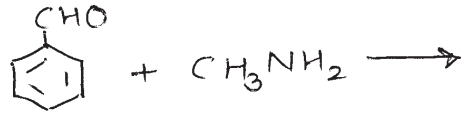
i. 

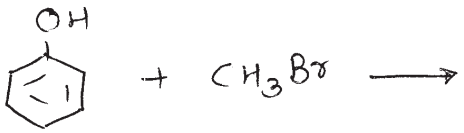
ii. 

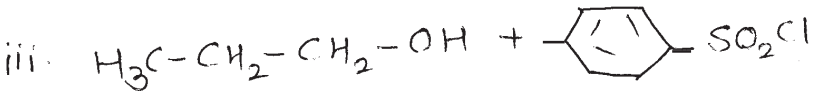
iii. 

P.T.O.

f) Predict the major products in each of the following reactions.

i. 

ii. 

iii. 

g) Write any three methods of preparation of amines.

Q3) Solve the following (Any 2) **[8]**

a) Methods of separation of amines

b) Reactions for conversion of

i) p-toludine to Toluic acid

ii) Benzaldehyde to Cinnamic acid

iii) Phenol to Anisole

iv) Benzene sulphonic acid to sulphonamide

c) Methods of preparation of Ethers.

d) Ring substitution reactions of phenols.

SECTION - II

Q4) Explain the substitution Nucleophilicbimolecular reaction, with mechanism and stereochemistry giving suitable examples. **[10]**

OR

Enlist various factors affecting nucleophilic substitution reaction. Explain each factor in detail giving suitable example.

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

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

b) Give any two methods of preparation of anhydride with chemical reactions.

c) Give any two chemical reactions of Acid Chlorides.

d) Explain acid catalyzed esterification of carboxylic acids.

e) Explain any two reactions of isocyanides.

f) Give any two methods of preparation of cyanides.

g) Explain any two reactions of amides.

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

a) Acidic and alkaline hydrolysis of esters.

b) Compare SN1 and SN2 mechanism.

c) Substitution Nucleophilic internal.

d) Reaction of Grignard reagent

Total No. of Questions : 6]

SEAT No. :

P1516

[Total No. of Pages : 2

[4949] - 24

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

1.2.4: HUMAN ANATOMY AND PHYSIOLOGY - II

(2015 Pattern) (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 answer books.***
3) ***Neat labeled diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the anatomy and functions of Lungs. Discuss in detail mechanisms involved in respiration. **[10]**

OR

Discuss the anatomy of spinal cord. Explain in detail functional components of reflex arc.

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

a) Explain the different types of neurotransmitters with their functions.

b) Explain in brief thalamic nuclei.

c) Draw neat labeled diagram of interior of eyeball.

d) Differentiate between sympathetic and parasympathetic divisions of the autonomic nervous system.

e) Describe the structure and functions of trachea

f) Describe cranial nerves with their function.

g) Explain the physiology of hearing.

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

a) Cerebrum

b) Physiology of vision.

c) Thermoregulation.

d) Structure and functions of brain stem

P.T.O.

SECTION - II

Q4) Explain in detail the structure and functions of the organs of male reproductive system. **[10]**

OR

Enlist the endocrine glands with their hormones. Discuss in detail physiological actions of hormones of anterior and posterior pituitary gland.

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

a) Describe the physiological actions of insulin and glucagon.

b) Describe the process of oogenesis and follicular development.

c) Discuss the physiological actions of the thyroid hormones. How are the secretions of T_3 and T_4 regulated?

d) Discuss the structure and functions of urinary bladder and urethra.

e) Explain the anatomy and physiology of parathyroid gland.

f) Write in brief about the structure and functions of female reproductive system.

g) Discuss physiology of micturation.

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

a) Structure and functions of kidneys.

b) Process of spermatogenesis.

c) Physiological actions of adrenocorticoid hormones.

d) Female reproductive cycle.

Total No. of Questions : 6]

SEAT No. : ____

P1517

[Total No. of Pages : 2

[4949] - 25
F.Y. B. Pharmacy
1.2.5 PHARMACOGNOSY
(2015 Pattern) (Credit System)

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

Instructions to the candidates:

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

SECTION - I

Q1) Elaborate a detailed account of protein structure with its function. **[10]**

OR

Define leaf. Explain in detail general morphology leaf.

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

a) Explain in brief the functions of cell components.

b) Write a brief history of DNA.

c) Explain in brief important branches of biology.

d) Define and classify fruits with example.

e) Differentiate between organized and unorganized crude drugs.

f) What is bark? Explain the different types of bark with example.

g) Explain in brief epidermal tissue with its function.

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

a) Mitosis

b) Meristematic tissue

c) Mendelian genetics

d) Subterranean organs

P.T.O.

SECTION - II

Q4) Define Pharmacognosy. Explain the scope of Pharmacognosy in detail. **[10]**

OR

What is photosynthesis? Explain in detail the process of Photosynthesis.

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

a) What is Autotrophic mode of nutrition?

b) What do you mean by *Linn*?

c) Enlist different growth hormones.

d) What is Chemosynthesis?

e) Enlist different Ecosystems

f) What are the causes of noise pollution?

g) Explain biodiversity?

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

a) Components of ecosystem.

b) Divisions of plant kingdoms.

c) Auxins & Gibberellins

d) Different types of vegetations.

Total No. of Questions : 6]

SEAT No. :

P1518

[Total No. of Pages : 2

[4949]-26

F.Y. B.Pharmacy.

PHARMACEUTICAL ANALYSIS - I

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

SECTION - I

Q1) Explain in detail neutralisation curves (with examples) of **[10]**

a) Strong acid & Strong Base Titration.

b) Strong Base & weak Acid Titration.

OR

What are the solvent used in non-aqueous titrations. Add a note on Preparation and standardization of 0.1 N Perchloric Acid.

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

a) Explain the terms-Molecular Weight & Equivalent Weight.

b) Differentiate between Qualitative and Quantitative Analysis.

c) Explain Weak Acids & Weak Bases.

d) Write about Accuracy and Precision.

e) Explain Ostwald's theory.

f) Differentiate between Molarity and Normality.

g) Explain T Test for one mean & T test for two mean.

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

a) Polyprotic Acids

b) Primary Standards and Secondary Standards

c) Buffers

d) Errors in analysis

P.T.O.

SECTION - II

Q4) Discuss co-precipitation and methods to minimize co-precipitation. Give applications of grovimetric analysis. **[10]**

OR

Discuss masking and demasking process with suitable examples. Add a note on types of complexo metric titrations.

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

a) Differentiate between iodimetric and iodometric titration.

b) Discuss chelon effect and macrocyclic effect affecting stability constant.

c) How will you prepare and standardize 0.1 N $AgNO_3$ solution?

d) Give applications of redox-titration.

e) Define chelating and sequestering agents. Why EDTA is widely used as complexing agent?

f) Discuss fajan's method.

g) Write about solvents used in washing of precipitate.

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

a) Classification, merits & demerits of gravimetric methods.

b) Metalochromic indicators.

c) Factors affecting solubility.

d) Redox indicators.

Total No. of Questions : 06]

SEAT No. : ____

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[Total No. of Pages : 3

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

PHARM. ORGANIC CHEMISTRY - I

(2015 Pattern)

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

Instructions to the candidates:

1) ***Figures to the right indicate full marks.***
2) ***Attempt section - I & II on separate answer sheets.***
3) ***Draw structures & reactions wherever applicable.***
4) ***All questions are compulsory.***

SECTION - I

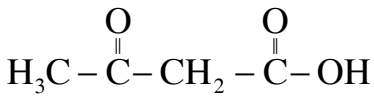
Q1) Explain E_1, E_2 & E_{1CB} mechanisms with suitable examples. Explain factors affecting E_1 elimination reaction. **[10]**

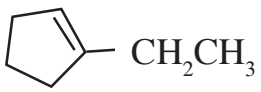
OR

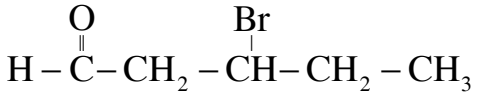
What do you mean by addition reaction? Explain addition of halogens to carbon-carbon double bond with suitable example with reaction mechanism.

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

a) Write the IUPAC name for the following structures.

i) 

ii) 

iii) 

P.T.O.

b) Draw the structures of the following compounds :

i) 2, 4 – hexadione

ii) 5 – ethyl – 3 – methyl octane

iii) 1, 3 – Butadiene

c) Write any three methods of preparation of alkenes.

d) Explain steric effect and mesomeric effect.

e) Explain hydroxylation of alkene using $KMnO_4$.

f) Justify why trichloroacetic acid is stronger acid than acetic acid.

g) Explain Diel's-Alder reaction with suitable example.

Q3) Solve the following (any 2) : **[8]**

a) Explain in detail saytzeff and Hoffmann rule with suitable example.

b) Explain Markovnikov & anti markovnikov rule with example.

c) Write a note on catalytic hydrogenation of alkenes.

d) Explain ozonolysis with suitable example.

SECTION - II

Q4) What are alkenes? Explain their physical properties, three methods of preparation and any three reactions of alkenes. **[10]**

OR

What is hybridisation? Explain with example hybridisation of atomic orbital of :

i) Carbon atom

ii) Nitrogen atom

iii) Oxygen atom.

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

a) Ionic bonds and covalent bonds.

b) Inductive effect

c) Resonance on phenol, Aniline

d) Write a note in O/P directing substituents.

e) Mechanism of halogenation in benzene.

f) Optical isomerism

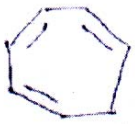
g) Stability of carbocations.

Q6) Solve the following (any 2) : **[8]**

a) Explain in detail tautomerism.

b) Write a note on reactions involving benzyne intermediate.

c) Comment on the aromaticity of the following compounds with appropriate justification.

(i)  (ii)  (iii)  (iv) 

d) Write a note on carbanions.

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