

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 opportunities 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  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$  should be dissolved in water to make 200mL of a solution that contains 298mOsm/L. [Given: Molecular weight of  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O} = 147$ ]
- 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% and 3% zinc oxide ointments to produce 10% ointment.
- g) Discuss: Drug profile documentation.

**P.T.O.**

- Q3)** Answer the following questions. (Any two) [8]
- Explain patient medication record with suitable example.
  - Write short note on Responding to prescription.
  - Explain: Containers and closures used for dispensed products.
  - 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]
- Explain Idiosyncrasy
  - Explain 3 formulae for calculation of doses for infants and children.
  - Write in brief Reporting of ADR.
  - Explain counseling to be given by a pharmacist to a patient suffering from asthma.
  - What is the role of pharmacist in vaccination.
  - Write a note on rationale use of drugs.
  - Write precautions to be taken by a diabetic patient.

- Q6)** Solve any two out of four. [8]
- Explain counselling to be given by a pharmacist to a patient suffering from tuberculosis.
  - Write a note on chemical incompatibility.
  - Explain any 4 factors affecting dose of a drug.
  - 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 drawn 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 Cisplatin.
- 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 carbene with suitable example.
- g) Explain the effects of H - bonding on M.P. & B.P., solubility, stability, acidity & basicity.

**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)  $-\text{OH}$       ii)  $-\text{NO}_2$   
iii)  $-\text{Br}$       iv)  $-\text{CH}_3$

**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 hemostasis and hemostatic control mechanism. **[10]**

OR

Draw neat labeled diagram of cell. Discuss the structure 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 platelets.

**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 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

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 on 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**

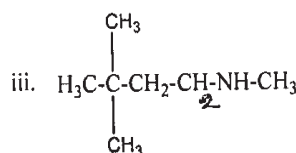
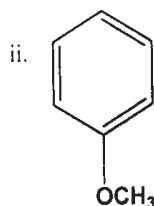
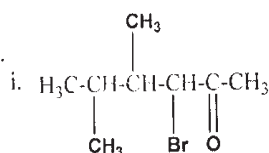
**Q1)** Explain the structure of carbonyl group. Comment, why aldehydes are more reactive than Ketones? Write the mechanisms for Aldol condensation and Reformatsky reaction. [10]

OR

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

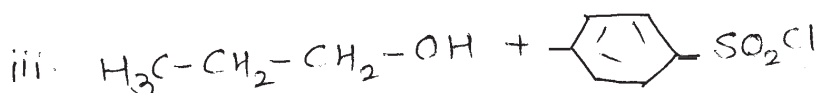
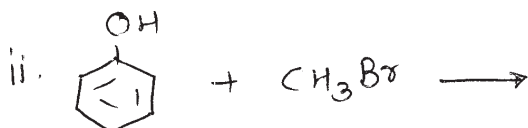
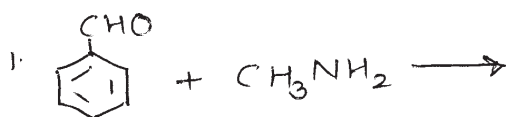
**Q2)** Solve the following (any four) [12]

- 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.



P.T.O.

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



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-toluidine 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 gravimetric analysis. **[10]**

OR

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

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

- a) Differentiate between iodometric and iodimetric titration.
- b) Discuss chelate effect and macrocyclic effect affecting stability constant.
- c) How will you prepare and standardize 0.1 N  $\text{AgNO}_3$  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. :

P5117

[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

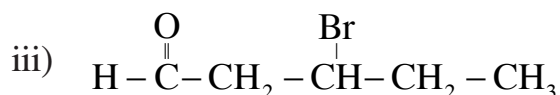
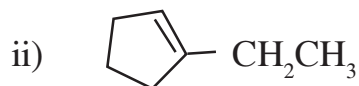
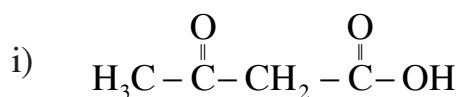
Q1) Explain  $E_1$ ,  $E_2$  &  $E_{1CB}$  mechanisms with suitable examples. Explain factors affecting  $E_1$  elimination reaction. [12]

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.



P.T.O.

- b) Draw the structures of the following compounds :
- 2, 4 – hexadione
  - 5 – ethyl – 3 – methyl octane
  - 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  $\text{KMnO}_4$ .
- 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]**

- Explain in detail saytzeff and Hoffmann rule with suitable example.
- Explain Markovnikov & anti markovnikov rule with example.
- Write a note on catalytic hydrogenation of alkenes.
- 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 :

- Carbon atom
- Nitrogen atom
- Oxygen atom.

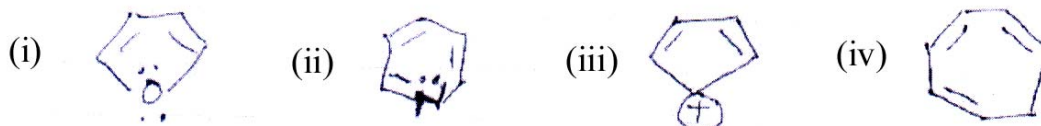
**Q5)** Explain the following (any 4) : **[12]**

- Ionic bonds and covalent bonds.
- Inductive effect
- Resonance on phenol, Aniline
- Write a note in O/P directing substituents.
- Mechanism of halogenation in benzene.
- Optical isomerism
- Stability of carbocations.

**Q6)** Solve the following (any 2) :

**[8]**

- Explain in detail tautomerism.
- Write a note on reactions involving benzyne intermediate.
- Comment on the aromaticity of the following compounds with appropriate justification.



- Write a note on carbanions.

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