Total No. of Questions : 3]

SEAT No. : ____

P925

[Total No. of Pages : 2

[5854]-1001

F.Y. B. Pharmacy

HUMAN ANATOMY and PHYSIOLOGY - I

(2019 Pattern) (Theory) (BP101T) (Semester - I)

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

Instructions to the candidates:

1) ***Figures to the right indicate full marks.***
2) ***Draw an appropriate diagram/s wherever necessary.***

SECTION - I

Q1) **Attempt any five from the followings.** **[5 × 3 = 15]**

a) Explain different types of taste buds.

b) Give structure and functions of artery.

c) Explain formation of haemoglobin.

d) Give composition and functions of blood.

e) Give types of bones with examples.

f) Explain cartilage type of connective tissue.

g) Explain structural organisation of body.

Q2) **Attempt any two from the followings.** **[2 × 10 = 20]**

a) Explain the mechanism of haemostasis.

b) Explain origin and functions of cranial nerves.

c) Explain interior of heart and cardiac cycle.

d) Explain mechanisms for transport across cell membrane.

P.T.O.

Q3) **Attempt any eight from the followings.** **[8 × 5 = 40]**

a) Explain types of joints with examples.

b) Explain electrocardiogram.

c) Explain structure and functions of spleen.

d) Explain Renin Angiotensin System.

e) Explain physiology of hearing.

f) Differentiate between sympathetic and parasympathetic system.

g) Explain physiology of muscle contraction.

h) Explain location and functions of different epithelial tissues.

i) Explain 'Meiosis'.

j) Explain different components and feedback mechanisms for homeostasis.

□□□

Total No. of Questions : 3]

SEAT No. : ____

P926

[Total No. of Pages : 2

[5854]-1002

F.Y. B. Pharmacy

PHARMACEUTICAL ANALYSIS - I

(2019 Pattern) (Semester - I) (Theory) (BP 102T)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw neat labelled diagrams wherever necessary.***

Q1) Answe ANY FIVE objective type questions out of the following :**[5 × 3 = 15]**

a) Write the applications of Precipitation titrations.

b) Give the significance of Nernst equation.

c) How to prepare and standardize of sodium hydroxide solution?

d) Discuss the principle of Polarography.

e) Explain methods of minimizing errors.

f) Write the difference between Iodimetry and Iodometry.

g) Explain significant figures.

Q2) Answer any TWO questions out of the following : **[2 × 10 = 20]**

a) Explain the neutralization curves of Strong Acid with Strong Base and Weak Base with Strong Acid.

b) Discuss the principle and applications of Permaganometry and Dichrometry.

c) Discuss in detail the electrochemical cell. Explain the construction and working of Standard Hydrogen Electrode and Calomel Electrode.

d) Explain metal ion indicators, masking and demasking reagents.

P.T.O.

Q3) Answer ANY EIGHT questions out of the following : **[8 × 5 = 40]**

a) Write a note on Fajan's method.

b) Explain working of Abbe's refractometer.

c) Discuss Primary and Secondary standards.

d) Explain Co-precipitation and post precipitation.

e) Discuss theories of acid base indicators.

f) Explain estimation of sodium benzoate using Non aqueous titration.

g) Write Titrations with Potassium Iodate I.P.

h) Discuss different types of potentiometric titrations.

i) Explain estimation of Barium sulphate I.P.

j) Discuss Molarity, Molality, Normality and Mole fractions along with their formula.

Total No. of Questions : 3] **SEAT No. :**

P927 **[Total No. of Pages : 2**

[5854]-1003
Final Year B. Pharmacy
PHARMACEUTICS - I
(2019 Pattern) (Semester - I) (BP103T)

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

Instructions to the candidates:

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

Q1) Answer any 5 out of 7. **[15]**

a) List out various roles of pharmacist in health care system.

b) Define -

i) Lozenges

ii) Powders

iii) Cachets

c) list out various steps in handling of prescription.

d) Define posology and give any one formula for dose calculation.

e) Convert the following degree of proof spirit into real strength (%v/v)

i) 75º UP

ii) 35.3º OP

f) Define efflorescent and hygroscopic powders.

g) How elixir differs from syrups?

P.T.O.

Q2) Long answers questions (Attempt any 2 out of 4) **[20]**

a) Discuss the formulation aspects of suspension.

b) Define emulsion. Discuss identification tests for emulsion. Add a note on their types.

c) Write a note on

i) Displacement value

ii) Cold compression method

d) Write a note on factor influencing the dermal penetration of drug.

Q3) Short answer questions (Attempt any 8 out of 10) **[40]**

a) What is the need for dosage form? Classify dosage forms on the basis of site of administration.

b) Define and classify gels.

c) Write a note on therapeutic incompatibility.

d) Formulation aspects for

i) Throat paint

ii) Enemas

e) Write a note on history of pharmacy profession

f) Write about evaluation of semisolid dosage forms.

g) What are the various errors in prescription

h) How many ml of 60% w/v glucose solution and 10% w/v glucose solution are required to prepare 3000ml of 20% w/v glucose solution.

i) What are the factors affecting posology?

j) Write a note on Creams.

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Total No. of Questions : 3]

SEAT No. :

P928

[Total No. of Pages : 2

[5854] - 1004
F. Y. B. Pharmacy
BP104T : PHARMACEUTICAL INORGANIC CHEMISTRY
(2019 Pattern) (Semester - I)

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

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the right sindicate full marks.***
3) ***Draw the figures whenever necessary.***

Q1) **Attempt any five out of seven.** **[5 x 3 = 15]**

a) Give various sources of impurities in pharmaceutical substances.

b) Classify buffers. Give examples of buffers in pharmaceutical systems.

c) Give assay for Ammonium chloride.

d) What are dental products?

e) Give importance of antacid combinations. Give the preparation, identification tests and medicinal uses of Aluminum hydroxide gel.

f) What are Expectorants?

g) Define astringents with examples.

Q2) **Attempt any two out of four.** **[2 x 10 = 20]**

a) What are limit test? Explain limit test for Lead and Arsenic.

b) Define antimicrobial agents. Give their classification and mechanism. Add a note on Hydrogen peroxide.

c) Give the preparation, identification tests, assay and medicinal uses of

i) Sodium chloride ii) Sodium bicarbonate

d) What is radioactivity? Explain methods for the measurement of radioactivity. Give storage and handling of radiopharmaceuticals.

P.T.O.

Q3) **Attempt any eight out of ten.** **[8 x 5 = 401**

a) Give the preparation, identification tests, assay and medicinal uses of Copper sulphate.

b) Write history of Pharmacopoeia. Add a note on Indian Pharmacopoeia.

c) Give calculations and methods of adjusting isotonicity.

d) Give functions of major extracellular cations and anions.

e) Write a note on Haematinics.

f) Pharmaceutical applications of radioactive substances. Add a note on Sodium iodide.

g) Give various official waters. Add a note on official control tests for water.

h) Give modified limit test for chloride and sulphate.

i) Write a note on poison and Antidote.

j) Write in detail about Cathartics.

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Total No. of Questions : 3]

SEAT No. :

P929

[Total No. of Pages : 2

[5854] - 2001

First Year B.Pharmacy

HUMAN ANATOMY AND PHYSIOLOGY - II

(2019 Pattern) (Semester - II) (BP201T)

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

Instructions to the candidates :

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

Q1) Answer the following (Any 5) : **[15]**

a) Define the terms :
   i) Gastritis ii) Peptic ulcers
   iii) Cirrhosis
b) Describe meninges of the CNS.
c) Explain compositions and functions of pancreatic juice.
d) Define the terms : tidal volume, inspiratory reserve volume and vital capacity.
e) Draw neat labeled diagram of cross section of kidney. Enlist various functions of kidney.
f) Describe cells of anterior pituitary with their functions.
g) Explain the structure of chromosome.

Q2) Answer the following (Any 2) : **[20]**

a) Draw neat labeled diagram of brain. Describe in detail anatomy and functional areas of cerebrum.
b) Explain the process of absorption, chemical and mechanical digestion in small intestine.
c) Draw a neat labeled diagram of respiratory system. Explain mechanism of breathing and exchange of gases at lung and tissue level.
d) Discuss the structure of rephron. Explain in detail physiology of urine formation.

P.T.O.

Q3) Answer the following (Any 8) **[40]**

a) Explain histology and functions of liver.

b) Explain regions and functions of hypothalamus.

c) Elaborate basal metabolic rate and its significance.

d) Discuss structure and functions of stomach.

e) Classify neurons and explain properties of neurons.

f) Explain synthesis, storage, release and functions of thyroid hormones.

g) Enlist the organs of male reproductive system.

Write a note on Spematogenesis.

h) Discuss in detail physiology of menstruation.

i) Define and classify hormones. Write in detail about mechanism of hormone action.

j) Discuss the process of protein synthesis in detail.

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Total No. of Questions : 3]

SEAT No. : ____

P930

[Total No. of Pages : 2

[5854]-2002

First Year B.Pharmacy

PHARMACEUTICAL ORGANIC CHEMISTRY - I

(2019 Pattern) (Semester - II) (BP202T)

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

Instructions to the candidates:

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

Q1) Solve any five of the following : **[5×3=15]**

a) Define covalent bond and differentiate between sigma and pi bond.

b) Draw structures of compounds from following IUPAC names.

i) 4-Methyl-3, 3-diethyl-5-isopropyloctane

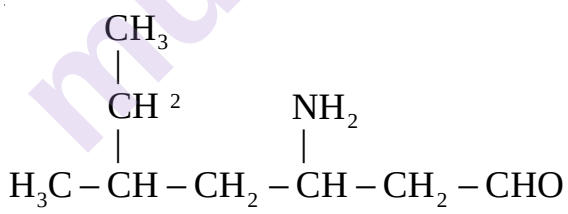
ii) 4-Bromo-5-methyl-2-octyne

iii) 2-Ethoxy-5-methylhexane

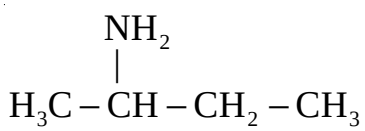
c) Write IUPAC names for following structures.

i) $H_3C - CH = CH - CHO$

ii)



iii)



d) Explain inductive effect with example.

e) Explain concept of tautomerism with examples.

f) Give structure and uses of

i) Benzyl alcohol

ii) Ethyl alcohol

g) Explain the order of basicity for Primary, Secondary and Tertiary amines.

P.T.O.

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

a) Explain E1 elimination reaction with mechanism, kinetics and factors affecting. Explain Saytzeff orientation.

b) What are carbonyl compounds? Write any three methods of preparation and any three nucleophilic addition reactions of aldehydes.

c) Explain S_N1 and S_N2 reactions. Discuss the factors affecting S_N1 and S_N2 reactions.

d) Classify organic compounds on the basis of elemental composition with suitable examples. Give the qualitative tests for alcohols, aldehydes and carboxylic acids.

Q3) Solve any Eight of the following. **[8×5=40]**

a) Explain any three types of structural isomerisms in organic compounds with one example each.

b) What are conjugated dienes? Explain 1,4- electrophilic addition reactions.

c) Draw structure and give uses of following carboxylic acids.
   i) Acetic acid
   ii) Tartaric acid
   iii) Acetyl salicylic acid

d) Write the reaction mechanism for Aldol condensation and Cannizzaro reaction.

e) Write the effect of substituent on the basicity of aliphatic amines. Draw structure and give uses of ethylenediamine.

f) Draw structure and give uses of following.
   i) Chloral hydrate
   ii) Vanillin
   iii) Cinnamaldehyde

g) Draw structure and give uses of following.
   i) Trichloroethylene
   ii) Dichloromethane
   iii) Iodoform

h) Explain electrophilic addition reactions of alkenes and Markownikoff's orientations.
   Define following terms.
   i) Resonance
   ii) Steric effect
   iii) Electromeric effect
   iv) Mesomeric effect
   v) Hyperconjugation.

j) Define hybridization and explain its types.

Total No. of Questions : 3]

SEAT No. : [ ]

P931

[Total No. of Pages : 2

[5854]-2003
First Year B. Pharmacy
BIOCHEMISTRY
(2019 Pattern) (Semester - II) (BP203 T)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right side indicate full marks.***
3) ***Draw well labeled diagram wherever nesessary.***

Q1) Answer the following (any 5 out of 7) (3 mark each) **[15]**

a) Define and classify amino acid based on their structure.

b) Give energetic involved in Krebs cycle.

c) Differentiate between oxidative phosphorylation and substrate phosphory lation.

d) Explain Fatty liver

e) Describe biosynthesis of catecholamines.

f) Define glucose. Give biological role of glucose

g) Define lipid. Give biological functions of lipids.

Q2) Long Answer (any 2 out of 3) (10 marks each) **[20]**

a) Explain HMP pathway and give its significance.

b) Explain beta oxidation of fatty acid.

c) Explain process of translation in detail.

d) Describe glycogen metabolism in detail. Add a note on GSDs

P.T.O.

Q3) Short Answer (any 8 out of 10) (5 marks each) **[40]**

a) Define and classify enzymes. Add a note on coenzymes.

b) Explain ketogenesis and its utilization.

c) Write a note on hormonal regulation of glucose and diabetes mellitus.

d) Explain concept of free energy.

e) Describe glycolysis with its energetic.

f) Explain urea cycle in detail.

g) Explain enzyme inhibition

h) Write a note on structure of DNA

i) Explain biosynthesis of purines.

j) Give therapeutic and diagnostic applications of enzymes.

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Total No. of Questions : 3]

SEAT No. : ____

P932

[Total No. of Pages : 2

[5854] - 2004
F. Y. B. Pharmacy (Semester - II)
204: PATHOPHYSIOLOGY
(2019 Pattern)

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

Instructions to the candidates :

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

Q1) **Answer the following. (Any 5 out 7) :** **[5 × 3 = 15]**

a) Define anaemia and enlist its types.

b) Explain etiology of polycystic ovarian syndrome.

c) Describe the factor affecting wound healing.

d) Give etiology of meningitis.

e) Discuss about mitochondrial damage.

f) Define the following.

i) Alkalosis

ii) Acidosis

iii) Apoptosis

g) Explain the etiology of tuberculosis.

Q2) **Long Answer (Any 2 out of 4) :** **[2 × 10 = 20]**

a) Discuss pathophysiology and clinical manifestations of diabetes mellitus.

b) Enlist ischemic heart diseases. Explain in detail pathophysiology of angina.

c) Define and classify hepatitis. Discuss in detail pathophysiology of hepatitis B.

d) Outline the types and explain in detail pathophysiology of cancer.

P.T.O.

Q3) **Short Answer (Any 8 out of 10) :** **[8 × 5 = 40]**

a) Explain the mechanism of inflammation.

b) Write a note on reversible cell injury.

c) Discuss secondary hypertension in detail.

d) Explain etiology and pathogenesis of chronic obstructive airways disease.

e) Discuss pathophysiology of urinary tract infection.

f) Explain pathogenesis of malaria in detail.

g) Describe the etiology and pathogenesis of sickle cell anaemia.

h) Define & explain pathophysiology of schizophrenia.

i) Explain its etiology and pathogenesis of amenorrhea.

j) Enlist sexually transmitted disorders and discuss in detail pathophysiology of AIDS.

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Total No. of Questions : 3]

SEAT No. :

P933

[Total No. of Pages : 2

[5854]-3001
Second Year B. Pharmacy
PHARMACEUTICAL ORGANIC CHEMISTRY - II
(2019 Pattern) (Semester - III)(BP301T) (Theory)

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

Instructions to the candidates:

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

Q1) Answer any 05 (03 marks each). **[15]**

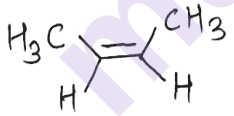
a) Explain the acidity of phenols.

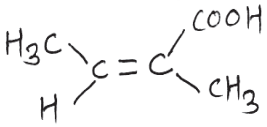
b) Explain the preparation of diazonium salt.

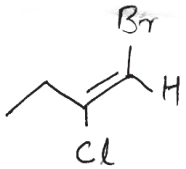
c) How will you distinguish primary, secondary and tertiary amine by simple chemical tests?

d) Comment on nomenclature of optical isomers.

e) Assign E/Z configuration to following

1. 

2. 

3. 

f) Explain hydrolysis of fats and oils.

g) Write the chemical reactions of cyclobutane.

Q2) Answer any two (10 marks each). **[20]**

a) What are aromatic electrophillic substitution reactions? Write mechanism of nitration of benzene.

b) Classify structural isomers with examples. Explain cis/trans isomers with examples.

P.T.O.

c) Write general methods of preparation (any 05) and reactions of cyclopropane.

d) Explain the directing effects of following functional groups towards electrophillic substitution on benzene.

i) - OH
ii) - NO_2

Q3) Answer any 08 (05 marks each). **[40]**

a) Write a note on racemic resolution of racemic mixtures.

b) Discuss mechanism of nitration of benzene. Explain role of conc. H_2SO_4 in nitrating mixture.

c) Elaborate limitations of Baeyer's strain theory.

d) Write a note on basicity of amines.

e) Explain Huckel's rule for aromaticity with suitable example.

f) Explain saponification and rancidity of oils.

g) Define Diastereomers with suitable examples.

h) Write a note on Friedel Crafts Alkylation.

i) Write in brief about geometrical isomerism.

j) Give an account of synthesis and uses of aromatic diazonium salts.

Total No. of Questions : 3]

SEAT No. : ____

P934

[Total No. of Pages : 2

[5854]-3002
S.Y. B. Pharmacy
PHYSICAL PHARMACEUTICS - I
(2019 Pattern) (Semester - III) (BP302T)

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

Instructions to the candidates:

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

Q1) Attempt any five: **[5×3=15]**

a) Explain Fick's first law of diffusion.

b) Define critical temperature, critical pressure and critical volume.

c) Explain mechanism of detergency.

d) What are optically active substances?

e) Classify complexes.

f) What do you understand by buffer capacity?

g) Explain dipole-dipole interactions.

OR

Q2) Attempt any two: **[2×10=20]**

a) Elaborate Raoult's law and explain its deviations.

b) Explain Nernst's distribution law and significance of partition coefficient.

c) Classify surfactants. Give HLB scale and write a note on micellar solubilisation.

d) Enlist methods of analysis of complexes. Explain any one method. Enumerate applications of complexation.

P.T.O.

Q3) Attempt any eight : **[8×5=40]**

a) Explain two component system with phase diagram.

b) Write a note on polymorphism.

c) Write a note on dissociation constants and its applications.

d) Explain different methods of pH determination.

e) Explain various types of isotherms.

f) Explain principle of liquefied propellants in aerosols.

g) Enlist factors affecting solubility of gases in liquids.

h) Write a note on Gibb's phase rule.

i) Elaborate on colligative properties.

j) Give significance of biological buffers.

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Total No. of Questions : 3] **SEAT No. :**

P935 **[Total No. of Pages : 2**

[5854]-3003

S.Y.B. Pharmacy

PHARAMACEUTICAL MICROBIOLOGY

(2019 Pattern) (BP 303 T) (Semester - III)

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

Instructions to the candidates:

1) ***All questions are compulsory, Internal choices are given.***
2) ***Figures to the right indicate full marks.***
3) ***Draw neat diagrams and structures wherever necessary.***

Q1) Attempt any 5 out of 7. **[5 × 3 = 15]**

a) Draw a neat & labelled diagram of HIV.

b) Differentiate between pilli & Flagella.

c) Define & give examples of prebiotics.

d) Define D value & give its significance.

e) Enlist different types of spoilage.

f) Discuss general procedure to carry out all culture.

g) How will you assess a new antibiotic?

Q2) Attempt any 2 out of 4. **[2 × 10 = 20]**

a) Define TVC. Discuss different methods of cell enumeration.

b) Define culture media & explain different types of culture media.

c) Define sterilization. Enlist different methods used for sterilization. Explain moist heat sterilization in detail.

d) Define microbial assays. Discuss methods used for microbial assays.

P.T.O.

Q3) Write a note on (8 out of 10) **[5 × 8 = 40]**

a) Multiplication of human virus

b) Applications of Microbiology.

c) Growth curve of bacteria.

d) Classification of disinfectants.

e) Sources of contamination in aseptic area.

f) Sterility testing of WFI.

g) Challenge test.

h) Rideal walker coefficient.

i) Culture media

j) Bacterial reproduction.

Total No. of Questions : 3] **SEAT No. :**

P936 **[Total No. of Pages : 2**

[5854]-3004

S.Y.B. Pharmacy

PHARMACEUTICAL ENGINEERING

(2019 Pattern) (Semester - III) (BP304T)

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

Instructions to the candidates:

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

Q1) Answer the following questions any five. **[15]**

a) With suitable examples explain : Filter Media.

b) Name the principle on which following size reduction equipment works :

i) Hammer mill ii) Ball Mill

iii) Fluid Energy mill iv) Edge runner mill

v) End runner mill vi) Rotary cutter mill

c) Give factors influencing selection of materials for the construction of plant.

d) What are the advantage and disadvantages in using climbing Film evaporator?

e) Differentiate between solid mixing and liquid mixing.

f) How will you prepare water for Injection by distillation?

g) Draw neat and labelled diagrams for ball mill along with modes of rolling balls in the ball mill operations.

P.T.O.

Q2) Attempt any two from the following questions. **[2 × 10 = 20]**

a) Define corrosion. What are it's different types ? With proper explanation discuss methods to combat (Prevent) it.

b) Define drying. Discuss the theory of drying with respect to rate relationship.

c) What is size reduction? Explain with suitable examples factors affecting size reduction? Add a note on : Hammer Mill.

d) Define filtration. List the factors influencing the rate of filtration. Explain the theories behind filtration process.

Q3) Attempt any eight of the following questions. **[40]**

a) Explain the principle and advantages of orifice meter.

b) Describe the principle, construction and working of fluid energy mill.

c) Explain the official standards of powders, Write a note on sieving.

d) Explain principle, construction, working & uses of multiple effect evaporators.

e) Write a note on steam distillation.

f) Explain construction and operational details of freeze dryer.

g) With the help of diagram explain principle, construction, working of double cone blender.

h) Explain principle, construction, working of rotary drum filter.

i) Explain Principle, construction, working of non-perforated basket centrifuge.

j) Write about Inorganic and organic nonmetals as material of plant construction.

Total No. of Questions : 3]

SEAT No. :

P937

[Total No. of Pages : 2

[5854]-4001

S.Y.B. Pharmacy

PHARMACEUTICAL ORGANIC CHEMISTRY - III

(2019 Pattern) (Semester - IV) (BP401T)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Write reactions wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) **Objective Type Questions Any 5 out of 7 :** **[5 × 3 = 15]**

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

b) Give any three reactions of thiophene.

c) Draw the following heterocycles with numbering.

i) Pyrimidine ii) Oxazole iii) Benzimidazole

d) Write Synthesis of Furan.

e) Discuss principal behind oppenauer-oxidation.

f) Give any three reactions of quinoline.

g) Describe Hansch synthesis of pyridine with Mechanism.

Q2) **Long Answer Any 2 out of 4 :** **[2 × 10 = 20]**

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

b) Give methods of synthesis & reactions of pyrrole.

c) Discuss reaction, mechanism & applications of Benzilic acid rearrangement & Pinacol-Pinacolone rearrangement reaction.

d) Elaborate method of synthesis, reactions & medicinal uses of Imidazole.

P.T.O.

Q3) **Short Answer Any 8 out of 10 :** **[8 × 5 = 40]**

a) Write a note on Atropisomerism.

b) What are stereospecific & stero selective reaction.

c) Comment on conformational isomerism in n-butane.

d) Asymmetric synthesis.

e) Discuss mechanism involved in Claisen-Schmidt condensation.

f) Explain the mechanism reaction conditions & industrial applications of Fischer indole synthesis.

g) Outline two methods of synthesis & chemical reactions of Thiazole.

h) Discuss synthesis & medicinal uses of Purine.

i) What is clemmensen reduction? Give its application.

j) Explain in detail Birch reduction.

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Total No. of Questions : 3]

SEAT No. : ____

P938

[Total No. of Pages : 2

[5854]-4002

S.Y. B. Pharmacy

MEDICINAL CHEMISTRY - I

(2019 Pattern) (Theory) (Semester - IV) (BP402T)

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

Instructions to the candidates :

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

Q1) Answer any five questions out of seven questions. **[5 × 3 = 15]**

a) Explain in brief importance of optical isomerism in relation to biological action.

b) Discuss with examples significance of Hydrogen bonding in relation to drug receptor interaction.

c) Outline the synthesis of salbutamol.

d) Explain the MOA and synthesis of carbamazepine.

e) Discuss MOA and SAR of irreversible cholinesterase inhibitors.

f) Draw structure and outline the synthesis of Fentanyl citrate.

g) Discuss alpha adrenergic antagonists with examples.

Q2) Answer any two questions out of four questions. **[2 × 10 = 20]**

a) Classify adrenergic receptors with their distribution. Classify sympathomimetic agents. Explain SAR of direct acting sympathomimetic with therapeutic uses.

b) Define psychoses. Classify antipsychotic agents. Elaborate in detail phenothiazine derivatives as antipsychotics.

c) Classify muscarinic antagonists with examples. Discuss the SAR of muscarinic antagonists with their therapeutic uses.

d) Classify anti-inflammatory drugs with examples. Explain SAR and MOA of aryl propionic acid derivatives. Outline synthesis of Ibuprofen.

P.T.O.

Q3) Answer any eight questions out of ten questions. **[8 × 5 = 40]**

a) Write a note on Bioisosterism.

b) Discuss in detail phase I metabolism reactions.

c) Discuss SAR and MOA of Benzodiazepines.

d) Explain with examples SAR of Morphine analogues and their uses.

e) Write a note on Beta blockers with examples.

f) Explain in detail chemistry and MOA of reversible cholinesterase inhibitors.

g) Write a note on General anaesthetics.

h) Discuss the SAR and MOA Narcotic antagonists.

i) Elaborate on chemistry of Acetylcholine and discuss the parasympathomimetic drugs with examples.

j) Discuss SAR and MOA of hydantoins and succinimides as anticonvulsant derivatives.

Total No. of Questions : 3]

SEAT No. : [ ]

P939

[Total No. of Pages : 2

[5854]-4003
S.Y. B. Pharmacy
PHYSICAL PHARMACEUTICS-II
(2019 Pattern) (Semester - IV) (BP403T)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Black figures to the right indicat full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***

Q1) Answer the following (any 5 out of 7): **[5×3=15]**

a) Write about the Hofmeister series.

b) Differentiate dilantant how and negative thixotropy.

c) Write various types of equivalent spherical diameter.

d) Write applications of chemical kinetics.

e) Write the differance between flocculated and de hocculated susponsion.

f) which order of reaction does not obey the reaction rate law and way?

g) Differentiate plastic and elastic deformation.

Q2) Answer the following (any 2 out of 4) **[2×10=20]**

a) Correlate DLVO theory with the stability of colloidul disporsion.

b) Write an integrated rate law equation of zero order and first order reactions.

c) Explain methods used for the determination of viscosity.

d) Explain in detail the formulation of suspension.

P.T.O.

Q3) Write a short note on the following(any 8 out of 10) **[8×5=40]**

a) Kinetic properties of colloids.

b) Flow properties of the powder.

c) Chemical degradation.

d) Coultor countor method

e) Van't Hoff's differential method.

f) Fisher sub-sieve size instrument.

g) Newtonian law.

h) HLB of surfactant.

i) True density of the powder.

j) Electric Double layer.

Total No. of Questions : 3] **SEAT No. :**

P995 **[Total No. of Pages : 2**

[5854]-4004
S.Y. B. Pharmacy
BP404 T : PHARMACOLOGY - I
(2019 Pattern) (Credit System) (Semester - IV)

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

Instructions to the candidates:

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

Q1) Objectives type Questions (Answer 5 out of 7) **[3×5=15]**

a) What are CNS stimulants? Write their examples and uses.

b) Define and classify drug antagonism with example.

c) Define Tachyphylaxis and give two examples.

d) Define hypnotics and give two examples.

e) Define pharmacovigilance.

f) Define and Classify Drug Interactions.

g) Define drug dependence with example.

Q2) Long answers (Any 2 out of 4) **[2×10=20]**

a) What is drug absorption? Describe various mechanisms of drug absorption and explain factors affecting absorption.

b) Define and Classify sedatives and Hypnotics with examples and write Pharmacological effects and uses of them.

c) Define and Classify Clinical Trials with details of design and data collected. Add a note on Pharmacovigilance.

d) Define & classify parasympathomimetic agents with suitable example. Explain the biosynthesis, storage, release and metabolism of acetylcholine.

P.T.O.

Q3) Short answer (Any 8 out of 10) **[8×5=40]**

a) Classify antiepileptic drugs. Describe the mechanism of action, therapeutic uses and adverse effects of valproic acid.

b) Define and classify antipsychotic drugs. Write uses, MOA and ADR of Chlorpromazine.

c) Define and classify general Anesthetics and write a note on stages of anesthesia.

d) Enumerate opioid analgesics. Describe the therapeutic uses and adverse effects of morphine.

e) Explain pharmacokinetic terms Bioavailability and Half-life in detail.

f) Classify various drugs used for the treatment of Parkinson's disease. Explain why levodopa is combined with carbidopa.

g) Define drug distribution, write factors affecting it and add a note on volume of distribution.

h) Classify various beta blockers. Describe clinical uses of beta blockers.

i) What is rational drug therapy? Which important points are considered before beginning of any drug therapy?

j) Define & classify drug interaction. Explain drug receptor interaction.

Total No. of Questions :3]

SEAT No. : ____

P 940

[Total No. of Pages : 2

[5854]-4005

S.Y. B.Pharmacy

BP 405 T : PHARMACOGNOSY AND PHYTOCHEMISTRY - I

(2019 Pattern) (Semester - IV)

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

Instructions to the candidates:

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

Q1) Answer all the questions (Any 5 out of 7) **[5×3=15]**

a) What are edible vaccines.

b) Write different chem. tests for Castor oil.

c) Add a note on marine anticancer drugs.

d) Give Bio source and chemical tests for bromelain.

e) Define and classify different types of stomata.

f) Add a note on Chaulmoogra oil and wool fat.

g) Define Acid value and saponification value.

Q2) Long answers (any 2 out of 4) **[2×10=20]**

a) Define pharmacognosy. Explain indetail history, scope and development of pharmacognosy.

b) What is Adulteration? Explain types of adulteration and tests for detection of Adulteration.

c) Classify drugs obtained from marine sources with example and their Medicinal Applications.

d) Explain in detail polyploidy, mutation and Hybridization with their applications in plant development.

P.T.O.

Q3) Short Answer (any 8 out of 10) **[8×5=40]**

a) Define and classify carbohydrates with example.

b) Write a note on conservation of medicinal plants.

c) Define and classify enzymes write a note on Gelatin.

d) Explain in detail polyploidy and mutation technique of medicinal plants.

e) Classify various marine drug and explain antineoplastic drugs from marine source.

f) Explain in detail foaming index.

g) Enlist plant hormones with their applications.

h) Comment on general nutrition requirement of plant tissue culture.

i) Add a note on flavonoids.

j) Explain chem. test for cardiac glycosides and Anthraquinone glycosides.

Total No. of Questions : 3]

SEAT No. :

P941

[Total No. of Pages : 2

[5854]-5001

T.Y. B. Pharmacy

MEDICINAL CHEMISTRY - II

(2019 Pattern) (Semester - V) (Theory) (BP 501T)

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

Instructions to the candidates:

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

Q1) Attempt the following (Any five) : **[5 × 3 = 15]**

a) Write mechanism of action & medicinal applications of Nicardipine.

b) Write mechanism of action & medicinal applications of diphenhydramine.

c) Write a note on loop diuretics.

d) Discuss carbonic anhydrase inhibitors.

e) Write a note on anti-coagulants.

f) Explain in detail oral contraceptives.

g) Discuss the drugs used in congestive heart failure.

Q2) Attempt the following (Any two) : **[2 × 10 = 20]**

a) Classify oral hypoglycemic agents with suitable examples. Discuss in detail on biguainides & sulphonylureas.

b) Classify antihypertensive agents with suitable examples. Discuss in detail ACE inhibitors.

c) What is angina pectoris? Classify antianginal agents with suitable examples, write MOA & medicinal applications of drugs belonging to class vasodialators.

d) Write biosynthesis of histamine. Classify H_1 antihistaminic agents with suitable examples, write SAR of H_1 Antagonists.

P.T.O.

Q3) Attempt the following (Any eight) : **[8 × 5 = 40]**

a) Write medicinal applications of prostaglandins & leucotriene inhibitors.

b) Write mechanism of action & medicinal applications of Ethacrynic acid & chlorothiazide.

c) Outline the synthetic scheme of

i) Diphenhydramine

ii) Ranitidine

d) Draw structures, write mechanism of action & medicinal applications of H_2 antagonists.

e) Discuss anti-arrhythmic agents with suitable examples.

f) Classify local anesthetics with suitable examples.

g) Discuss in detail thyroid & antithyroid drugs.

h) Explain chemistry, nomenclature & stereochemistry of steroids.

i) Elaborate corticosteroids in detail.

j) Classify antihyperlipidemic agents with suitable examples.

Total No. of Questions : 3]

SEAT No. :

P942

[Total No. of Pages : 2

[5854]-5002

T.Y. B. Pharmacy

INDUSTRIAL PHARMACY - I

(2019 Pattern) (Semester - V)

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

Instructions to the candidates:

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

Q1) Answer the following (Any 2) : **[20]**

a) Define tablets. Discuss in detail different additives used in tablet formulation.

b) Give complete account of environmental control zones in sterile parenteral manufacturing facilities Add note on HVAC system.

c) Give advantages of parenterals, Discuss in detail official pharmacopoeial evaluation parameters of parenterals.

d) What is pelletization? Describe in detail the process of extrusion pelletization.

Q2) Answer the following (Any 8) : **[40]**

a) Describe construction and principle involved in working of fluidized bed granulator.

b) Give a detail account on evaluation of granules.

c) What are the problems involved in filling hard gelatin capsules.

d) Explain weight variation test for capsules as per I.P.

e) What is HLB? Explain its applications in formulation of biphasic liquid orals.

f) Define and classify ophthalmic products.

g) Discuss formulation of soft gelatin capsules.

h) Discuss evaluation of liquid orals.

i) Write a note on sunscreen oral SPF.

j) Explain in brief tonicity adjustments in parenterals.

P.T.O.

Q3) Write a note on (Any 5) : **[15]**

a) Glass as packaging material.

b) Component of aerosol system.

c) Quality control tests of aerosols.

d) IPQC test of capsules as per I.P.

e) Propellants used in formulation of aerosols.

f) Fluidized bed coating used in tablet coating.

g) Stability of Suspension.

Total No. of Questions :3]

SEAT No. :

P 943

[Total No. of Pages : 2

[5854]-5003
T.Y. B.Pharmacy
PHARMACOLOGY - II
(2019 Pattern) (Semester - V) (Theory) (BP 503T)

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

Instructions to the candidates:

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

Q1) Attempt any five of the following. **[15]**

a) Write the advantages of oral hypoglyaemic agent.

b) Give location and functions of histamine receptor.

c) Define and classify tocolytics.

d) Write biosynthesis of prostaglandins.

e) Comment the role of HMG-CoA reductase inhibitors in the treatment of hyperlipidemia.

f) Enlist mechanism of actions of antigout drugs.

g) What are the adverse effects of NSAIDS?

Q2) Attempt any two of the following. **[20]**

a) Describe biosynthesis, storage and release of insulin. Add note on insulin preparations.

b) Discuss biosynthesis, mechanism of action, pharmacological actions and therupeutic uses of testosterone.

c) Classify and hypertensive drugs? Explain pharmacotherapy for hypertension.

d) Classify antihistamines. Describe pharmacological actions of anithistamines

P.T.O.

Q3) Attempt any eight of the following. **[40]**

a) Describe biosythesis, storage, release and action of thyroid hormone?

b) Explain the calcium homeostasis.

c) Add note on bioassay of oxytocin.

d) Describe physiological effect of glucagon.

e) Write a note on oral contraceptive pills.

f) Write mechanism of actions of acetazolamide and spironolactone.

g) Justify use of calcium channel blockers for any two cardiovascular disease.

h) Explain pharmacological actions of nitrates?

i) "Sodium channel blockers are used for treatment of cardiac arrthymias" write true or false and Justify.

j) Write a note on platelet - activating factors?

Total No. of Questions : 3]

SEAT No. : [ ]

P944

[Total No. of Pages : 2

[5854]-5004

Third Year B. Pharmacy

PHARMACOGNOSY AND PHYTOCHEMISTRY - II

(2019 Pattern) (Semester - V) (Theory) (BP 504T)

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

Instructions to the candidates:

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

Q1) Objective type questions (Answer 5 out of 7) : **[5×3=15]**

a) Define radioisotopes and give their uses in biogenetic studies.

b) Name two unorganized drugs with their botanical source and uses.

c) Give the source and uses of eugenol containing crude drug.

d) Identification test for Aloes.

e) Write source and uses of Podophyllotoxin.

f) Utilization of Vinca alkaloids.

g) Give the adulterants of Clove bud.

Q2) Answer the following (Any 2 out of 4) : **[2×10=20]**

a) Define Alkaloids. Explain Biological source, classification, chemistry and medicinal uses of Belladonna and Opium.

b) Explain Biological source, classification, chemistry and medicinal uses of Volatile oils.

P.T.O.

c) Describe industrial production and estimation of Diosgenin and sennoside.

d) What is Microwave assisted extraction. Describe its process, applications, advantages and disadvantages.

Q3) Answer the following (Any 8 out of 10) : **[8×5=40]**

a) Write a note on tracer technique and its significances.

b) Describe the microscopy of Clove with a neat labelled diagram.

c) Adulterants of Senna and Digitalis.

d) Write the isolation and identification of Quinine.

e) Describe the isolation and identification of Citral.

f) Write identification test and estimation of Digoxin.

g) Discuss the industrial production and estimation of forskolin.

h) Write isolation and analysis of Glycyrrhizin.

i) Differentiate between Pale Catechu and Black Catechu.

j) Give biosources, chemical constitutents and uses of Coriander and Belladonna.

Total No. of Questions : 3]

SEAT No. : [ ]

P945

[Total No. of Pages : 2

[5854]-5005

Third Year B. Pharmacy

PHARMACEUTICAL JURISPRUDENCE

(2019 Pattern) (Semester - V) (Theory) (BP505 T)

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

Instructions to the candidates:

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

Q1) Answer the questions (Objective Answer 5 out of 7) : **[5×3=15]**

a) What are Geographical indications?

b) What are misbranded drugs?

c) What are schedule N and O?

d) According to Medical Termination of pregnancy Act. 1971 which places are approved for termination of pregnancy and process for approval of such places.

e) What are coca derivatives, opium derivatives and opium poppy?

f) What are the functions of Pharmacy Council of India (PCI).

g) What is process patent?

Q2) Long Answers (Answer 2 out of 4) : **[2×10=20]**

a) Explain different forms of IPR.

b) Discuss in detail about constitution and working of state and joint state pharmacy council.

P.T.O.

c) Write in detail procedure of inspections of drugs and formulations and qualification and responsibilities of drug inspector as per pharmacy Act.

d) What are the objectives of DPCO, 1995. Explain in detail prices of bulk drugs and retail price of formulation.

Q3) Short Answers (Answer 8 out of 10) : **[8×5=40]**

a) Explain "Education Regulation" under pharmacy Act, 1948.

b) Procedure for taking samples of Drugs & Cosmetics by Drug inspector.

c) Controlled operations under narcotic drugs & psychotropic substances act.

d) Animal Welfare Board of India. Offences and penalties under prevention of cruelty to animals act, 1950.

e) Explain Bonded Manufactory.

f) Schedule M.

g) Adulterated drugs.

h) Drug Enquiry Committee.

i) Pharmaceutical code of ethics in relation to Job and Trade.

j) Procedure for obtaining license to manufacture medicinal & toilet preparations containing alcohol.

Total No. of Questions : 3]

SEAT No. :

P946

[Total No. of Pages : 2

[5854]-6001
T.Y. B.Pharmacy
MEDICINAL CHEMISTRY - III (Theory)
(2019 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory. Internal choices are given.***
2) ***Figure to the right indicate full marks.***
3) ***Draw neat diagrams and structures wherever necessary.***

Q1) Objective type questions. (Answer 5 out of 7) **[5×3=15]**

a) Define and classify antifungal agents.

b) Which species of plasmodium can cause malaria to human.

c) Define and classify sulphonamides.

d) Define and classify antimalarial agents.

e) Define and classify antibiotics.

f) Draw the structures of penam, cepham and beta lactam ring.

g) Multiple choice questions :

i) Amodiaquine is a derivative of ?

1) 3-amino quinoline 2) 4-amino quinoline

3) 2-amino quinoline 4) 5-amino quinoline

ii) Which is the molecular target for the vinca alkaloids as anticancer agents?

1) Tyrosine kinase 2) DNA

3) Ribosomes 4) Tubulin

iii) Streptomycin is example of class _____.

1) Peptide antibiotics

2) Macrolide antibiotics

3) Aminoglycoside antibiotics

4) Tetracycline antibiotics

P.T.O.

Q2) Long answer. (Answer 2 out of 4) **[2×10=20]**

a) Discuss various physicochemical parameters used in QSAR and add a note on Hansch QSAR analysis.

b) Describe the chemistry, SAR and MOA of tetracycline antibiotics.

c) Describe the chemistry, SAR and MOA of penicillin antibiotics.

d) Describe the SAR and MOA of quinoline antimalarial agents.

Q3) Short answer. (Answer 8 out of 10) **[8×5=40]**

a) Describe the SAR and MOA of antifungal azoles.

b) Discuss MOA of anti-neoplastic alkylating agents.

c) Discuss antimetabolites class of anti-neoplastic agents.

d) Explain MOA of sulphonamides.

e) Draw the scheme of synthesis for chloroquine.

f) Describe the SAR and MOA of quinolones anti-infective agents.

g) Write a note on aminoglycoside antibiotics.

h) Draw the scheme of synthesis for ethambutol.

i) Explain chemistry, MOA of plant products use as anticancer agents.

j) Write a note on anthelmintic drugs.

⌘⌘⌘

Total No. of Questions :3]

SEAT No. : ____

P 947

[Total No. of Pages : 2

[5854]-6002
T.Y. B.Pharmacy
PHARMACOLOGY - III (Theory)
(2019 Pattern) (Semester-VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) Objective type questions (Answer 5 out of 7) **[15]**

a) Define following term with examples.
   i) Appetite stimulant
   ii) Carminative
   iii) Analeptics

b) Classify drugs used for constipation and differentiate between laxative and purgative.

c) Discuss about nasal decongestant. Give mechanism of action of oxymetazoline.

d) Write a short note on clinical symptoms and management of lead poisoning.

e) What is peptic ulcer & classify antiulcer drugs.

f) Write a note on Expectorants.

g) Classify antifungal drugs and their clinical uses.

Q2) Long Answer. (Answer 2 out of 4) **[20]**

a) Describe in detail mechanism of action, Antibacterial spectrum, adverse effect and uses of sulphonamide.

b) Classify drugs used in the treatment of UTI & give MOA, pharmacological action, Adverse effect & theraputicesses of cotrimoxazole.

c) What are clinical manifestations of malaria? Discuss treatment options and non-pharmacological approach for its prevention.

d) Define Asthma. Discuss mechanism of Action, Pharmaological action, therapeutic uses and adverse effects of salbutamol.

P.T.O.

Q3) Short answer questions (Answer 8 out of 10) **[40]**

a) Write a note on pharmacotherapy of COPD.

b) Define Biological rhythm & give application of chronopharmacology.

c) Explain Immunostimulators & Immunodepressants.

d) Discuss drug treatment of amoebiasis.

e) Classify auti tubercular drug. Give Adverse effect & theraputic uses of INH.

f) Define Helminthiasis, classify anthelmintics drugs of give MOA of Albendazole.

g) Give the aplication of monocolonal Antibodies.

h) Classify β-Lactam Antibiotics, write in detail pharmacology of ampicillin.

i) Write a short note on pharmacotherapy of Tuberculosis.

j) Define Immunosupressants, Classify it & give MOA of Tacrolimus.

Total No. of Questions : 3]

SEAT No. :

P948

[Total No. of Pages : 2

[5854]-6003

T.Y. B.Pharmacy

HERBAL DRUG TECHNOLOGY

(2019 Pattern) (Semester - VI)

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

Instructions to the candidates:

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

Q1) **Objective type (Answer 5 out of 7) :** **[5 × 3 = 15]**

a) Write a note on Homeopathic system of medicine.

b) Explain in detail possible side effects and interaction of Garlic.

c) Brief note herbal origin perfumes.

d) Define natural binders along with classification and advantages.

e) Write a note on Natural sweetener.

f) Define Patent, Trademark and Biopiracy.

g) Write a note on Ashwagandha as Neutraceutical.

Q2) **Long answer (Answer 2 out of 4) :** **[2 × 10 = 20]**

a) Explain Good agriculture and cultivation practices for medicinal plants.

b) Define Nutraceuticals. Classify the nutraceuticals in detail with e.g. Explain in detail Proanthocyanidins and Resveretrol.

c) Explain in detail WHO and ICH guidelines for the assessment of herbal drug, stability testing of herbal drug.

d) What is *Bhasma?* Describe in detail method of preparation and evaluation parameters for *bhasma* as per Ayurvedic Pharmacopoeia.

P.T.O.

Q3) **Short answer (answer 8 out of 10) :** **[8 × 5 = 40]**

a) Describe basic principles, diagnosis and treatment involved in Ayurveda.

b) Describe method of preparation and standardization of *Asava-Arishta*.

c) Discuss the manufacturing process and evaluation parameters for herbal syrup.

d) Brief note on phytosomes technology, advantages and method of preparation.

e) Add a note on plant based industries involved in work on medicinal and aromatic plants.

f) Explain in detail regulatory issues-regulation in India (ASU DTAB, ASU DCC) provisions relating to Ayurvedic, Siddha and Unani system of medicine.

g) What is drug interactions and explain about the herb drug interactions with examples.

h) Explain role of neutraceuticals and health benefits in ailment CVS diseases.

i) Explain in detail case study of Neem and curcumin.

j) Write a note on Biodynamic agriculture.

Total No. of Questions : 3]

SEAT No. :

P949

[Total No. of Pages : 2

[5854]-6004

T.Y. B.Pharmacy

BIOPHARMACEUTICS AND PHARMACO KINETICS

(2019 Pattern) (Semester - VI)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labeled diagrams must be drawn wherever necessary.***

Q1) Answer the following (Any 5) : **[5 × 3 = 15]**

a) Discuss the factors that influence the gastric emptying rate.

b) What is the effect of protein binding on the action of the drug?

c) What are the factors that influence passive reabsorption of drugs in the renal tubules?

d) Describe briefly influence of excipients of drug bioavailability

e) Name and define the pharmacokinetic processes involved in the termination of drug action.

f) Explain various physicochemical factors governing drug excretion.

g) What are the advantages of administrating a drug by constant rate i.v. infusion over oral administration.

Q2) Answer the following (Any 2) : **[2 × 10 = 20]**

a) What are pharmacokinetic models? Explain various types with their significance.

b) What is compartmental modeling? Explain one compartmental open model for i.v. in fusion of the drug.

c) Discuss pH partition hypothesis of drug absorption.

d) Explain the concept of BCS. Give its significance and add note on BDDCS.

P.T.O.

Q3) Answer the following (any 8) : **[8 × 5 = 40]**

a) Write a note on drug displacement interactions.

b) Explain in detail about active transport of drug.

c) Write on non-linear Pharmacokinetics.

d) Describe Wagnor-Nelson method.

e) Write a note on IVIVC.

f) What are the various factors related to dissolution test apparatus?

g) Write a detail note on kinetics of protein binding.

h) Write a note on enterohepatic cycling of drug.

i) Explain study Parameters in BA studies.

j) Explain permeability limited drug distribution.

Total No. of Questions : 3]

SEAT No. :

P950

[Total No. of Pages : 2

[5854]-6005

Third Year B. Pharmacy

PHARMACEUTICAL BIOTECHNOLOGY

(2019 Pattern) (Semester - VI) (BP 605T)

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

Instructions to the candidates:

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

Q1) Answer 5 out of 7 : **[5 × 3 = 15]**

a) What is biotechnology? Enlist applications of biotechnology with reference to pharmaceutical sciences.

b) Enlist applications of immobilized enzymes.

c) Highlight use of microbes in industry.

d) Explain basic principle of genetic engineering.

e) Give brief overview of protein engineering.

f) Discuss aeration process used in fermentation.

g) Describe the principle of southern blotting.

Q2) Answer 2 out of 4 : **[2 × 10 = 20]**

a) What is recombinant DNA technology? Summarize applications of recombinant DNA technology and discuss production of recombinant insulin.

b) What is hybridoma technology? Discuss production of monoclonal antibodies by hybridoma technology and their applications.

c) What are hypersensitivity reactions? Classify hypersensitivity reactions and explain them in detail.

d) What is fermentation? Highlight general requirements of fermentation and discuss production of penicillins by fermentation technology.

P.T.O.

Q3) Answer 8 out of 10 : **[8 × 5 = 40]**

a) Discuss working and applications of biosensors in pharmaceutical industries.

b) Explain restriction endonuclease with example.

c) Write a note on ELISA.

d) What is cloning vector? Explain plasmid as a cloning vector.

e) Discuss general method of preparation of bacterial vaccine.

f) Write a note on polymerase chain reaction (PCR).

g) Explain the structure of immunoglobulin.

h) Write a note on microbial biotransformation.

i) Describe collection, processing and storage of whole human blood.

j) What is mutation? Summarize types of mutation.

Total No. of Questions : 3]

SEAT No. :

P951

[Total No. of Pages : 2

[5854]-6006

Third Year B. Pharmacy

PHARMACEUTICAL QUALITY ASSURANCE

(2019 Pattern) (Semester - VI) (BP 606T)

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

Instructions to the candidates :

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

Q1) Attempt any five of the following. **[15]**

a) Differentiate calibration and validation.
b) State functions of WHO.
c) What is stress testing of the drug substance?
d) What is IQ and OQ?
e) State the importance of Training.
f) What is prospective validation?
g) State the need and objectives of validation.

Q2) Attempt any two of the following. **[20]**

a) Define Quality Assurance. Discuss the functions of QA department in pharmaceutical industry.
b) What is ISO? Why should a pharmaceutical company become ISO certified? Elaborate benefits, and elements of ISO.
c) State guidelines for selection and purchase of equipments in pharmaceutical industry.
d) Discuss importance of documentation in pharmaceutical industry. Elaborate on master production and control record.

Q3) Attempt any eight of the following. **[40]**

a) Define Quality. State principles of TQM.
b) Write a short note of USFDA.
c) Elaborate on handling of return goods.

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d) Write a short note on sanitation in sterile manufacturing facility.

e) State the importance of IPQC testing.

f) State precautions to avoid mix up and cross contamination during manufacturing.

g) Describe importance and content of SOP.

h) Elaborate on accuracy and precision.

i) State the content of Distribution record.

j) What are Quality control tests for containers?