Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-1001

B. PHARMACY (First Year) (I Sem.) EXAMINATION, 2018
PHARMACEUTICS-I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) Answers to the *two* sections should be written in separate answer books.

(*ii*) Neat diagrams must be drawn wherever necessary.

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

Section I

1. Attempt any *one* : [10]

Classify the dosage form and explain different routes of drug administration in brief.

Or

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

2. Attempt any *four* : [12]

(*a*) Write the principles of Homoeopathy as alternative system of medicine.

(*b*) What is pharmacopoeia ? Add a note on Indian Pharmacopoeia.

(*c*) Write the scope of pharmaceutical engineering.

(*d*) What are the career opportunities after pharmacy graduation ?

P.T.O.

(*e*) Describe Siddha and Unani system of medicine.

(*f*) Write brief about ayurvedic pharmacopoeia.

(*g*) What are the different branches of pharmaceutics ?

3. Write short notes (any *two*) : [08]

(*a*) Pharmacy code of ethics

(*b*) Principle of ayurvedic system of medicine

(*c*) Scope of hospital pharmacy

(*d*) U.S.P.

Section II

4. Attempt any *one* : [10]

Explain water as universal solvent in pharmaceutical solutions and discuss various methods to improve the aqueous solubility of drug.

Or

Define performulation, discuss physicochemical properties of drug for preformulation study.

5. Attempt any *four* : [12]

(*a*) Discuss formulation of artificial syrup.

(*b*) Discuss alternative solution method for preparation of aromatic water.

(*c*) Differentiate between quality control and quality assurance.

(*d*) Discuss formulation and use of enema.

(*e*) Write importance of stability study in formulation development.

(*f*) Why are excipients are used along with drug to formulate dosage form ?

(*g*) Explain the different preservatives used in pharmaceuticals.

6. Write short notes on (any *two*) : [08]

(*a*) cGMP

(*b*) Colours and Flavours

(*c*) Quality control tests for solution

(*d*) Polymorphism.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-1002

F.Y. B. PHARMACY (I Semester) EXAMINATION, 2018
MODERN DISPENSING PRACTICES
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer books.

(*iii*) Neat diagrams must be drawn wherever necessary.

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

Section I

1. Define Prescription. Explain different parts of prescription. Add a note on pricing of the prescription. [10]

Or

Explain in detail steps involved in compounding.

2. Attempt any *four* of the following : [12]

(*a*) Explain different types of Prescription.

(*b*) Elaborate in short storage conditions for medicines.

(*c*) Write in short container for dispensing pharmaceutical product.

(*d*) Explain personnel and housekeeping with respect to compounding.

P.T.O.

(*e*) In what proportion may a manufacturing pharmacist mix 20%, 15%, 5% and 3% zinc oxide ointment to produce 10% ointment.

(*f*) What is proof strength of 80% and 45% v/v ethanol.

(*g*) Write a note on Labelling of dispensed product.

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

(*a*) Write a note on PMR.

(*b*) Explain stability of medicines.

(*c*) Elaborate on stock records.

(*d*) How many grams of Sodium chloride should be used in compounding the following prescription :

Pilicarpine nitrate	0.3 gm
Sodium Chloride	q.s.
Purified water ad	30 ml

Make Solution isotonic with eye (*i* factor of piolocarpine nitrate is 1.8 and molecular weight is 27l)

Section II

4. Explain in detail therapeutic incompatibility and methods to correct it. [10]

Or

Explain organization, structure and design of retail drug store and Legal requirements for establishment and maintenance of drug stores.

5. Attempt any *Four* from the following : [12]

(*a*) Elaborate in short role of pharmacist in family planning.

(*b*) Write Young's, Dillings and Clarks formula regarding calculation of dose for infants and children's.

(*c*) Define physical incompatibility and enlist its types.

(*d*) Write a short note on pharmacovigilance

(*e*) Write a short note on patient counselling in Hypertension.

(*f*) Write in short concept of idiosyncratic cases.

(*g*) Write in short reporting of ADR.

6. Solve any *two* from the following : [8]

(*a*) Enlist factors affecting dose and elaborate on any *two*.

(*b*) Write a note on chemical incompatibility.

(*c*) Write a note on drug information services.

(*d*) Write a note on Rational drug use.

Total No. of Questions—**6**] [Total No. of Printed Pages—**4**

Seat No.	

[5345]-1003

F.Y. B. Pharmacy (Sem. I) EXAMINATION, 2018
PHARMACEUTICAL INORGANIC CHEMISTRY–I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the two Sections should be written in separate answer books.

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

SECTION I

1. Attempt any *one* from the following : [10]

(*a*) What are antacids ? Classify them with examples. Give mechanism of action, preparation, properties, storage of the following antacids :

(*i*) Aluminium Hydroxide Gel

(*ii*) Magnesium Hydroxide.

(*b*) What do you mean by Hardness of water ? Discuss various methods of removing temporary hardness and permanent hardness of water.

2. Solve any *four* from the following : [12]

(*a*) Define the following terms :

(*i*) Pharmacopoeia,

(*ii*) Achlorhydria,

(*iii*) Limit test

P.T.O.

(*b*) Give the principle involved in limit test for sulphate.

(*c*) Explain any *three* official waters.

(*d*) Aluminium or calcium antacids are combined with magnesium antacids. Give reason.

(*e*) Give the composition and uses of ORS.

(*f*) Write in brief history of Indian Pharmacopoeia.

(*g*) Give the principle and reactions involved in limit test for iron.

3. Solve any *two* from the following : [8]

(*a*) What are saline cathartics ? Give their mechanism of action. Give preparation, properties, storage and uses of sodium potassium tartarate.

(*b*) Discuss any *four* electrolytes used in replacement therapy.

(*c*) Give physiological role of :

(*i*) Sodium,

(*ii*) Potassium,

(*iii*) Phosphate,

(*iv*) Bicarbonate.

(*d*) Give the principle involved in limit test of Arsenic.

SECTION II

4. Attempt any *one* from the following : [10]

(*a*) What are topical agents ? Classify them with suitable examples. Explain mechanism of action of Antimicrobial agents. Discuss preparation, properties, storage and uses of Hydrogen Peroxide solution.

(*b*) Give the physiological role of :

(*i*) Iron,

(*ii*) Iodine,

(*iii*) Copper,

(*iv*) Zinc.

Give preparation, properties, uses and storage of Ferrous Sulphate.

5. Solve any *four* from the following : [12]

(*a*) What are anticaries agents ? Give preparation, properties and uses of sodium fluoride.

(*b*) Write storage and labelling conditions for Oxygen, Carbon dioxide and Helium as inorganic gases.

(*c*) What are expectorants ? Give mechanism of action, preparation, properties of Ammonium chloride.

(*d*) Define the term 'Astringents' with suitable examples. Give uses of any *one* such agent.

(*e*) Give preparation, properties, storage of any *one* inorganic antidepressant agent.

(*f*) Explain topical protectives with suitable examples. Give preparation, properties and uses of Zinc oxide.

(*g*) Write a brief note on 'Iodine and its preparations'.

6. Solve any *two* from the following : [8]

(*a*) Write a note on 'Radioopaque Contrast Media'.

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

(*c*) Give preparation, properties, storage and uses of :

(*i*) Cisplatin,

(*ii*) Copper sulfate

(*d*) Give preparation, properties, storage and uses of :

(*i*) Potassium permanganate,

(*ii*) Potassium iodide.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-1004

F.Y. B.Pharm. (I Sem.) EXAMINATION, 2018

PHARMACEUTICAL ORGANIC CHEMISTRY—I

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

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

Section I

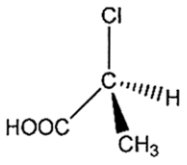
Q. No. 1: Discuss the concept of resonance and aromaticity with suitable examples. Discuss the orientation and reactivity in mono-substituted benzene. **10**

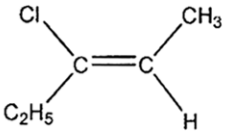
OR

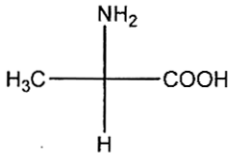
What do you mean by addition reactions of alkenes? Give general mechanism of electrophilic addition reactions. Explain addition of halogens on alkenes.

Q. No. 2 **Answer the following (Any Four)** **12**

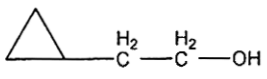
a) Assign R / S or E/Z configuration to following

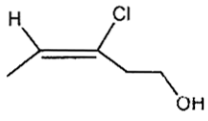
(i) 

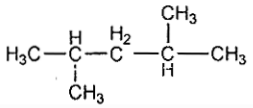
(ii) 

(iii) 

b) Write IUPAC names for following structures

i) 

(ii) 

(iii) 

c) What is peroxide effect? Explain it with suitable example.

d) Define following terms with suitable examples
i) Free radical (ii) Carbenes (iii) Nitrenes

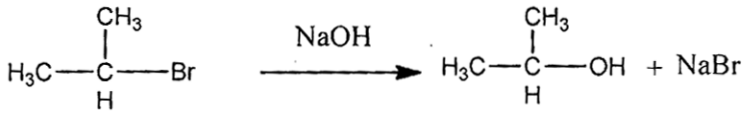
e) Discuss Markovnikoff rule with example.

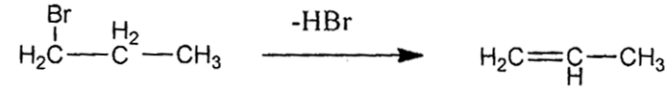
P.T.O.

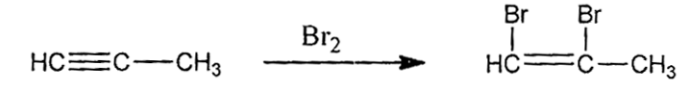
f)	Explain Tautomerism with example.	
g)	Write any three methods of preparation of alkanes.	
Q. No. 3	**Answer the following (Any Two)**	**08**
a)	Classify organic compounds on the basis of elemental composition (at least four classes with suitable examples).	
b)	Define hybridization. Explain sp^2 hybridization.	
c)	Explain the elimination-addition mechanisms of nucleophilic aromatic substitution.	
d)	Explain Inductive effect, Mesomeric effect with examples.	

Section II

Q. No. 4	Define isomerism? Explain different types of isomerism with examples.	**10**
	OR	
	Classify ortho/para and meta directing groups (monosubstituted benzene) from following: a)–NH_2 (b) –CH_3 (c) –CHO (d) –NO_2 Justify any one ortho/para one meta directing group with resonance.	
Q. No. 5	**Answer the following (Any Four)**	**12**
a)	Classify various types of chemical reactions with suitable examples.	
b)	Explain Saytzeff rule for 1,2 elimination reaction?	
c)	Write a note on ozonolysis.	
d)	Tertiary carbocations are more stable then secondary carbocations explain.	
e)	Identify the type of chemical reaction (Addition, Substitution etc) in following:	

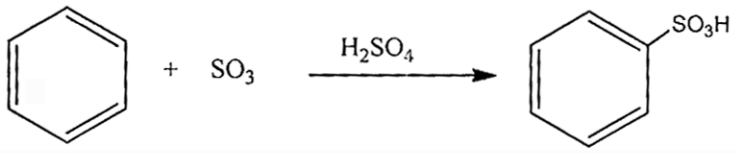
a) 

b) 

c) 

f)	Explain hyperconjugation and electromeric effect with example.	
g)	Compare E1 with E2 reaction mechanism.	

Q. No. 6	**Answer the following (Any Two)**	08
a)	Inter and Intra molecular forces of attraction	
b)	What are alkynes? Write their any two methods of preparation and two reactions.	
c)	Explain steric effect.	
d)	Write down the stepwise mechanism for following reactions	



Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-1005

First Year B.Pharmacy (I Sem.) EXAMINATION, 2018
1.1.5 : HUMAN ANATOMY AND PHYSIOLOGY–I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Neat labelled diagrams must be drawn wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION-I

Q1) Explain the Structure of Nucleus. Describe the sequence of events during protein synthesis? **[10]**

OR

Explain RBC life Cycle in detail?

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

a) Explain the structure and functions of Platelets?
b) Explain the components of Feedback system?
c) Explain the Structure of Plasma membrane?
d) Explain the composition of blood?
e) Explain the terms : i) Hematology ii) Homeostasis iii) Hemostasis
f) Explain about blood transfusion?
g) Explain the characteristics of muscular tissue?

Q3) **Write short note on (Any 2)** **[08]**

a) Physiology of Muscle contraction.
b) Platelet plug formation.
c) Hemoglobin.
d) ABO system of Blood.

P.T.O.

SECTION-II

Q.4) Define Blood pressure. Discuss the factors affecting blood pressure. Explain in detail hormonal regulation of blood pressure? **[10]**

OR

Enlist the organs of digestive system. Describe the, Location, structure histology and functions of Stomach?

Q.5) **Answer the following (Any 4)** **[12]**

a) Explain the structure of Artery and Vein.

b) Draw neat labeled diagram of interior of heart.

c) Describe about coronary circulation.

d) Discuss histology & functions of Small intestine.

e) Explain the functions of Liver?

f) Write a note on heart valves.

g) Explain types & functions of Salivary glands?

Q.6) **Write short note on (Any 2)** **[08]**

a) Conduction system of Heart.

b) Contraceptive Devices

c) Secretion & function of Gastric juice

d) Nutritional deficiency.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-1006

F.Y. B. PHARMACY (I Semester) EXAMINATION, 2018

COMMUNICATION AND SOFT SKILL DEVELOPMENT

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be write in in separate answer books.

(*iii*) Neat labelled diagrams must be drawn wherever necessary.

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

Section-I

1. Write meaning and importance of communication. Explain objectives of communication. Describe the different modes of overcoming barriers of communication. [10]

Or

Describe the expository style of writing and states its structure. 10]

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

(*a*) State objectives of business letters.

(*b*) Why is oral communication essential ?

(*c*) State the principles of paragraph writing.

(*d*) Explain the importance of knowing audience.

(*e*) State various purposes of writing.

(*f*) Write the salient features of technical communication.

(*g*) Explain language as a tool for communication.

P.T.O.

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

(*a*) Objective style *vs.* Literary Composition.

(*b*) Body Language

(*c*) Knowing the audience

(*d*) Reference material.

Section-II

4. Define business communication. Write principles and essentials of good correspondence. Explain different types of commercial correspondence. [10]

Or

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

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

(*a*) Write an application for the post of research scientist in pharmaceutical industry.

(*b*) Format of leave letter.

(*c*) Importance of written business correspondence.

(*d*) Describe components of business letter.

(*e*) Explain steps in problem solving

(*f*) Write the different conventional media.

(*g*) Write email etiquettes.

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

(*a*) Enquiry letters

(*b*) Phonetic symbols

(*c*) Role of information technology in modern era

(*d*) Empathy.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-2001

F.Y. B.Pharmacy (Sem. II) EXAMINATION, 2018

PHARMACEUTICS–II

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the *two* sections should be written in separate answer books.

(*iii*) Neat labeled diagrams must be drawn wherever necessary.

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

SECTION I

1. Explain mechanism of size separation based on sedimentation. Describe construction, working, advantages and disadvantages of Anderson pipette method with neat diagram.

Or

Enlist and explain factors affecting size reduction and size reduction principles involved in various mills. Discuss principle, construction and working of Ball mill with diagram.

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

(*a*) Describe construction and working of hydro extractors.

(*b*) What are various types of plastics used in containers and closures?

P.T.O.

(*c*) Explain unit dose packaging.

(*d*) Describe in brief Kick's law, Ratzinger's law, and Bond's law in size reduction.

(*e*) Explain factors affecting rate of filtration.

(*f*) Explain Filter leaf.

(*g*) Discuss in brief Primary and Secondary packaging with suitable example.

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

(*a*) Grading of powders as per I.P.

(*b*) Elutriation

(*c*) Filter media and filter aids

(*d*) Cyclone separator.

SECTION II

4. Explain mechanisms involved in powder and liquid mixing. Explain in brief construction and working of 'planetary mixer'. [10]

Or

Enlist and discuss various components of Good Manufacturing practices.

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

(*a*) Enlist various physiochemical properties of drug influencing its absorption and explain in detail any *one*.

(*b*) Discuss in brief bioavailability and bioequivalence concept.

(*c*) Describe construction and working of propellers and impellers.

(*d*) Write on active absorption.

(*e*) Explain the terms-t_{max}, C_{max} and AUC with the help of typical plasma conc.-time profile.

(*f*) Write a note on renal excretion.

(*g*) Draw a layout of liquid manufacturing unit.

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

(*a*) Phase I and phase II metabolic processes

(*b*) Sigma and ribbon blender

(*c*) Deareation during liquid mixing

(*d*) Blister packing.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-2002

FIRST YEAR B. PHARMACY (II SEM.) EXAMINATION, 2018

DOSAGE FORM DESIGN

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer of the *two* Sections should be writte in separate answer-books.

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

SECTION – I

Q. 1) Discuss concepts of dissolution and factors affecting the same 10 marks

OR

Q. 1) Define and classify suspension, with its formulation aspect 10 marks

Q.2) Solve **any four** form the following. 12 marks

A) Note on Expression of solubility

B) Discuss units of radioactivity

C) Detail note on Glycero – gelatin Suppository Base

D) Give Theories of Emulsification

E) Note on wet granulation

F) Formulation of lotion

G) Note on jellies

Q.3) Write short note on. **(Any Two)** 08 marks

A) Brief note on NDDS

B) Discuss methods of producing radionuclides

C) Give various ways of expression of solubility

D) Elaborate formulation of microemulsion

P.T.O.

SECTION II

Q.4) Define semisolid dosage forms. What are various types of it? How ointments are evaluated for its quality? 10 marks

OR

Q.4) Explain the compounding ointment by incorporation method 10 marks

Q.5) Solve **any four** form the following. 12 marks

A) Calibration of suppository moulds.
B) Classification of suspension
C) Differentiate between creams and ointments
D) Evaluation tests for suppository
E) What is the concept of radiopharmaceuticals
F) What are gels? How it is formulated?
G) How suppositories are evaluated for quality?

Q.6) Write short note on. **(Any Two)** 08 marks

A) Evaluation of suspension
B) Displacement Value
C) Explain formulation of dry powder suspension
D) Coca butter as a base

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-2003

First Year B.Pharmacy (II Sem.) EXAMINATION, 2018
PHARMACEUTICAL ORGANIC CHEMISTRY—II
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Write reactions wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION-I

Q.1. Define and classify Amines with suitable examples. Write any three methods of preparation and three reactions of Amines. **[10]**

OR

Explain the structure and reactivity of carbonyl group. Write the reactions and mechanism for Aldol and Knoevenagel condensation.

Q.2. Solve the following (ANY FOUR) **[12]**

a. Explain the influence of hydrogen bonding on properties of phenols.

b. Write any three methods for preparation of sulphonic acids.

c. Write the chemical reactions for Williamson's synthesis and Reimer-Tiemann reaction.

d. Define and classify alcohols with examples.

e. Give reason- Methyl amine is stronger base than ammonia and aniline is weaker than ammonia.

f. Write the reactions of carbonyl group of aldehyde/ketone with:

i. Hydroxyl amine ii. Grignard reagent

g. Draw structures for following IUPAC names:

i. 4-Hydroxy-2-methyl pentanal

ii. 2-Methoxy propane

iii. N-Methyl butanamine

P.T.O.

Q.3. Write short notes on: (ANY TWO) **[8]**

a. Separation of Amines mixture

b. Methods of preparation of Phenols

c. Reactions of Alcohols.

d. Reaction and mechanism of Perkin reaction

SECTION-II

Q. 4. Define and classify functional derivatives of carboxylic acids with any two structures from each class. Give any two methods of preparation and reactions of anhydrides. **[10]**

OR

Give the reaction, mechanism and applications of Claisen and Dieckmann reactions.

Q. 5 Answer the following (Any four) : **[12]**

(a) Give any two methods of synthesis of amides with suitable examples.

(b) Give any two methods of preparation of esters.

(c) Distinguish between cyanides and isocyanides.

(d) Explain any two reactions of cyanides.

(e) Write any two methods of preparation of alkyl halide

(f) How will you convert benzonitrile to acetophenone?

(g) Explain any two reactions of acid chlorides.

Q. 6 Write short notes on (Any Two) : **[8]**

(a) Substitution nucleophilic internal reaction

(b) Compare SN^1 and SN^2

(c) Michael addition reaction.

(d) Dicarboxylic acids.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-2004

First Year B.Pharmacy (II Sem.) EXAMINATION, 2018

HUMAN ANATOMY AND PHYSIOLOGY—II

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

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

Section-I

30Marks

Q No.1) Draw and enlist the parts of Brain. Describe in detail the anatomy & functional areas of Cerebrum? **10 marks**

OR

Define respiration. Explain in detail mechanism of breathing and exchange of gases during respiration.

Q No.2) Answer the following (any four) **12 marks**

a) Define the following terms

i) Neurology ii) Pulmonary ventilation iii) vital capacity

b) Explain the structure of Skin.

c) Explain physiology of Hearing.

d) Explain the functions of CSF.

e) Explain the structure of medulla oblongata.

f) Draw a neat labeled diagram of Human Eye.

g) Explain the structure & functions of Trachea.

Q No.3) Write notes on (any two) **08 marks**

1) Distinguish between Sympathetic & Parasympathetic Nervous system.
2) Physiology of Vision
3) Reflex Arc
4) Neurotransmitters

P.T.O.

Section-II

30 Marks

Q No.4) Explain in detail major events in female reproductive cycle. **10 marks**

OR

Describe the location, hormones and functions of anterior and posterior pituitary gland.

Q No.5) Answer the following (any four) **12 marks**

a) Define the following terms
   1) Urology 2) Nephrology 3) Endocrinology
b) Explain the structure of sperm
c) Explain physiology of micturition
d) Explain the functions of kidney
e) Explain oogenesis
f) Draw a neat labeled diagram of male reproductive system
g) Explain physiological actions of thyroid gland

Q No.6) Write notes on (any two) **8 marks**

1) Renin-angiotensin-aldosterone system
2) Synthesis, storage and release if thyroid hormone
3) Process of urine formation
4) Spermatogenesis

Total No. of Questions—3+3] [Total No. of Printed Pages—3

Seat No.	

[5345]-2005

FIRST YEAR B. PHARMACY (II SEM.) EXAMINATION, 2018

PHARMACOGNOSY

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) Answers to the two Sections should be written in separate answer-books.

(*ii*) Neat diagrams must be drawn wherever necessary.

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

(*iv*) *All* questions are compulsory.

SECTION-I

1. What is bark? Explain in detail general morphology and microscopy of bark. **10**

OR

Elaborate a detailed account of history and structure of DNA.

2. Answer **any four :** **12**

a) Explain in brief secondary thickening of xylem vessels.

b) Define fruits. Explain different parts of it.

c) Write in brief account on cork tissue.

d) What are unorganized crude drugs? Classify it with examples.

e) Define wood. Give its types with example.

f) What are stomata? Explain different types of stomata.

g) Explain the microscopic characters of leaf.

P.T.O.

3. Write short notes on **any two:** **8**

a) Phloem

b) Ergastic cell contents

c) Secretary tissue

d) Venation

SECTION-II

1. What are different pollutants? Explain in detail the impact of pollution on the global environment. **10**

OR

Write a detailed note on Plant growth regulators.

2. Answer **any four:** **12**

a) What are Heterotrophic plants?

b) What is 'Papyrus Ebers'?

c) What are photosynthetic pigments?

d) What are Biotic and Abiotic components?

e) Explain Food webs.

f) Explain Light and Dark reaction.

g) What is the difference between Terrestrial and Aquatic Ecosystem?

3. Write short notes on **any two:** **8**

a) Classification of crude drugs

b) Mutation

c) Define Pharmacognosy and explain the scope.

d) Binomial nomenclature of plants.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-2006

First Year B.Pharmacy (II Sem.) EXAMINATION, 2018
PHARMACEUTICAL ANALYSIS—I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Neat diagrams must be drawn wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION-I

Q1 Explain theoretical considerations, limitations and Non-aqueous solvents in non-aqueous titration **[10]**

OR

What are neutralization titrations? Explain in detail Neutralization curves with suitable examples.

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

a) Define Primary standard. Enlist requirements of primary standards.
b) Write about T-test.
c) Calculate equivalent weight of Sodium oxalate, Potassium permanganate and Aluminium hydroxide
d) Explain effect of temperature on non-aqueous titrations.
e) What is buffer index? Write equation to calculate buffer index.
f) Discuss in brief Ostwald's theory.
g) Explain the terms Molarity, Normality and Molality.

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

a) Primary and secondary standards.
b) Indicators in Non-aqueous titrations.
c) Types of errors.
d) Titration of amino acid

P.T.O.

SECTION-II

Q4) What is co-precipitation and how it is reduced? Give the applications of Gravimetric analysis **[10]**

OR

Differentiate between Iodimetric and Iodimetric titrations. Explain importance of pH conditions for each of them. Add a note on Ceriometry.

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

a) How will you prepare and standardize 0.1 N $AgNO_3$ solution.
b) Differentiate between co-precipitation and post precipitation.
c) Explain the term Ligand and Sequestering agent.
d) Compare Mohr's method and Volhard's method.
e) "Sulphuric acid is used in redox titrations" Give reason.
f) Explain Assay of calcium gluconate as per I.P.
g) Explain common ion effect. How is it utilized for controlling the concentration of weak electrolyte.

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

a) Sodium Nitrite Titration.
b) Organic precipitants.
c) Pharmaceutical Applications of Complexometric titrations
d) Adsorption indicators.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-3001

B. PHARMACY (Second Year) (III Sem.) EXAMINATION, 2018
PHYSICAL PHARMACEUTICS-I (2.3 IT)
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) Answers to the two sections should be written in separate answer-books.

(*ii*) Neat diagrams must be drawn wherever necessary.

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

Section I

1. Attempt any *one* question out of two : [8]

(*a*) What are aerosols ? Explain the principle involved in the two phase system aerosols.

(*b*) Explain with suitable example, phase diagram for three component system and also write applications of phase rule.

2. Attempt any *four* : [12]

(*a*) Explain van der Waal's equation for real gases.

(*b*) Explain the deviations from Raoult's law.

(*c*) Explain the Claude's process for liquefaction of gases.

(*d*) Draw a neat labeled phase diagram for one component system.

P.T.O.

(*e*) A solution containing 9g of sucrose dissolved in 90g of water has a boiling point of 100.149°C. What is the molecular weight of sucrose if ebullioscopic constant (Kb) for water is 0.51 ?

(*f*) Why is lowering of vapour pressure a colligative property ?

(*g*) Explain the boiling point diagram of an ideal binary mixture.

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

(*a*) Conductometric titrations

(*b*) Osmotic pressure as colligative property

(*c*) Two component system containing liquid phases

(*d*) Depression of freezing point as colligative property.

Section II

4. Attempt any *one* question out of two : [8]

(*a*) Explain effect of molecular affinity and ionic dissociation on distribution phenomenon.

(*b*) (*i*) Write a note on Polymorphism

(*ii*) Discuss BCS classification in detail.

5. Attempt any *four* : [12]

(*a*) Define thermodynamic, enthalpy and entropy.

(*b*) Explain combined effect of pH and Solvents on solubility.

(*c*) Give significance of glass transition temperature in Pharmaceuticals.

(*d*) Derive Bragg's equation and give its significance.

(*e*) Discuss effect of various parameters on solubility.

(*f*) State laws of thermodynamics.

(*g*) Discuss applications of distribution phenomenon.

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

(*a*) Factors affecting crystallization and crystal size

(*b*) Solubility of gases in liquids

(*c*) Effect of temperature on molecular behavior

(*d*) Solubility parameter.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-3002

S.Y. B.Pharmacy (III Sem.) EXAMINATION, 2018

PHARMACEUTICAL MICROBIOLOGY

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) Answers to the two Sections should be written in separate answer-books.

(*ii*) Neat diagrams must be drawn wherever necessary.

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

(*iv*) *All* questions are compulsory.

SECTION I

1. Attempt any *one* : [10]

What is culture media ? What are the different types culture media ? Write in details growth curve of bacteria.

Or

Discuss in details the role of microbes in the pharmaceutical and medical field.

2. Attempt any *four* : [12]

(*a*) Diagrammatically represent various shapes and arrangement of bacteria.

P.T.O.

(*b*) Write characteristics of penicllium.

(*c*) How will you detect presence of *E.coli* in non-sterile pharmaceutical preparations ?

(*d*) Explain reproduction by binary fission.

(*e*) What is the difference between growth and reproduction ?

(*f*) What are the contribution of Robert Koch ?

(*g*) Draw the structure of HIV.

3. Write short notes on any *two* : [8]

(*a*) Endospore

(*b*) Multiplication of Human Virus

(*c*) Prebiotic and Probiotics

(*d*) Viable Count Method.

SECTION II

4. Attempt any *one* : [10]

Define Immunity and Describe in details host defense mechanism against infection.

Or

Define Vaccine. Write the method of preparation and quality control of bacterial vaccine.

5. Attempt any *four* : [12]

(*a*) Differentiate between Active and Passive Immunity.

(*b*) What are various chemical classes of disinfectant ?

(*c*) Write a principle and characteristics of antigen-antibody reactions.

(*d*) Write a principle of ELISA Test.

(*e*) Write note on microbial virulence.

(*f*) Comment "Moist heat sterilization is more superior to dry heat sterilization".

(*g*) Differentiate between endotoxin and exotoxin.

6. Write short notes on any *two* : [8]

(*a*) Phenol Coefficient test

(*b*) Moist Heat sterilization

(*c*) Antigen-antibody reaction

(*d*) Classes of Immunoglobulin.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-3003

S.Y. B. PHARMACY (III Semester) EXAMINATION, 2018
PHARMACEUTICAL BIOCHEMISTRY
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer-books.

(*iii*) Neat diagrams must be drawn wherever necessary.

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

SECTION I

1. Explain effect of substrate concentration on anzyme activity. Discuss K_m and V_{max}. 10

Or

Explain DNA Replication in Eukaryotic Cell.

2. Attempt short notes on any *four* of the following : 12

(*a*) Biological role of hyaluronic acid and heparin

(*b*) Colour reactions of proteins

(*c*) Genetic code of Eukaryotic cell

(*d*) Classification of Lipids

(*e*) Applications of enzymes with emphasis on marker enzymes

(*f*) End Group analysis

(*g*) Biological role of any *three* important amino acids.

P.T.O.

3. Write notes on any *two* of the following : 8

(*a*) Fibrous proteins

(*b*) Secondary structure of proteins

(*c*) Scope of Pharmaceutical Biochemistry in Pharmaceutical Sciences

(*d*) Essential Fatty Acids.

SECTION II

4. Explain the steps involved in both phases of HMp shunt. Give the significance of this metabolic pathway. 10

Or

Explain beta oxidation of unsaturated fatty acid. How are fats a better fuel than carbohydrates ?

5. Attempt short notes on any *four* of the following : 12

(*a*) Ketone bodies

(*b*) Deamination of Amino Acids

(*c*) Oxidative phosphorylation

(*d*) Vitamin K

(*e*) Biosynthesis of Amino Acids

(*f*) Glycerol metabolism

(*g*) Glycogenolysis.

6. Write notes on any *two* of the following : 8

(*a*) Cholesterol synthesis and utilization

(*b*) Pyrimidine biosynthesis

(*c*) Urea cycle and its significance

(*d*) Gluconeogenesis.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-3004

Second Year B.Pharmacy (III Sem.) EXAMINATION, 2018
PHARMACEUTICAL ORGANIC CHEMISTRY—III (Theory)
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answer of the *two* sections should be written in **2** separate books.
(*iii*) Digits written at right side indicate full marks of that question.

SECTION - I

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

i) Define and classify carbohydrates. Draw structure of D and L glucose. Add a note on mutarotation.

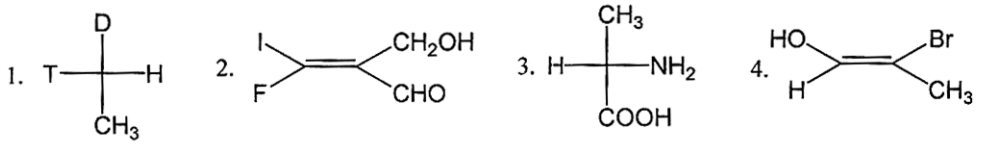
OR

ii) Describe any 5 methods of resolution of racemic mixture.

Q2) Attempt any four of the following ***[4x3=12]***

i) Why trans isomer is more stable than cis isomer?

ii) Give configuration of following isomers (any 3)



iii) Write a short note on osazone formation.

iv) Differentiate a) enantiomer & diastereomer, b) meso form & racemic mixture.

P.T.O.

v) Define stereoisomer. Explain how you will calculate number of stereoisomers by taking any one example.

vi) Explain Killiani-Fischer synthesis.

vii) Write rules of R,S configuration.

viii) Write conformations of ethane.

Q3) Attempt any 2 of the following ***[2x4=8]***

i) Describe confirmation isomerism of n-butane with energy profile diagram.

ii) Why chair conformation of cyclohexane is most stable than its other conformations?

iii) Describe any 4 chemical reactions of glucose.

iv) Explain conformations of decalin.

SECTION-II

Q 4) Attempt any one of the following ***[10]***

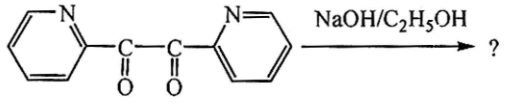
i) Write synthetic reaction for synthesis of aniline using Hoffmann rearrangement and anthranilic acid using Bayer Villiger oxidation. Write mechanism for each reaction.

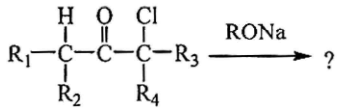
OR

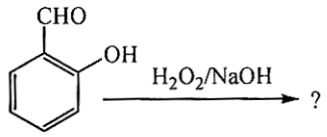
ii) Define and classify amino acids with examples. Add a note on isoelectric point with its significance.

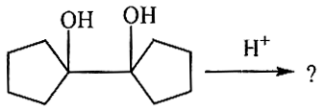
Q5) Attempt any four of the following ***[4x3=12]***

i) Predict the products of following reactions (any 3)

1. 

2. 

3. 

4. 

ii) Write note on Gabriel Phthalimide synthesis.

iii) Define and classify Pericyclic reactions with example.

iv) Which rearrangement can be used to convert cyclic ketone to lactone. Write any one reaction for it.

v) Describe reaction and mechanism of Wagner Meerwein rearrangement.

vi) What is Strecker synthesis?

vii) Explain cycloaddition reaction.

Q6) Attempt any two of the following. ***[2x4=8]***

i) Peptide bonds.

ii) Beckmann rearrangement

iii) Favorksii rearrangement

iv) Dakin oxidation

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-3005

Second Year B.Pharm. (III Sem.) EXAMINATION, 2018
PHARMACOLOGY—I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Figures to the right indicate full marks.
(*iii*) Write answers for the Section-1 and Section-2 in separate answer-sheets.

Section -1

Q.1 Discuss in detail transportation of drug across plasma membrane. **(10)**

OR

Q.1 Discuss the factors affecting bioavailability of drug. **(10)**

Q.2. Solve any four **(12)**

a) Enlist different sources of drugs. (03)
b) Enlist the factors affecting drug distribution? (03)
c) Enlist the organs and enzymes involved in drug metabolism? (03)
d) What is half-life of drug? Give its importance. (03)
e) What are different routes of drug administration? (03)
f) What are clinical trials? What are different phases of clinical trials? (03)
g) Define drug absorption, distribution and metabolism. (03)

Q.3 Solve any two **(08)**

a) What are advantages and disadvantages of oral and parenteral route of drug administration? (04)
b) Write a short note on therapeutic drug monitoring. (04)
c) Elaborate role of plasma protein binding in drug distribution. (04)
d) Explain new drug discovery and development process. (04)

Section -2

Q.4 What is dose response curve (DRC)? Explain different types of DRC with their limitations and importance. **(10)**

OR

Q.4 Discuss synthesis, storage, release and pharmacological actions of serotonin. **(10)**

P.T.O.

Q.5	**Solve any four**	**(12)**
a)	What are different types of drug receptors? Give examples.	(03)
b)	Define agonist and antagonists and give their examples.	(03)
c)	Enlist physiological changes in geriatric patients.	(03)
d)	Define and classify drug interactions with examples.	(03)
e)	Discuss pharmacological actions and therapeutic uses of prostaglandins.	(03)
f)	Define Mutagenicity, Carcinogenicity and Teratogenicity.	(03)
g)	What do you mean by drug synergism and antagonism?	(03)
Q.6	**Solve any two**	**(08)**
a)	Discuss drug therapy in pediatric patients.	(04)
b)	Explain biological and psychological factors affecting drug action.	(04)
c)	Discuss transduction mechanism of G-protein coupled receptor.	(04)
d)	Explain pharmacological actions and uses of antihistaminic agents.	(04)

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-3006

Second Year B.Pharm. (III Sem.) EXAMINATION, 2018
PHARMACOGNOSY & PHYTOCHEMISTRY—I
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Figures to the right indicate full marks.
(*iii*) Answers to the two sections be written in separate answer-books.
(*iv*) Draw neat and labelled diagram wherever necessary.

Section - I

1. What are secondary metabolites? Write a detailed note on the significance & role of secondary metabolites in human healthcare with examples. [10]

OR

What are carbohydrates? Write a detailed not on Occurrence, properties, tests and pharmaceutical applications of Carbohydrates. Add a note on Inulin.

2. Answer any four questions: [12]

a) Write short note on Isabagol.
b) Write a Short note on Cod liver oil
c) Explain different evaluation parameters for fats and oils
d) Write short note on Papain.
e) What are organised and unorganised drugs?
f) Give the uses of wool & Jute.
g) Explain the significance of synonyms and titles of crude drugs with examples.

3. Write short notes on any two: [8]

a) Kokum Butter and Cocoa Butter.
b) Lecithin/ PUFA.
c) Pharmacognostic study of Agar & Acacia.
d) Extraction of carotenoids.

P.T.O.

Section - II

4. What are glycosides? Classify with examples. Add a short note on anthraquinone glycosides. [10]

OR

What are Tannins? Explain with examples. Give the tests for identification of Tannins. Add a note on Beheda.

5. Answer any four questions: [12]

a) Write general chemical tests for Aloe

b) Differentiate between cardenolides and bufadienolides

c) Give the properties and applications of Ginseng.

d) Which characteristics distinguish the Indian and Alexandrian Senna?

e) How is pale catechu prepared?

f) Describe uses of amla. Give any 2 marketed preparations of amla.

g) Give the test for identification of cardiac glycosides.

6. Write short notes on any two: [8]

a) Steroidal glycosides.

b) Biogenesis of Glycosides

c) Myrobalan

d) Kalmegh & Digitalis.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-4001

S.Y. B.Pharmacy (IV Sem.) EXAMINATION, 2018
PHYSICAL PHARMACEUTICS—II
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Neat diagrams must be drawn wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION - I

Q.1 Explain in details surface active agents and add a note on HLB scale. 10 marks

OR

Explain the methods to determine shelf life of a pharmaceutical formulation. Write a note on accelerated stability studies.

Q.2 Attempt any four of the following : 12 marks

a. Explain the mechanism for oxidation as degradation pathway with examples.
b. Describe collision theory of chemical reaction.
c. What do you understand by viscoelasticity?
d. Explain why interfacial tension cannot be measured by capillary rise method.
e. Sate the importance of critical micelle concentration.
f. Illustrate the applications of thixotrophy in pharmaceutical formulations.
g. Explain the principle behind Ostwald viscometer.

Q.3. Write notes on any two of the following : 8 marks

a. Langmuir adsorption isotherm
b. DuNouy Ring method
c. Reversible reactions
d. Dilatant flow

P.T.O.

SECTION - II

Q.4 Define Micromeritics. Enlist different methods used for the determination of particle size and discuss in detail the Andreason Pipette method. 10 marks

OR

Differentiate between lyophobic and lyophillic colloids. Discuss the stability of colloids including: a) Schulze-Hardy rule b) Hofmeister series c) Co-acervation

Q.5 Attempt any four of the following : 12 marks

a. Explain: Protective colloid.

b. What is meant by "equivalent spherical diameter"? Explain its importance in representing particle size.

c. Give Pharmaceutical applications of colloids.

d. Describe the process of Micellar solubilization. Give its applications in pharmacy.

e. Draw a neat and labelled diagram of Coulter counter apparatus. In a Coulter counter, electrolyte solution is added in order to measure size distribution. Why?

f. Explain the concept of Donnan-membrane equilibrium.

g. With suitable examples explain factors affecting flow of powders.

Q.6. Write notes on any two of the following : 8 marks

a. Optical properties of colloids

b. Specific surface and its determination

c. Brownian motion and Gold number

d. Derived properties of powders

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-4002

S.Y. B.Pharmacy (IV Sem.) EXAMINATION, 2018
PATHOPHYSIOLOGY & CLINICAL BIOCHEMISTRY
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Neat labelled diagrams must be drawn wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION I

Q.1 Discuss and classify cardiac shock. Explain pathophysiology of cardiac shock. [10]

OR

Define and classify ulcer. Explain in detail pathophysiology of peptic ulcer.

Q.2*Attempt any four of the following* : [12]

a) Write the etiology of angina pectoris.

b) Define and enlist the types of COPD.

c) Define diarrhea, constipation, and pneumonia.

d) Write the complications of hypertension.

e) Define and enlist the types of hepatitis.

f)Write the clinical manifestation of Gall stone.

g) Discuss the pathophysiology of Buerger's disease.

Q.3*Write notes on the following (Any two)* [8]

a) Pain
b) Tuberculosis
c) Cardiac arrhythmia
d) Cell injury

SECTION II

Q.4. Discussdetail pathophysiology of Malignancy. [10]

OR

Discuss etiology and treatment of Renal failure in detail.

P.T.O.

Q.5. Attempt any four **[12]**

a) Write etiology of infertility.

b) Define: i) Etiology ii) Osteoarthritis iii) Insomnia

c) Explain hypothyroidism in brief.

d) Discuss in brief types of malignancy.

e) Explain in brief leukemia.

f)Define and enlist types of depression.

g) Explain in brief PCOD.

Q.6. Write note on following (any two) **[08]**

a) Anemia

b) Acute urinary tract infections

c) Epilepsy

d) Osteoarthritis

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-4003

S.Y. B. PHARMACY (IV Semester) EXAMINATION, 2018

PHARMACEUTICAL ORGANIC CHEMISTRY-IV

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) Answers to the two sections should be written in separate books.

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

(*iii*) All questions are compulsory.

Section-I

1. Give a detail account of methods of synthesis and reactions of Pyridine. [10]

Or

Give the structure, numbering of the following heterocycles with *one* example of drug belonging to each : [10]

(*a*) Hydantoin

(*b*) Isoxazole

(*c*) Pyridazine

(*d*) Coumarin

(*e*) Pyrrole.

2. Solve any *four* : [12]

(A) Why furan undergoes electrophilic substitution reactions preferentially at C-2 and C-5 ?

P.T.O.

(B) Give the structure of the following :

(*i*) 2,6-diethoxypyridine

(*ii*) Propyl-3-ethylfuran-2-carboxylate

(*iii*) 7-(methoxymethyl) quinoline

(C) Give resonance structures of pyrrole and its one method of synthesis.

(D) Why quinoline gives electrophilic aromatic substitution at C-5 and C-8 ?

(E) Explain acidic and basic character of imidazole.

(F) Give any *two* methods of synthesis of pyrrole.

(G) Give any *two* reactions of thiophene.

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

(A) Reactions of Pyrrole

(B) Furan

(C) Quinoline

(D) Anthracene.

Section-II

4. Explain basic principle of Microwave assisted synthesis. Add a note on techniques of microwave assisted synthesis and applications of microwave assisted synthesis in pharmaceutical organic chemistry. [10]

Or

What is combinatorial synthesis ? Comment on mix and split synthesis in Combinatorial chemistry. Give applications of Combinatorial chemistry. [10]

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

(*a*) Write rules of disconnection.

(*b*) Give the role of aluminium isopropoxide in organic reactions.

(*c*) Explain the method of preparation of NBS.

(*d*) Explain the reactions and uses of diazomethane.

(*e*) Explain the common terms in retrosynthesis approach.

(*f*) Explain the method of preparation of DDQ.

(*g*) Explain the reactions and uses of halogenating agents.

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

(*a*) Objective of retrosynthesis approach.

(*b*) Deconvolution method in combinatorial chemistry.

(*c*) Retrosynthesis of Sulfamethoxazole.

(*d*) DCC.

Total No. of Questions—**3+3**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-4004

S.Y. B.Pharmacy (IV Sem.) EXAMINATION, 2018
244 : PHARMACEUTICAL ANALYSIS—II
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Figures to the right indicate full marks.

Section I

Q.1 Write principle of polarography ,What is half wave potential ? Explain factors affecting limiting current. **[10]**

OR

What is conductometric titration? Explain the method for measurement of conductance.

Q. 2 Attempt any four of the following. **[12]**

a. Explain Molecular and Equivalence conductance

b. Write about Standard calomel electrode.

c. Discuss Dropping mercury electrode with its advantages

d. Explain titration curve for i)strong acid and strong base ii) Weak acid and strong base

e. Give aplications of polarography

f. Write factor affecting variables in Ilkovic equation

g. Advantages of potentiometric titrations

Q. 3 Write notes on any two of the following. **[08]**

a. Secondary reference electrode

b. Cell constant

c. High frequency titratios

d. Ilkovic equation

P.T.O.

Section II

Q.1 Explain in detail types of amperometric titration curves. Add a note on biamperometric titrations. **[10]**

OR

Write principle of coulometry. Discuss in detail constant potential coulometry.

Q. 2 Attempt any four of the following. **[12]**

a. Write applications of coulometry.

b. Discuss principle of Karl fisher titration.

c. Explain types of polarized light.

d. What is Cotton effect?

e. What are Nicol prisms?

f. Write principle of refractometry.

g. Define and give formula for specific and molecular refraction

Q. 3 Write notes on any two of the following. **[08]**

a. Advantages and applications of amperometry

b. Factors affecting angle of rotation

c. Pulfrich refractometer

d. Constant current coulometry

Total No. of Questions—**3+3**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-4005

S.Y. B.Pharm. (Sem. IV) EXAMINATION, 2018

PHARMACOGNOSY AND PHYTOCHEMISTRY–II

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to two sections should be written in two separate answer books.

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

(*iv*) Neat diagrams must be drawn wherever necessary.

SECTION I

1. Classify alkaloids and describe the properties, chemical tests and general method of extraction of alkaloids. [10]

Or

Define alkaloids. Differentiate between true, proto and pseudo alkaloids. Give *one* example of each along with their source and structure. [10]

2. Answer any *four* questions : [12]

(*a*) Draw transverse section of Jesuit's bark.

(*b*) Explain life cycle of Ergot.

(*c*) Differentiate between Rio and Panama ipecac.

P.T.O.

(*d*) Differentiate between *Strychnos nuxvoica* and *Stychnous ignatii*.

(*e*) Write biological source, chemical constituents and uses of any *one* alkaloidal drug from Imidazole class.

(*f*) Write Murexide test and give its significance.

(*g*) Write *three* microscopical difference between Vinca leaf and Vasaka leaf.

3. Write short notes on (Any *two*) : [8]

(*a*) Veratrum

(*b*) Chemistry of tropane alkaloids

(*c*) Colchicum

(*d*) Adultrants and substitutes of Rauwolfia

SECTION II

1. What are terpenoids ? Classify and explain general biosynthetic pathway of terpenoids. [10]

Or

Define Volatile oil. Give their occurrence, chemistry, general methods of extraction and qualitative analysis. [10]

2. Answer any *four* questions : [12]

(*a*) Classify resins with examples.

(*b*) Explain the histological characteristics of Coriander.

(*c*) Give the chemical constituents and uses of Ginseng.

(*d*) Give the biological source of Cannabis including its cultivation and collection.

(*e*) Explain adulterants of Clove.

(*f*) Give the biological source, chemical constituents and uses of Coleus.

(*g*) Enlist the chemical constituents and uses of Boswellia.

3. Attempt any *two* of the following : [8]

(*a*) Differentiate between Indian and American Podophyllum

(*b*) Give the Pharmacognostic account on "Guggul".

(*c*) Write a note on Cinnamon.

(*d*) Explain tetraterpenoids containing drugs.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-4006

S.Y. B. PHARMACY (IV Semester) EXAMINATION, 2018

PHARMACEUTICAL ENGINEERING

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the *two* sections should be written in separate answer-books.

(*iii*) Neat labeled diagrams must be drawn wherever necessary.

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

Section-I

1. Explain different mechanisms of heat transfer in detail. Elaborate on heat transfer to boiling liquids. [10]

Or

Classify evaporators and explain capacity and efficiency of multiple effect evaporator in comparison to single effect evaporator.

2. Attempt any *four* of the following : [12]

(*a*) Explain thermostatic traps for removal of condensates.

(*b*) Differentiate between evaporation and drying.

(*c*) Discuss factors affecting drying process.

(*d*) Illustrate molecular diffusion of gases.

(*e*) Explain Fourier's law of heat transfer.

(*f*) Describe working of drum dryer.

(*g*) Explain mass transfer in laminar and turbulent flow.

P.T.O.

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

(*a*) Forced circulation evaporator

(*b*) Fluidised bed dryer

(*c*) Theories of interphase mass transfer

(*d*) Plate heat exchangers.

Section-II

4. Discuss crystallization phenomenon with reference to supersaturation nucleation and crystal growth. [10]

Or

Define and explain distillation process with the help of boiling point diagrams. Elaborate on distillation of miscible and immiscible systems.

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

(*a*) Describe significance of Reynold's number.

(*b*) Explain working of inclined manometer.

(*c*) Describe factors affecting corrosion.

(*d*) Explain quantity flow meter.

(*e*) Illustrate fractionating columns used in distillation process.

(*f*) Explain factors affecting crystal growth.

(*g*) Describe differential distillation process.

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

(*a*) Causes for caking of crystals and preventive measures for it.

(*b*) Methods for combating corrosion.

(*c*) Energy losses in fluid flow through pipe.

(*d*) Swenson Walker crystallizer.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5001

T.Y. B.Pharmacy (V Sem.) EXAMINATION, 2018

INDUSTRIAL PHARMACY—I

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the *two* sections should be written in separate books.

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

(*iv*) Neat diagrams must be drawn wherever necessary.

SECTION I

1. Attempt any *one* question : [10]

(*a*) Explain in detail IP 2010 evaluation tests for tablets along with specifications.

(*b*) What is Pelletization ? Describe in detail steps involved in extrusion spheronization.

2. Solve any *four* : [12]

(*a*) Give classification of tablet.

(*b*) Give construction and working of high speed mixer granulator with diagram.

(*c*) Explain process of fluid bed coating.

P.T.O.

(*d*) Explain *Rumpf* classification.

(*e*) What is the need for granulation.

(*f*) Explain different stages in tablet formation.

(*g*) Explain in brief mechanism involved in tablet disintegration.

3. Solve any *two* : [8]

(*a*) Describe biopharmaceutical principles of dosage form design.

(*b*) Give an account of different approaches to formulation of mouth dissolving tablets.

(*c*) Describe tablet friability apparatus and procedure to measure friability.

(*d*) Discuss schedule M guidelines for tablet manufacturing.

SECTION II

4. Answer the following (any *one*) : [10]

(*a*) What is the purpose of tablet coating ? Discuss the common defects associated with coated tablets and some likely causes and the remedies thereof.

(*b*) Enlist various materials used in capsule shell manufacturing. Discuss in detail the process of manufacturing and quality control of gelatin used in the capsule shell.

5. Solve any *four* : [12]

(*a*) Explain weight variation test of soft gelatin capsules.

(*b*) What is the purpose of enteric coating of tablet ?

(*c*) Discuss the problems involved in filling of hard gelatin capsule.

(*d*) Discuss various components used in coating composition.

(*e*) Distinguish between hard and soft gelatin capsules.

(*f*) Explain the plate process used in manufacturing of soft gelatin capsules.

(*g*) Enlist various variables affecting coating process.

6. Solve any *two* : [8]

(*a*) Write a note on Rotary die process used for manufacturing of soft gelatin capsule.

(*b*) Write a note on Accelacota and Dri coater system.

(*c*) Discuss the manufacturing of hard gelatin capsule shell, standards and defects.

(*d*) Write a note on sugar coating.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5002

B. PHARMACY (Third Year) (Fifth Semester) EXAMINATION, 2018
PHARMACEUTICAL ANALYSIS-III
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer books.

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

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

Section I

1. State Beer Lambert's Law. Draw a neat diagram of double beam UV spectrophotometer and explain functioning of each part. [10]

Or

Explain theory of UV-Visible spectrophotometry. Discuss in detail various transitions of outermost electrons in molecule.

2. Attempt any *four* of the following : [12]

(*a*) Explain concept of photometry measurement.

(*b*) Discuss *two* radiation sources used in UV-Visible Spectroscopy.

(*c*) Discuss electromagnetic radiations.

(*d*) Explain Bathochromic shift and Hypsochromic shift.

P.T.O.

(*e*) Discuss separation techniques based on complexation.

(*f*) Explain simultaneous equations method in UV-Visible Spectroscopy.

(*g*) Describe separation techniques based on density.

3. Write notes on any *two* of the following : [8]

(*a*) Diffraction, refraction and scattering of radiation

(*b*) Derivative Spectrophotometry

(*c*) Sample preparation for analysis

(*d*) Separation of analytes from interferents

Section II

4. Explain instrumentation of flame photometry. [10]

Or

Discuss in detail about instrumentation of Phosphorimeter.

5. Attempt any *four* of the following : [12]

(*a*) Explain principle of Atomic emission spectroscopy.

(*b*) Describe applications of Nepheloturbidimetry analysis.

(*c*) Describe photomultiplier detector used in Atomic absorption spectroscopy.

(*d*) Explain principle and theory of Nephelometer.

(*e*) Describe synchronous fluorescence spectra.

(*f*) Discuss relation between intensity of fluorescence and concentration.

(*g*) Describe applications of Atomic absorption spectroscopy.

6. Write notes on any *two* of the following : [8]

(*a*) Direct Current Plasma Source (DCP)

(*b*) Hollow cathode lamp

(*c*) Applications of fluorimetric analysis

(*d*) Oxidants and fuels in Atomic absorption spectroscopy

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5003

T.Y. B. Pharmacy (V Sem.) EXAMINATION, 2018

MEDICINAL CHEMISTRY–I

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer sheets.

(*iii*) Write neat structures and diagrams wherever necessary.

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

SECTION I

1. Discuss the role of solubility, partition coefficient and hydrogen bonding on drug action citing suitable examples under each parameter. [10]

Or

What are antihypertensive agents ? Classify them giving the structure and IUPAC of at least *one* drug belonging to each class. Discuss in detail the calcium channel blockers. [10]

2. Attempt any *four* questions. Each question carries **3** marks. [12]

(*a*) Write about various sites of pre-systemic metabolism

(*b*) Write structure and uses of :

(*i*) Guanethidine

(*ii*) Salbutamol

P.T.O.

(*c*) Discuss any *one* HMGCoA reductase inhibitor in detail.

(*d*) Write about Glucuronide conjugation in drug metabolism

(*e*) Write a note on neuromuscular blocking agents.

(*f*) Give an account of forces involved in drug receptor interaction.

(*g*) Explain how partition coefficient affects drug action.

3. Solve any *two* questions. Each question carries **4** marks. [8]

(*a*) How bioisosterism affects drug design ?

(*b*) Enumerate the structural features essential for directly acting sympathomimetic agents.

(*c*) Write a note on cardiac glycosides.

(*d*) Discuss in detail the irreversible AchE inhibitors.

SECTION II

4. What are the various types of receptors ? Discuss each type in detail with the help of examples and neat diagrams. [10]

Or

What are sympathomimetics ? Discuss the structural features important for such agents giving examples. [10]

5. Attempt any *four* questions. Each question carries **3** marks. [12]

(*a*) Write a note on stereochemistry of Ach.

(*b*) Differentiate passive and active transport.

(*c*) Give the scheme of synthesis for prazosin.

(*d*) Write a note on potassium sparing diuretics.

(*e*) Discuss the SAR of cholinomimetics.

(*f*) Discuss any *one* adrenergic receptor blocking agent.

(*g*) Write the scheme of synthesis for clofibrate.

6. Solve any *two* questions. Each question carries **4** marks. [8]

(*a*) Discuss various theories designed to explain drug receptor interaction.

(*b*) Write a note on rennin-angiotensin system. Discuss any *one* ACE inhibitor.

(*c*) Write the structure and uses of carbonic anhydrase inhibitors.

(*d*) Classify adrenergic receptors and comment on their importance.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5004

T.Y. B.Pharm. (V Semester) EXAMINATION, 2018

PHARMACOLOGY—II

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) Answers to the *two* sections should be written in separate answer books.

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

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

SECTION I

1. Attempt any *one* : [10]

(*a*) Classify sympathomimetic drugs. Discuss biosynthesis, mechanism of action, pharmacological actions and therapeutic uses of catecholamines.

Or

(*b*) Define and classify parasympathomimetics drugs. Discuss mechanism of action, pharmacological actions and adverse drug reaction, therapeutic uses of atropine.

2. Attempt any *four* : [12]

(*a*) Enlist types of adrenergic receptors and their tissue distribution.

P.T.O.

(*b*) Explain biosynthesis and degradation of acetyl choline.

(*c*) Write the symptoms and treatment of Organo phosphate poisoning (OPC).

(*d*) Explain mechanism of action of ganglion blockers.

(*e*) What is cholinergic crisis ?

(*f*) Classify skeletal muscle relaxants. Write therapeutic uses of baclofen.

3. Write notes on any *two* : [8]

(*a*) Beta blockers

(*b*) Pharmacotherapy of Myasthenia gravis

(*c*) Antichlolinesterases.

SECTION II

4. Attempt any *one* : [10]

(*a*) Classify antihypertensive agents. Write pharmacology of Calcium Channel Blockers.

Or

(*b*) Classify bronchodilator drugs. Explain pharmacotherapy of Bronchial asthama.

5. Attempt any *four* : [12]

(*a*) What are the advantages of Angiotensin Receptors Blockers over ACE inhibitors ?

(*b*) Justify the role of cardiac glycosides in treatment of CCF.

(*c*) Explain mechanism of action of quinidine.

(*d*) Write the treatment for cough.

(*e*) Explain mechanism of action and therapeutic uses of vasopressin.

(*f*) Explain mechanism of action and adverse effects of clonidine.

6. Solve any *two* : [8]

(*a*) Write a detailed note on Potassium sparing diuretics.

(*b*) Classify antianginal drugs. Describe the therapeutic utility of vasodilators in angina pectoris.

(*c*) Explain the pharmacology of mast cell stabilizers.

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5005

Third Year B.Pharmacy (V Sem.) EXAMINATION, 2018
ANALYTICAL PHARMACOGNOSY AND EXTRACTION TECHNOLOGY (Theory)
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Answers to the two sections should be written in separate answer-books.
(*iii*) Neat diagram must be drawn wherever necessary.
(*iv*) Figures to the right indicate full marks.

SECTION-I

Q 1) Attempt any one of the following. [10]

a) Explain Principle, working, merits, demerits & applications of

i. Supercritical Fluid Extraction

ii. Microwave Assisted Extraction

b) Explain Principle and Applications of HPLC in detail. Differentiate between HPLC and HPTLC.

Q 2) Attempt any Four of following. [12]

a) Draw Neat Labeled Diagram of Soxhlet Apparatus.

b) Explain Principle of TLC with suitable diagram.

c) Emphasize on Isolation of Isoflavones from Soy.

d) What is Enfleurage method? Explain with reference of Isolation of Rose oil.

P.T.O.

e) Draw the Structures of the following

i. Curcumin

ii. Demethoxycurcumin

iii. Bisdemethoxycurcumin

f) Elaborate in detail about Froth Flotation Technique.

g) Write Sources of Strychnine, Reserpine and Pyrethrines.

Q 3) Write a Note on Any Two. [8]

a. Paper Chromatography

b. Podophyllotoxin.

c. Fractional Distillation.

d. Steam Distillation of Peppermint Oil

SECTION-II

Q 4) Attempt any one of the following. [10]

a) Describe in detailed

i. Importance and procedure of proximate phytochemical analysis

ii. DNA fingerprinting

b) Describe in detailed theory, method and importance involve in determination of different types of ash value and moisture content as per WHO.

Q 5) Attempt any Four of following. [12]

a) Give details of haemolytic activity.

b) Give principle and significance of pesticide residue in herbal drug analysis.

c) Give social importance of herbal drug analysis.

d) Explain in detailed importance of Foamimg index.

e) Define following terms

i. Extractable matter

ii. Direct adulteration

iii. Bitterness value

f) Elaborate in detailed difficulty encounter in herbal drug standardization.

g) Provide quality control parameters for Aflatoxins contamination.

Q 6) Attempt any Two. [8]

a. Provide outline of Good laboratories practices for pharmaceutical laboratories (as per WHO).

b. Give principle and procedure of sampling.

c. Explain principle, method and importance of Tannin content determination (as per WHO).

d. Explain procedure and significance in determination of Microorganism.

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-5006

THIRD YEAR B. PHARMACY (V SEM.) EXAMINATION, 2018

PHARMACEUTICAL BUSINESS MANAGEMENT AND DISASTER MANAGEMENT

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.
(*ii*) Figures to the right indicate full marks.
(*iii*) Answer of each section should be written in separate answer-book.

SECTION-I

Q.No.1.Give definition, purpose, types, importance, advantages and limitations. of planning. **10**

OR

Q.No.1.Give detail account on break even analysis and network techniques. **10**

Q. No.2. Answer the following (any four) **12**

A)Departmentalization
B) Advantages and limitations of decentralization
C) Functions of management.
D) Management thoughts.
E) Difference between marketing and selling.
F) Inventory control.
G) Types of objectives.

P.T.O.

Q.No. 3. Write short note on (any two) **08**

A) Role of drug store and hospitals related to patient care management.
B)Objectives and principles of purchasing.
C) Management by objectives.
D) Definition and Importance of decision making, types of decision.

SECTION-II

Q.No.4. Give definition, importance, functions, process, forms and types of communication. **10**

OR

Q.No.4. Give methods, analysis, advantages and limitations sales forecasting.**10**

Q. No.5. 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 ofprices.
G) Medical representative.

Q. No. 6. Write short note on (any two) **08**

A) The Disaster Management cycle
B) Advertising
C)Sales promotion
D) Performance appraisal

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-5007

B. PHARM. (V SEM.) EXAMINATION, 2018
ACTIVE PHARMACEUTICAL INGRENDIENTS TECHNOLOGY
(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) Answers to the two Sections should be written in separate answer-books.
(*ii*) Neat diagrams must be drawn wherever necessary.
(*iii*) Figures to the right indicate full marks.
(*iv*) *All* questions are compulsory.

SECTION I

Q.1] What is nitration? Discuss nitrating agents in detail. Give manufacturing process of Nitroglycerin. **[10]**

OR

What is Esterification? Give details of types of Esterification. Give manufacturing process of Ethyl Acetate. **[10]**

Q.2] Attempt any four **[12]**

A) **How does nature of Reactants and Raw Materials affect the chemical process?**

B) **Differentiate between Batch and Continuous Nitration**

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

D) **Give details of types of reactors used in API Unit process.**

E) **Give details of Homogenous and Hetrogenous Liquid phase reactions**

F) **What is Hydrolysis? Give details of its types.**

G) **Give details of Fine Chemical Industry.**

P.T.O.

Q.3] Write Short note on (Any Two) **[8]**

A) Centrifuges used in API mfg. Unit

B) Industrial Manufacturing and flow chart of Amlodipine

C) Chemical and physical factors affecting Beechamp Reduction

D) Oxidation as Unit process

SECTION II

Q.4] What is chirality ? Give significance of Chirality in API Industry ? Discuss various methods of Asymmetric synthesis **[10]**

OR

Give details of work-up and product isolation in API synthesis **[10]**

Q.5] Attempt any four **[12]**

A) Discuss Chromatographic tools for purifying the API compounds

B) Describe Mechanochemical methods of preparation of Polymorphs

C) What is MSDS? describe its contents

D) Give details Reagent selection in API synthesis

E) Discuss in short " Scale-up" in API Synthesis

F) Outline Asymmetric synthesis of Propranolol

G) Discuss the importance of reaction safety before running the reaction

Q.6] Write Short Note on (ANY TWO) **[8]**

A) Process layout diagram of API mfg. Unit

B) Give details as per Q7 Guideline about :

i) Master Production Instructions

ii) Batch Production Records

C) CMC Document

D) Methods of Identifying Polymorphs

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-6001

Third Year B.Pharmacy (VI Sem.) EXAMINATION, 2018

INDUSTRIAL PHARMACY—II

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer-books.

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

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

Section I

Q.1 Solve any One (10)

a Explain formulation of flocculated suspension and its stability with respect to DLVO theory.

b Give an account of excipients used in suspension formulation.

Q2 Answer the following (Any four) (12)

a Define suspensions. Explain thermodynamic stability of suspensions.

b Describe Volume of sedimentation and redispersibility test for suspensions.

c Discuss application of Stokes law in suspension stability.

d Describe approach to formulation of flocculated suspension in structured vehicle.

e What is a pilot plant? Give considerations for development of pilot plant.

f Explain and differentiate between coagules and floccules.

g The oil phase of an emulsion is composed of 15 % oil A (RHLB 9) and 10% oil B (RHLB 12). What will be the net RHLB of combined oil phase?

Q3 Write Short Note (Any two) (08)

a Microemulsions

b Controlled flocculation

c Impellers used in suspension formulation

d Ostwalds ripening

P.T.O.

Section II

Q.4 Solve any One (10)

a Discuss the factors affecting formulation of semisolid dosage form

b Discuss the layout and designing of manufacturing facility for Suspension as per schedule M

Q5 Answer the following (Any four) (12)

a Enlist the factors to be considered in selection of equipment

b Write a note on Flux

c Discuss selection criteria for bases

d Classify semisolids

e Discuss the significance of penetration enhancer

f Define and differentiate between water miscible and water soluble bases.

g Discuss the principle, formulation and evaluation of cetrimide cream

Q6 Write Short Note (Any two) (08)

a Technology transfer for disperse system

b Equipments used for emulsion

c Creams

d Evaluation of semisolids

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-6002

Third Year B.Pharmacy (VI Sem.) EXAMINATION, 2018

PHARMACEUTICAL ANALYSIS—IV

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer-books.

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

SECTION – I

Q. 1 Explain principle of TLC. Discuss various stationary phases and mobile phases used in TLC. [10]

OR

Write theory and development of Paper chromatography. Discuss the applications of paper chromatography.

Q. 2 Attempt **any four** of the following. [12]

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

b) Write the applications of TLC.

c) Explain Resolution and Capacity factor.

d) Write about column packing techniques.

e) Discuss the merits of HPTLC.

f) Discuss various types of Chromatographic papers.

g) Discuss instrumentation of Electrophoresis

P.T.O.

Q. 3 Write a note on **any two** of the following [8]

a) Types of HPTLC development chambers

b) Applications of HPTLC.

c) Applications of Electrophoresis.

d) Rate theory of chromatography.

SECTION – II

Q. 4 Discuss in details of instrumentation of DTA [10]

OR

Explain how cell selection play important role in thermal science?

Also write about differential scanning calorimetry

Q. 5 Attempt **any four** of the following. [12]

a) Spectrophotometric method validation

b) Write about method precision and system precision

c) Importance of glass transition and vitrification

d) Qualification of Instrument

e) Isotopic dilution method

f) Explain various methods for determination of LOD and LOQ

g) Explain role of Isothermal calorimetry for studying thermo dynamic properties

Q. 6 Write a note on **any two** of the following [08]

a) X-ray gas filled transducer

b) Applications of Thermo-gravimetry

c) Polymorphism

d) Neutron activation process

Total No. of Questions : 6]

SEAT No. :

P1737

[Total No. of Pages : 2

[5345]-6003
Third Year B. Pharm. (Semester - VI)
MEDICINAL CHEMISTRY - II
(2015 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) Discuss phase I and phase II reactions in drug metabolism with suitable examples. **[10]**

OR

Classify sedative and hypnotics with suitable example from each class. Discuss SAR and MOA of oxazolidinediones. **[10]**

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

a) Describe inhalational anaesthetics.

b) Draw synthesis of mepivacaine.

c) Write IUPAC name and structure of phenytoin and caffeine.

d) Classify general anaesthetics with suitable example.

e) Write metabolic pathway for metformin.

f) Write SAR of barbiturates.

g) Outline the synthesis of diazepam.

P.T.O.

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

a) Classify local anaesthetics. Add a note on local anaesthetics containing ester linkage.

b) Write a note on benzodiazepines.

c) Discuss drug metabolism by reduction reactions.

d) Explain SAR and MOA of sodium valproate.

SECTION - II

Q4) Define Antidepressant drugs with their MoA. Classify them, giving example with structure of each class and add synthesis of Amitryptyline. **[10]**

OR

Give detailed account on SAR of Phenothiazene. Give synthesis of Chlorpromazine. **[10]**

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

a) Write a brief note on analeptic drugs.

b) Name and draw the structures of any three tricyclic anti-depressant drugs.

c) Give synthesis of Haloperidol.

d) Add a note on Anti-coagulating agents.

e) Give synthesis of Warfarin.

f) Draw the structures of phenothiazine, containing propyl piperazine side chain.

g) Give SAR of Butyrophenone.

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

a) Drugs used in the treatment of Parkinson's disease.

b) Psychotropic agents.

c) CNS stimulants.

d) Rauwolfia alkaloids

▽▽▽▽

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-6004

Third Year B.Pharmacy (VI Sem.) EXAMINATION, 2018

PHARMACOLOGY—III

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer-books.

(*iii*) Neat labelled diagrams must be drawn wherever necessary.

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

SECTION - I

Qno 1) Classify Sedative Hypnotics.Explain the pharmacological actions, adverse effects & therapeutic uses of Benzdiazepines. **10 marks**

OR

Classify General Anesthetic drugs. Explain in detail various stages of General Anesthesia. Explain the ideal properties ofGeneral Anesthetic agent.

Qno 2) Answer the following (any four) **12 marks**

a) What are the signs, symptoms and treatment of barbiturate poisoning?

b) Define the following

i) General Anaesthesia ii) Sedative iii) Hypnotics.

c) Explain Preanesthetic medication.

d) Classify antidepressant drugs.

e) Explain Pharmacological actions of Alcohol.

f) Explain Mode of action of Local Anesthetics.

g) Classify Local Anesthetic drugs.

Q No.3) Write notes on (any two) **08 marks**

a) Antianxiety drugs.

b) Antipsychotics.

c) Neuroleptanalgesia.

d) Drugs used in the treatment of epilepsy.

P.T.O.

SECTION - II

Qno 4) Classify Opioid Analgesics. Explain the Pharmacological effects, adverse effects & therapeutic uses of Morphine. **10 marks**

OR

Classify anti-ulcer drugs.Explain in detail the pharmacotherapy of peptic ulcer.

Qno 5) Answer the following (any four) **12 marks**

a) Classify drugs used in the treatment of gout.
b) Define the following
i) Algesia ii) Analgesics iii) Parkinson's disease.
c) Explain types of Opioid receptors.
d) Classify the drugs used in the treatment of Parkinsonism.
e) Explain the therapeutic uses of Aspirin.
f) Explain about peripheral decarboxylase inhibitors.
g) Explain about COX-2 Inhibitors.

Q No.6) Write notes on (any two) **08 marks**

a) Salicylate poisoning
b) Anti-emetics
c) Pharmacotherapy of rheumatoid arthritis
d) Pharmacotherapy of constipation

Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[5345]-6005

T.Y. B. PHARMACY (VI Sem.) EXAMINATION, 2018

NATURAL PRODUCT CHEMISTRY

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be written in separate answer-books.

(*iii*) Draw neat and well labelled diagrams wherever necessary.

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

SECTION I

1. Attempt any *one* of the following : [10]

(*a*) Elaborate role of natural products in new drug discovery.

(*b*) What are natural sweeteners ? Give chemical classification of natural sweeteners and differentiate between Nutritive and Non-nutritive sweeteners. Brief on Liquorice and Gymnema.

2. Attempt any *four* of the following : [12]

(*a*) What is tracer technique ? Give its applications.

(*b*) Explain chemistry of natural sweeteners present in Stevia. Give its application.

P.T.O.

(*c*) Explain in brief application of Receptor binding property in drug discovery.

(*d*) What are applications of Anthocynins in Food and Dye industry ? Give suitable examples.

(*e*) Write chemistry and applications of Chitosan as a natural polymer.

(*f*) Explain in detail use of serendipity berry as a sweetener.

(*g*) Write Biological source, Chemical constituents and uses of Annato.

3. Attempt any *two* : [8]

(*a*) Write a note on Marine drugs used in cardiovascular diseases.

(*b*) What are natural polymers ? Classify with suitable examples. Write a note on plant mucilage used in polymer chemistry.

(*c*) Write chemistry and applications of Indigo and Gelatin.

(*d*) What are methods used in biosynthetic studies ? What is role of grafting in biosynthetic study ?

SECTION II

4. Attempt any *one* of the following : [10]

(*a*) What is importance of dietary supplements in human health ? Explain it with reference to Prebiotics, Probiotics and Omega-3-fatty acids.

(*b*) Brief on Natural products used in Bioavailability enhancers.

5. Attempt any *four* of the following : [12]

(*a*) Write a note on Pyrethrum.

(*b*) What are Carotenoids ? Give its application.

(*c*) Comment on inorganic mineral supplements.

(*d*) Brief on Natural products used in Wound recovery.

(*e*) What is significance of Biofuel in national economy ?

(*f*) Write pharmacognostic account of Pyrethrum.

(*g*) What is role of Curcuma longa in Radiation protection ?

6. Attempt any *two* : [8]

(*a*) Comment on natural skin permeation enhancer.

(*b*) Write role of Piperine in Bioavailability enhancement.

(*c*) Write a note on Biofuel.

(*d*) What are methods of pest control ?

Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[5345]-6006

T.Y. B. PHARMACY (VI Semester) EXAMINATION, 2018

BIO-ORGANIC CHEMISTRY AND DRUG DESIGN

(2015 PATTERN)

Time : Three Hours **Maximum Marks : 60**

N.B. **:—** (*i*) *All* questions are compulsory.

(*ii*) Answers to the two sections should be write in separate answer-books.

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

Section-I

1. Explain physiological role of Cyclooxygenase 1 and 2 and its relevance in drug design. Comment on their inhibitors. [10]

Or

What is molecular recognition ? Explain the process of molecular recognition emphasizing the interactions involved in molecular recognition.

2. Attempt any *four* of the following : [12]

(*a*) Explain biochemical role of HMG CoA reductase and its relevance in drug design.

(*b*) Write a note on molecular adaptation.

(*c*) Write a note on antisense therapy.

(*d*) Write a note on chain terminators in DNA strand breaking.

(*e*) Explain the term proximity effect.

(*f*) Write a note on tyrosine kinase inhibitors.

(*g*) Elaborate on MAO enzyme and its antagonist.

P.T.O.

3. Attempt any *two* of the following : [8]

(*a*) Explain the mechanism of alkylating agents targeting the nucleic acid.

(*b*) Write a note on adrenergic receptors and its agonist.

(*c*) Explain the mechanism of intercalation of DNA with example.

(*d*) Explain the structure and physiological role of GABA A receptor.

Section-II

4. Write in detail about Quantum Mechanics (QM) and Methods used in QM calculations. [10]

Or

Explain lead discovery and methods of lead optimization.

5. Attempt any *four* of the following : [12]

(*a*) Explain concept and applications of QSAR.

(*b*) Write about CoMFA.

(*c*) Write a note on Mechanism-based drug design.

(*d*) Explain Free-Wilson method in QSAR.

(*e*) Give basic objectives of prodrug design and explain need of developing prodrug.

(*f*) Explain ligand-protein interactions observed in molecular docking.

(*g*) Write a note on Drug Discovery and Drug Design.

6. Attempt any *two* of the following : [8]

(*a*) Discuss different approaches to the rational design of enzyme inhibitors.

(*b*) Write the physicochemical parameters in QSAR.

(*c*) Explain briefly about steric parameters used in QSAR.

(*d*) Define the term "Prodrug". Give detailed account on types of prodrug design with suitable examples.

Total No. of Questions : 6]

SEAT No. :

P1738

[Total No. of Pages : 2

[5345]-6007
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) ***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) Explain r DNA technique; Enlist the different types of cloning vectors and explain any Three vectors. **[10]**

OR

What are blotting techniques, explain in detail various blotting technique.

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

a) Draw well labeled diagram of gene machine.

b) What is the Significance of biotechnology?

c) Enlist different enzymes used for r DNA technique with their functions.

d) What is DNA Hybridization.

e) Write about site directed mutagenesis.

f) What is gene sequencing?

g) Write about Gel electrophoresis.

P.T.O.

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

a) Transduction - gene transfer

b) RFLP

c) Restriction endonuclease

d) Conjugation

SECTION - II

Q4) What do you mean by hybridoma technology? Discuss in detail production and applications of monoclonal antibodies. **[10]**

OR

Define fermentation. Discuss in detail down stream processing.

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

a) Give advantages and disadvantages of enzyme immobilization.

b) Define and classify different types of fermenter.

c) Explain in short production of vitamin B_{12}.

d) What are interferons? Give method of production of the same.

e) Give structural aspects of airlift fermenter.

f) Discuss in detail enzyme immobilization by covalent binding.

g) Write a note on germ plasm storage.

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

a) Methods of immobilization

b) Applications of fermentation technology

c) Transgenic animals

d) Human gene therapy

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