This question paper contains 4 printed pages]

SP—32—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACEUTICAL ORGANIC CHEMISTRY-III

(Wednesday, 15-05-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

(*iii*) Draw chemical structures and reactions wherever necessary.

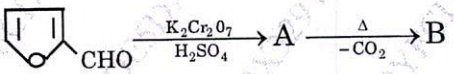
1. Solve the following : 10×2=20

(*a*) Distinguish between Enantiomers and Diastereomers.

(*b*) Mention basic conditions for geometrical isomerism.

(*c*) Draw the structures of Newmann projection formula of ethane .

(*d*) Complete the following reaction :



(*e*) Write any *four* medicinal uses of pyrimidine.

(*f*) What is Dakin reaction ?

(*g*) Draw the structures of Imidazole and Azepines.

(*h*) Match the following :

'A'	'B'
1. R and S	(*a*) Fischer Projection
2. D and L	(*b*) Geometrical isomerism
3. Z and E	(*c*) Orientation
4. *d* and *l*	(*d*) CIP rule
	(*e*) Optical rotation

(*i*) Outline Fischer indole synthesis of Indole

(*j*) How will you synthesis pyrrole from Furan ?

2. Solve any *two* of the following questions : 2×10=20

(*a*) Write a note on Resolution of Racemic Mixture.

(*b*) Mention any *two* synthesis of quinoline and explain the following reaction of quinoline with example :

(*i*) Electrophilic substitution reaction

(*ii*) Nucleophilic substitution reaction

(*iii*) Oxidation reaction

(*iv*) Reduction reaction.

(c) Outline the following reactions with mechanism :

(i) Birch reduction

(ii) Schmidt reaction.

3. Solve any *seven* of the following : 7×5=35

(a) Explain Beckmann's rearrangements with mechanism and application

(b) Discuss conformation of *n*-Butane

(c) What are meso compounds ? Describe element of symmetry.

(d) Mention any *two* synthesis and *four* medicinal uses of pyrimidine.

(e) Describe in brief methods for determination of configuration of geometrical isomers.

(f) Write a note on R and S system of nomenclature.

(g) Draw the resonating structure of pyrrole and mention its medicinal application

(h) Define Heterocyclic compounds with example and how will you synthesis thiophene from :

(i) *n*-butane

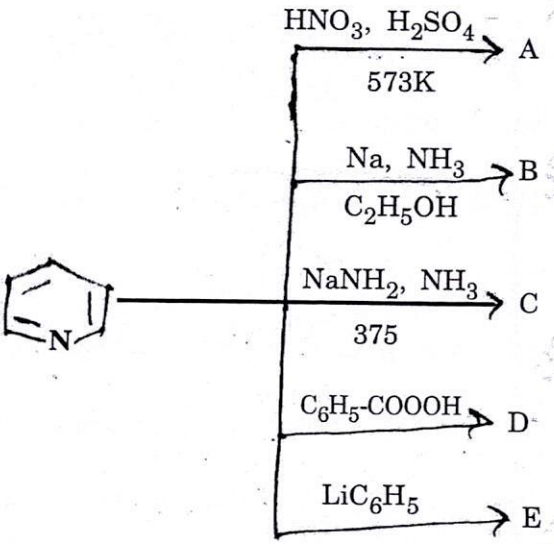
(ii) Sodium succinate

(iii) Acetylene

(iv) 1, 4-diketones.

P.T.O.

(*i*) Predict the product of the following reaction :



This question paper contains **3** printed pages]

SP—36—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

MEDICINAL CHEMISTRY

Paper–I (BP-402T)

(Friday, 17-5-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

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

1. Answer *all* the following : 10×2=20

(*a*) Define Bioisosterism.

(*b*) Write synthesis of Phenytoin.

(*c*) Draw structure and write IUPAC name of Diazepam.

(*d*) Enlist factors affective drug metabolism.

(*e*) Justify the statement "Solubility of drug is essential for its biological activity".

(*f*) Draw structure and give uses of Dicylomine hydrochloride.

(*g*) Differentiate between Benzodiazepines and Barbiturates.

(*h*) Give synthesis of Salbutamol.

P.T.O.

(*i*) Draw the structure of medicinal compound containing Benzodiazepine nucleus.

(*j*) Classify general anasthetics with at least *one* structure.

2. Answer any *two* of the following : 10×2=20

(*a*) What are anti-inflammatory agents ? Classify it on chemical basis. Sketch out the synthetic scheme of mefenamic acid.

(*b*) Define Antipsychotics. Explain SAR of phenothiazines.

(*c*) Discuss SAR of phenylethanolane as an α-adrenergic agonists.

3. Answer any *seven* of the following : 7×5=35

(*a*) Classify Anticonvulsants with structure of at least *one* drug from each class.

(*b*) Write metabolic pathway of Nor-adrenaline.

(*c*) What are parasympathomimetic agents ? Give its structural classification of parasympathomimetics with examples.

(*d*) Draw structures of the following drugs :

(*i*) Ketamine

(*ii*) Haloperidol

(*iii*) Ibuprofen

(*iv*) Dopamine

(*v*) Neostigmine.

(*e*) Discuss SAR of Barbiturates.

(*f*) Discuss SAR of Morphine.

(*g*) Write synthesis of :

(*i*) Propranolol

(*ii*) Methohexital.

(*h*) Write MOA of benzodiazepines.

(*i*) Write the receptor targets for the following :

(*i*) Carbamazepine

(*ii*) Haloperidol

(*iii*) Thiopental

(*iv*) Phenobarbitone

(*v*) Sodium valporate.

This question paper contains **3** printed pages]

SP—40—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

PHYSICAL PHARMACEUTICS

Paper–II

(Monday, 20-5-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw diagrams, write examples wherever necessary.

(*iii*) Answer to the point only.

1. Write the answer of *all* the following questions : 10×2=20

(*a*) Define the following :

(*i*) Coacervation

(*ii*) Peptization.

(*b*) What is Tyndall's effect ?

(*c*) What is Newton's law of fluidity ?

(*d*) What is Hooke's law ?

P.T.O.

(*e*) Define the following :

(*i*) Half life

(*ii*) Shelf life.

(*f*) Differentiate between flocculated and deflocculated suspension.

(*g*) Define Micromeritics and give its application.

(*h*) Define the following :

(*i*) Projected diameter

(*ii*) Seive diameter.

(*i*) What is molecularity of reaction ?

(*j*) What is the effect of temperature of rate of reaction ?

2. Answer any *two* of the following : 2×10=20

(*a*) Define order of reaction. Write in detail the methods of determination of order of reaction.

(*b*) Explain in detail the working principle of single point viscometers.

(*c*) Define colloids and explain different methods of preparation and purification of colloids.

3. Answer any *seven* of the following : 7×5=35

(*a*) Define emulsion and explain its identification test.

(*b*) Explain in detail non-Newtonian system.

(*c*) Describe the theories of emulsification.

(*d*) What is thixotropy and discuss the methods of it's determination ?

(*e*) Explain in detail sedimentation method of particle size determination.

(*f*) Explain in detail chemical degradation pathways.

(*g*) Write in detail air permeability method for determining surface area.

(*h*) Explain in detail about accelerated stability study.

(*i*) Explain in detail electrical properties of colloids.

This question paper contains **3** printed pages]

SP—44—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACOLOGY

Paper–I

(Wednesday, 22-5-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Answer to the point only.

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

1. Solve *all* the following questions : 10×2=20

(*a*) Define :

(*i*) Pharmacokinetic

(*ii*) Pharmacodynamic.

(*b*) Write advantages and disadvantages of parenteral routes of drug administration.

(*c*) What are adverse drug reactions ? Give its types.

(*d*) Classify neuromuscular blocking agent with example.

P.T.O.

(e) What are local anaesthetic agents ?

(f) Give drugs used in myasthenia gravis.

(g) Write the mechanism of action of disulfiram used in treatment of chronic alcoholism.

(h) Enlist various centrally acting muscle relaxant.

(i) Write pharmacotherapy for Alzheimer disease.

(j) What are anxiolytics ? Write its example.

2. Solve any *two* of the following : 2×10=20

(a) What is drug absorption ? Discuss in detail mechanism of drug absorption.

(b) What are parasympathomimetic agents ? Classify them with examples and explain the pharmacology of Acetylcholine.

(c) Define and classify antiepileptic agents and explain the pharmacology of phenytoin.

3. Solve any *seven* of the following : 7×5=35

(a) Explain the renal and non-renal routes of drug excretion.

(b) Define drug interaction. Explain in detail about drug interaction.

(c) Discuss the various phases of clinical trial.

(d) Write pharmacological account of atropine.

(*e*) Explain the neurohumoral transmission in CNS.

(*f*) Write pharmacological account of benzodiazepine.

(*g*) Describe in detail pharmacotherapy of Parkinson disease.

(*h*) Write pharmacological account of morphine.

(*i*) Discuss on various stages of general anaesthesia.

This question paper contains **3** printed pages]

SP—45—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACOGNOSY AND PHYTOCHEMISTRY

Paper–I

(Friday, 24-5-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Answer to the point only.

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

1. Answer *all* of the following : 10×2=20

(*a*) Define Pharmacognosy.

(*b*) Enlist various plant tissue cultures.

(*c*) Define alkaloids and flavanoids.

(*d*) What is totipotency ?

(*e*) Define mutation and polyploidy.

P.T.O.

(*f*) What are edible vaccines ?

(*g*) Define and classify volatile oils.

(*h*) Write chemical constituents and uses of castor oil.

(*i*) Write various sources of crude drugs.

(*j*) Write biological source and uses of cotton.

2. Solve any *two* of the following : 2×10=20

(*a*) Define crude drug and explain various methods of classification of crude drug with merits and demerits.

(*b*) Write biological source and uses of Bees wax, Jute, Agar, Honey and Pepsin.

(*c*) Write a note on historical development and application of PTC.

3. Solve any *seven* of the following : 7×5=35

(*a*) Explain Lycopodium spore method.

(*b*) Write the difference between organised and unorganised crude drugs.

(*c*) Discuss scope and historical development of pharmacognosy.

(*d*) Discuss Ayurvedic system of medicines and its role in pharmacognosy.

(*e*) Define and classify glycosides.

(*f*) Write chemical test for identification of acacia and agar.

(*g*) Explain in detail cultivation and collection of drugs.

(*h*) Define Adulteration and explain any *four* methods of adulteration of crude drugs.

(*i*) Write a note on plant hormone and their applications.

This question paper contains **3** printed pages]

PP—32—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY–III

Paper BP401T

(Wednesday, 27-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

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

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

(*iii*) Draw structures wherever necessary.

1. Solve *all* of the following : 2×10=20

(*a*) Define asymmetric synthesis.

(*b*) Draw structure of quinoline and give its numbering style.

(*c*) Write medicinal uses of azepines.

(*d*) Write any *one* preparation method of thiazole.

(*e*) Write nitration reaction of pyrrole.

(*f*) Write any *two* examples of distereomers.

P.T.O.

(*g*) Write any *one* stereospecific reaction.

(*h*) How to prepare thiophene (write any *one* method) ?

(*i*) Enlist elements of symmetry.

(*j*) Draw structure and give numbering style of Acridine.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain CIP system for nomenclature of optical isomers.

(*b*) Write any *five* electrophilic substitution reactions of furan.

(*c*) Write any *four* preparation methods of Indole.

3. Solve any seven of the following : 7×5=35

(*a*) Explain mechanism of the following reactions :

(*i*) Dakin reaction

(*ii*) Wolff Kishner reduction.

(*b*) Write definition and mechanism of Beckmann's rearrengement reaction.

(*c*) Write any *two* preparation methods of pyrimidine.

(*d*) Classify heterocyclic compounds with example.

(*e*) Explain geometrical isomerism in detail.

(*f*) Write a note on resolution of racemic mixture.

(*g*) Explain conformational isomerism in *n*-butane with energy profile diagram.

(*h*) Write a note on optical activity.

(*i*) Draw structures of the following compounds :

(*i*) Pyrazole

(*ii*) Isoquinoline

(*iii*) Purine

(*iv*) Oxazole

(*v*) Pyridine.

This question paper contains **2** printed pages]

PP—36—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (IV Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

MEDICINAL CHEMISTRY–I

Paper BP402T

(Friday, 29-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

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

(*ii*) Write figures and suitable example wherver necessary.

1. Answer all of the following : 10×2=20

(*a*) What is biotransformation ?

(*b*) Write structure and IUPAC name of dopamine.

(*c*) Figure out antagonistic activity of morphine in narcotic analgesic.

(*d*) Classify general anaesthetics.

(*e*) What are sedative-hypnotics ?

(*f*) Write structure and IUPAC name of propranolol.

(*g*) What is partition coefficient ?

(*h*) Enlist any *two* α-adrenergic blockers.

(*i*) Define bioisosterism.

(*j*) Give biosynthetic pathway of Ach.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Write chemical classification of anti-inflammatory agents with at least *one* structure from each class.

(*b*) Explain in detail SAR of benzodiazepines.

(*c*) Write synthesis of phenytoin and carbamazepine.

3. Solve any *seven* of the following : 7×5=35

(*a*) Explain biosynthesis and metabolism of noradrenalin.

(*b*) Explain phase I reactions of drug metabolism with a suitable example.

(*c*) Explain the role of ionisation and solubility in reaction to biological activity.

(*d*) Write the synthesis of salbutamol.

(*e*) Explain SAR of phenothiazines.

(*f*) Write the structure and IUPAC name of :

(*i*) Oxazepam

(*ii*) Piroxicam

(*iii*) Haloperidol.

(*g*) Write structure, IUPAC name, MOA and uses of esmolol.

(*h*) Explain the SAR of sympathomimetics.

(*i*) Write the synthesis of halothane and propranolol.

DF08F75690F4CF209819E5CB2DB43BD0

This question paper contains **2** printed pages]

PP—40—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

JANUARY, 2024

PHYSICAL PHARMACEUTICS

Paper–II(BP-403T)

(Monday, 01-01-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw well labelled diagram wherever necessary.

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

1. Answer *all* the questions : 10×2=20

(*a*) What are ideal solutions ?

(*b*) Enlist applications of colloids.

(*c*) What is sedimentation volume and degree of flocculation ?

(*d*) Differentiate between lyophilic colloids and lyophobic colloids.

(*e*) Define first order reaction with an example.

(*f*) What is Tyndall effect ?

(*g*) Define zeta potential with an example.

(*h*) What is Newton's law of flow ?

(*i*) Define viscosity along with its unit.

(*j*) Write a short note on thixotrophy.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain in detail the working principle of cup and bob and cone and plate viscometer with its advantages and disadvantages.

(*b*) Explain different methods of preparation and purification of colloids.

(*c*) What is accelarated stability study ? Give in detail its advantages and disadvantages.

3. Solve any *seven* of the following : 7×5=35

(*a*) Describe electrical properties of colloids.

(*b*) Explain theories of emulsification.

(*c*) Write the principle and working of coulter counter method to determine particle size with a neat diagram.

(*d*) Discuss briefly the concept of DLVO theory.

(*e*) Write a note on derived properties of powder.

(*f*) Explain principle and working of Ostwald's viscometer.

(*g*) Give the difference between flocculated and deflocculated suspension.

(*h*) Write about physical degradation pathway of pharmaceutical product.

(*i*) What is porosity ? Give its application in pharmacy.

This question paper contains **3** printed pages]

PP—44—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

JANUARY, 2024

PHARMACOLOGY-I

(BP–404T)

(Wednesday, 03-01-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Illustrate your answer with neat sketch wherever necessary.

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

1. Answer the following : 20

(*a*) Define the term pharmacokinetics and pharmacodynamics.

(*b*) Write the advantages and disadvantages of sublingual route of drug administration.

(*c*) Define the term idiosyncrasy and tachyphylaxis.

(*d*) Mention drug used in the treatment of Myasthenia gravis.

(*e*) Write mechanism of action of benzodiazepine

(*f*) Write therapeutic uses of Adrenaline.

P.T.O.

(*g*) Classify local anaesthetics with a suitable example.

(*h*) Define Nootropics and write its *two* examples.

(*i*) Define the terms anti-manics and hallucinogens.

(*j*) Enlist the drug used in the treatment of Parkinsons disease.

2. Answer the following (any *two*) : 20

(*a*) Define and classify parasympathomimetics agents and write pharmacological accounts of Acetylcholine.

(*b*) Define and classify sedative and hypnotics and write pharmacological accounts of barbiturates.

(*c*) Classify anti-depressants and write pharmacological account of SSRI.

3. Answer the following (any *seven*) : 35

(*a*) Classify anti-epileptic agents and write mechanism of action of phenytoin.

(*b*) Write the neurohumoral transmission in CNS.

(*c*) Write pharmacological action of alcohol.

(*d*) Define drug excretion and write factors affecting drug excretion.

(*e*) Write pharmacological account of Adrenaline.

(*f*) Write the factors affecting drug absorption.

(*g*) Write the phases of clinical trials.

(*h*) Define drug interaction and write the mechanism of drug interaction.

(*i*) Classify anti-anxiety agents and write the pharmacology of diazepam.

This question paper contains **3** printed pages]

PP—45—2023

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

JANUARY, 2024

PHARMACOGNOSY AND PHYTOCHEMISTRY-I

(BP–405T)

(Friday, 05-1-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

(*iii*) Answer to the point only.

1. Answer all the following questions : 10×2=20

(*a*) Define pharmacognosy and phytochemistry.

(*b*) Enlist sources of crude drug with examples.

(*c*) Differentiate between organized and unorganized crude drugs.

(*d*) Define drug aldulteration and drug evaluation.

(*e*) Define polyploids and mutation.

(*f*) Define plant tissue culture and give its types.

(*g*) Give biological source and chemical constituents of cotton.

P.T.O.

(*h*) Define Glycosides and tannins.

(*i*) Give Goldbeater's skin test.

(*j*) Write a note on method of preparation of Honey.

2. Answer any *two of* the following questions : 2×10=20

(*a*) Write history, scope and development of pharmacognosy.

(*b*) Write a short note on crude drug adulteration and any *two* methods of drug evaluation.

(*c*) Write synonym, biological source, chemical constituents, chemical test and uses of acacia and gelatin.

3. Answer any *seven* of the following : 7×5=35

(*a*) Classify crude drugs on the basis of Alphabetical and pharmacological classification.

(*b*) Write a note on factors influencing on cultivation of medicinal plants.

(*c*) Discuss in brief on historical development of PTC. Give nutritional requirement of PTC.

(*d*) Write about Ayurveda and Unani system of medicine.

(*e*) Give biological source, chemical constituent and uses of wool fat and bees wax

(*f*) Write a note on novel medicinal agents from marine sources.

(*g*) Give biological source, chemical constituent and uses of tragacanth and honey.

(*h*) Write a note on Hallucinogens and tetratogens.

(*i*) Give classification and general identification test for alkaloid and volatile oil.

This question paper contains 2 printed pages]

DP—32—2022

FACULTY OF PHARMACY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY-III

Paper-BP-401-T

(Friday, 17-03-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time— Three Hours *Maximum Marks—75*

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

(*ii*) Answer to the point only.

(*iii*) Draw correct structure wherever necessary.

1. Answer the following : 10×2=20

(*a*) Draw the layout of Isomerism.

(*b*) What are advantages of E & Z naming system over cis-trans naming ?

(*c*) Draw the structure and give their IUPAC name of pyrrole and pyridine.

(*d*) Write any *two* chemical reactions of pyrazole.

(*e*) Explain about Oppenauer oxidation reaction.

(*f*) Write Paal-knorr synthesis of furan.

(*g*) What do you mean by resolution of racemic mixture ?

(*h*) Write the medicinal uses of imidazole.

(*i*) Draw different resonance structure of oxazole.

(*j*) How will you prepare pyridine from acetylene.

2. Answer the following (any *two*) : 2×10=20

(*a*) Write short notes on :

(*i*) Skrup's synthesis for quinoline

(*ii*) Discuss the construction of pyridine. Give Hantzsch synthesis of pyridine.

P.T.O.

(*b*) Write a note on Cahn-Ingold prelog system and Fischer projection rule with suitable example.

(*c*) Write detailed notes on :

(*i*) Dakin reaction.

(*ii*) Partial and absolute asymmetric synthesis.

3. Answer the following (any *seven*) : 7×5=35

(*a*) Define and classify Heterocyclic compound with suitable example.

(*b*) Write Clemmenson reduction reaction with its mechanism.

(*c*) Write any *two* methods for preparation and chemical reaction of Indole.

(*d*) Define Geometric isomer. How will you distinguish geometric isomer ? Explain any *two* methods.

(*e*) Write a note on Stereoselective and Stereospecific reaction.

(*f*) How will you convert the following :

(*i*) Furan from pyrrole

(*ii*) Pyrrole from acetylene and formalin.

(*g*) Give the preparation, properties, chemical reaction and medicinal uses of thiazole.

(*h*) Draw the structure and IUPAC name of the following -

(*i*) Purine

(*ii*) Azepine

(*iii*) Quinoline

(*iv*) Pyrazole

(*v*) Indole

(*i*) Draw different Newmann conformation of n-butane with their stability order. Explain its energy profile diagram.

This question paper contains 3 printed pages]

DP—36—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

MEDICINAL CHEMISTRY–I

Paper BP402T

(Monday, 20-3-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks—75*

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

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

1. Solve the following questions : 10×2=20

(*a*) Draw the structure and give IUPAC name of Ibuprofen.

(*b*) Define general anaesthesia.

(*c*) Write *two* examples of narcotic antagonists.

(*d*) Write synthesis of phenytoin.

(*e*) Write about chelation.

(*f*) Write biosynthesis of NA.

(*g*) Write synthesis of carbachol.

(*h*) Draw structure and write IUPAC name of Diazepam.

(*i*) Write about hydrogen bonding.

(*j*) Enlist factors affecting drug metabolism.

P.T.O.

2×10=20

2. Solve any *two* of the following :

(*a*) Define antipsychotics. Explain SAR of phenothiazines.

(*b*) Classify NSAIDs with at least *one* structure from each class. Write synthesis of mefenamic acid.

(*c*) Discuss SAR of phenylethanolamines as an α-adrenergic agonists.

7×5=35

3. Solve any *seven* of the following :

(*a*) Draw structure of the following drugs :

(*i*) Salbutamol

(*ii*) Haloperidol

(*iii*) Ketamine

(*iv*) Phenobarbitone

(*v*) Valproic acid.

(*b*) Discuss SAR of morphine.

(*c*) Write biosynthesis and explain stereochemistry of Ach.

(*d*) Classify anticonvulsants with structure of at least *one* drug from each class.

(*e*) Write synthesis of :

(*i*) Propranolol

(*ii*) Methohexital.

(*f*) Write metabolic pathway of Noradrenaline.

(*g*) Write synthesis of :

(*i*) Methadone hydrochloride

(*ii*) Fentanyl citrate.

(*h*) Write MOA of benzodiazepines.

(*i*) Discuss SAR of barbiturates.

This question paper contains 2 printed pages]

DP—44—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACOLOGY–I

Paper BP404T

(Saturday, 25-3-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

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

(*ii*) Illustrate your answer with a neat sketch wherever necessary.

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

1. Answer the following : 10×2=20

(*a*) Define the following :

(*i*) Pharmacovigilance

(*ii*) Therapeutic index.

(*b*) What is Idiosyncrasy ? Write with an example.

(*c*) Write the effect of acetylcholine on eye and GIT.

(*d*) Define allergy and give signs and symptoms of allergic reaction.

(*e*) Give in brief about G-protein coupled receptor.

(*f*) Define pre-anaesthetics. Give its uses.

(*g*) What are Nootropics ? Give its therapeutic uses.

P.T.O.

(*h*) Define sedative and hypnotics with example.

(*i*) Define and classify antipsychotics.

(*j*) What is glaucoma ? Give its types.

2. Answer any *two* of the following : 2×10=20

(*a*) Define epilepsy. Classify seizures and give general mechanism of action for drugs used to treat it.

(*b*) Explain in detail Parkinson's disease. Give general mechanism of action of anti-Parkinson's drugs.

(*c*) Explain in detail different phases of clinical trials.

3. Answer any *seven* of the following : 7×5=35

(*a*) Explain advantages and disadvantages of various routes of drug administration.

(*b*) Describe in detail the principles and mechanisms involved in drug action.

(*c*) Explain in detail enzyme inhibition and enzyme induction.

(*d*) Write in detail about theories of receptor.

(*e*) Describe in detail myasthenia gravis.

(*f*) Define Anaesthetics. Describe various stages of anaesthesia.

(*g*) Explain in brief Alzheimer's disease and drugs used for treament of it.

(*h*) Describe in detail various routes of drug administration.

(*i*) Explain in detail about Receptors.

This question paper contains 2 printed pages]

DP—45—2022

FACULTY OF SCIENCE & TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACOGNOSY AND PHYTOCHEMISTRY

Paper-I

(Monday, 27-03-2023) **Time : 02.00 p.m. to 05.00 p.m.**

Time—Three Hours *Maximum Marks—75*

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

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

(*iii*) Write to the point only.

1. Answer the following : 2×10=20

(*i*) Define Adulteration and Evaluation.

(*ii*) Write the sources of crude drugs with one example each.

(*iii*) Define Pharmacognosy and Phytochemistry.

(*iv*) Differentiate between organised and unorganised crude drugs.

(*v*) Define mutation and polyploidy.

(*vi*) Define plant tissue culture. Give its types.

(*vii*) Define palisade ratio and vein termination number.

(*viii*) Write the biological source and chemical constituents of Jute.

(*ix*) Give the general identification tests for Alkaloids.

(*x*) Write the method of preparation of Honey.

P.T.O.

2. Answer any *two* of the following : 2×10=20

(*i*) Write synonym, Biological Source, Chemical Constituents, Chemical tests and uses of Tragacanth and Acacia.

(*ii*) Write history, scope and development of Pharmacognosy in detail.

(*iii*) Write in detail about physical evaluation of crude drugs.

3. Answer any *seven* of the following : 7×5=35

(*i*) Explain pharmacological and taxonomical classification of crude drugs.

(*ii*) Explain factors influencing the cultivation and collection of medicinal plants.

(*iii*) Write about historical development of PTC. Give the micro and macro nutrients required for PTC.

(*iv*) Write about Ayurveda and Sidha System of medicine.

(*v*) Give biological source, chemical constituents and uses of Bees wax and Castor oil.

(*vi*) Give the category and classification of marine drugs with examples.

(*vii*) Write the biological source, chemical constituents and uses of Gelatin and Papain.

(*viii*) Write a note on Natural allergens and Teratogens.

(*ix*) What are Carbohydrates ? Give its chemistry and general identification tests.

This question paper contains 4 printed pages]

VO—06—2022

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (II Year) (IV Semester) EXAMINATION

JUNE/JULY, 2022

PHARMACEUTICAL ORGANIC CHEMISTRY–III

(BP401T)

(Wednesday, 29-6-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time—3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Figures to the right indicate full marks.

(*ii*) Draw structures and write chemical reactions wherever necessary.

1. Answer all of the following : 10×2=20

(*a*) Define stereoisomerism.

(*b*) Why meso compounds are optically inactive.

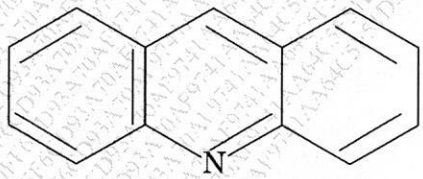
(*c*) Draw the following structures :

(*i*) cis-(2-butene)

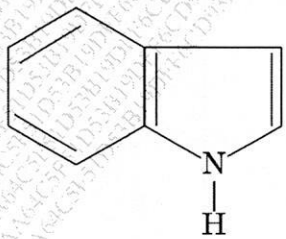
(*ii*) Fumaric acid.

(*d*) Identify and name the following organic compounds :

(*i*)



(*ii*)



P.T.O.

(*e*) Write medicinal uses of azepines.

(*f*) Why is pyridine weaker base than aliphatic tertiary amines ?

(*g*) How to prepare furan from furfural ?

(*h*) Draw resonance structures of thiophene.

(*i*) Write true/false :

(*i*) Oxazole is six membered ring.

(*ii*) Anticonformation of *n*-butane is most stable conformation.

(*j*) Define diastereomers with example.

2. Answer any *two* of the following : 2×10=20

(*a*) Write any *three* chemical reactions of quinoline and *two* preparation methods pyrrole.

(*b*) Write nitration, mercuration, sulphonation, ring cleavage and reduction reactions of thiophene.

(*c*) Explain mechanism of the following reaction :

(*i*) Beckmann rearrangement

(*ii*) Birch reduction.

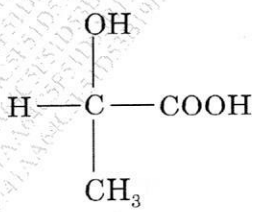
3. Answer any *seven* of the following : 7×5=35

(*a*) Write note on Clemmensen reduction reaction.

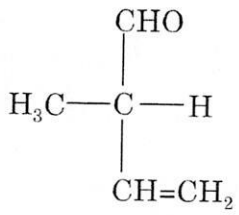
(*b*) Write note on chair conformation and boat conformation of cyclohexane.

(*c*) Assign RIS conformation to the following compounds (if any) by implementing CIP rules.

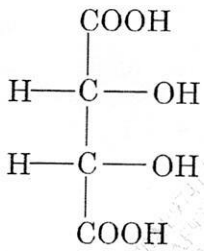
(*i*)



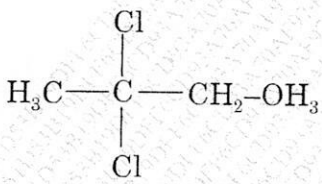
(*ii*)



(*iii*)

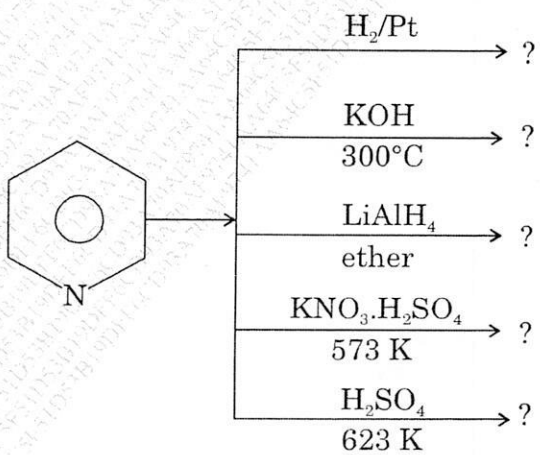


(*iv*)



(*d*) Explain any *two* methods for determination of configuration of geometrical isomers.

(*e*) Complete the following reactions :



P.T.O.

(*f*) Write oxidation and reduction reaction of isoquinoline.

(*g*) Classify heterocyclic compounds with examples.

(*h*) Write medicinal uses of pyrimidine and pyrazole.

(*i*) Answer the following questions :

(*i*) Write any *two* preparation methods of thiazole. 3

(*ii*) Draw resonance structures of imidazole. 2

This question paper contains **3** printed pages]

VO—14—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (II Year) (IV Sem.) EXAMINATION

JUNE/JULY, 2022

MEDICINAL CHEMISTRY–I

(BP402T)

(Friday, 1-7-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time—3.45 *Hours* *Maximum Marks*—75

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

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

(*iii*) Answer to the point only.

(*iv*) Draw the structures whenever necessary.

1. Answer the following questions : 10×2=20

(*a*) Give therapeutic uses of Aspirin.

(*b*) Give structure and uses of Dicylomine Hydrochloride.

(*c*) Enumerate physicochemical properties in relation to biological action.

(*d*) Define :

(*i*) Agonist

(*ii*) Antagonist.

(*e*) Give the synthesis of salbutamol.

P.T.O.

(*f*) Write the mode of action of clonazepam.

(*g*) Classify narcotic antagonist with suitable examples.

(*h*) Give the structures of any *two* adrenergic neuro-transmitters.

(*i*) Give an account on mechanism of action of antipsychotic drugs.

(*j*) Differentiate between Benzodiaxptoes and Barbfturates.

2. Answer any *two* of the following (long answer questions) : 2×10=20

(*a*) What are antipsychotics ? Classify them with examples and structure. Discuss in detail SAR of phenothiazeines.

(*b*) Outline the synthesis of :

(*i*) Phenytoin

(*ii*) Mefenamic acid

(*iii*) Halothane

(*iv*) Propranolol

(*c*) What are sedatives and Hypnotics ? Classify them with examples and structures. Discuss in detail SAR of Benzodiazepines.

3. Answer any *seven* of the following (short answer questions) : 7×5=35

(*a*) Give an account of Biosynthesis of Acetylcholine.

(*b*) Write a note on β-adrenergic blocker.

(*c*) Give mechanism of action and therapeutic uses of Atropine sulphate.

(*d*) What are parasympathamimetic agents ? Give structural classification of parasympathomimetics with examples.

(*e*) Explain role of phase I reactions in drug metabolism with examples.

(*f*) Discuss in detail SAR of sympathomimetric agents.

(*g*) Write a note on cholinesterase reactivator.

(*h*) Classify general anesthetics with their structures.

(*i*) Draw the structures of following compounds :

(*i*) Neostigmine

(*ii*) Asenolol

(*iii*) Dopamine

(*iv*) Codeine

(*v*) Ibuprofen.

This question paper contains 2 printed pages]

VO—22—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHYSICAL PHARMACEUTICS–II

(Monday, 4-7-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

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

(*ii*) Draw a diagram wherever necessary.

(*iii*) Use log table/calculator if necessary.

1. Answer all the questins : 10×2=20

(*a*) What are Physical Characteristics of Colloidal dispersions ?

(*b*) What is criteria for selection of the viscometer ?

(*c*) Differentiate between flocculated and deflocculated suspension.

(*d*) Define True density and Enlsit the methods for determination of true density.

(*e*) Enlist methods for determination of order of reactions.

(*f*) Define Krafft point and Cloud point.

(*g*) Give short note on Newtons law of flow.

(*h*) Define suspension and emulsion.

(*i*) Enlist fundamental micromeritic properties of powder.

(*j*) A drug decomposes following first order kinetics. The half life of the reaction is 35 min. What will be the rate constant and shelf life of drug ?

P.T.O.

2. Answer any *two* questions out of *three* : 2×10=20

(*a*) Explain optical and kinetic properties of colloids in detail.

(*b*) Explain methods for measurement of surface area of given sample of powder.

(*c*) Explain rheograms of Newtonian and Non-Newtonian Systems.

3. Answer any *seven* of the following : 7×5=35

(*a*) Give Pharmaceutical applications of colloids.

(*b*) Write short note on theories of emulsification.

(*c*) Describe in detail non-Newtonian Systems of rheology.

(*d*) Give the applications of micromeritics study in Pharmacy.

(*e*) Explain effect of temperature and solvent on chemical degradation of Pharmaceutical Product.

(*f*) What are different types of colloids ? Explain in detail ?

(*g*) Write a short note on thinotropy.

(*h*) What are types of emulsion ? Give identification tests for it ?

(*i*) Write in brief about seiving method for measurement of particle size of given sample of powder.

695F59FC65D5407C89B8D26F34950E9E

This question paper contains **2** printed pages]

VO—30—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHARMACOLOGY-I

(BP404T)

(Wednesday, 6-7-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

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

(*ii*) Draw a neat labelled diagram whenever necessary.

(*iii*) Answer to the point only.

1. Answer the following : 2×10=20

(*a*) Define the terms :

(*i*) Pharmacokinetics

(*ii*) Pharmacodynamics.

(*b*) What are agonist and antagonist ?

(*c*) Write the mechanism of action of Disulfiram.

(*d*) What are enzyme induction and enzyme inhibition ?

(*e*) What is Nootropics ? Give its examples.

(*f*) What are Drug addiction and Drug tolerance ?

(*g*) Enlist the drugs used in the treatment of Myasthenia gravis.

(*h*) Define and classify Receptor.

(*i*) What are antagonism and synergism ?

(*j*) Classify local anaesthetic agents.

P.T.O.

2. Answer the following (any *two*) : 2×10=20

(*a*) What is parasympathomimetic agents ? Classify it. Write pharmacological account of Acetylcholine.

(*b*) Define and classify sedative and hypnotics and write pharmacological account of Barbiturates.

(*c*) Discuss in detail mechanism and factors affecting drug absorption.

3. Answer the following (any *seven*) : 5×7=35

(*a*) What is drug excretion ? Write factors affecting drug excretion.

(*b*) Write the principles and mechanism of Drug action.

(*c*) Define and classify adverse drug reactions.

(*d*) Write the phases of clinical trials.

(*e*) Write the steps of neurohumoral transmission in ANS.

(*f*) Write the pharmacological account of Adrenalin.

(*g*) Classify parasympatholytic agents. Write pharmacology of Atropine.

(*h*) Classify Antiepileptic agents and write MoA of Phenytoin.

(*i*) Write the mechanism of Drug Interactions with examples.

346461F5B0203EB88FC748713A134131

This question paper contains 2 printed pages]

VO—33—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

PHARMACOGNOSY AND PHYTOCHEMISTRY-I

(BP405T)

(Thursday, 7-7-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Draw a diagram wherever necessary.

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

(*iii*) Write answers to the point only.

1. Answer *all* the questions : 10×2=20

(*a*) Write biolgoical sources and uses of Hemp.

(*b*) Give idntification tests for glycosides.

(*c*) Define :

(*i*) Vein inslet number

(*ii*) Stomatal index.

(*d*) List out any *four* newer medicinal agents from marine source.

(*e*) Define pharmacognosy.

(*f*) What are organised drugs ? Give its suitable example.

(*g*) Give the advantages of edible vaccines.

(*h*) Enlist various uses of Serratiopeptidase.

(*i*) Write down any *four* examples of plant hormones.

(*j*) What is drug adulteration ? Give its example.

P.T.O.

WT

2. Long answer type questions (answer **2** out of 3) : 2×10=20

(*a*) Describe the various factors affecting on cultivation of Medicinal plant.

(*b*) Define drug adulteration. Explain organoleptic and microscopical evaluation of crude drugs.

(*c*) Explain the Ayurvedic and Unani system of Medicine.

3. Short answer type questions (Answer **7** out of 9) : 7×5=35

(*a*) Define Alkaloids. Discuss chemical classification of alkaloids.

(*b*) Define pharmacognosy. Explain history and scope of Pharmacognosy.

(*c*) Discuss the various applications of plant tissue culture in pharmacognosy.

(*d*) Write a note on animal as a source of drug.

(*e*) Briefly discuss the pharmacological classification of drugs.

(*f*) What are teratogens ? Describe in detail.

(*g*) Write a pharmacognostic account of wool fat.

(*h*) Explain polyploidy and hybridization with reference to medicinal plant.

(*i*) Write down the classification and identification tests for tannins.

This question paper contains 2 printed pages]

DP—32—2022

FACULTY OF PHARMACY

B.Pharm. (IV Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACEUTICAL ORGANIC CHEMISTRY-III

Paper-BP-401-T

(Friday, 17-03-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time— Three Hours *Maximum Marks—75*

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

(*ii*) Answer to the point only.

(*iii*) Draw correct structure wherever necessary.

1. Answer the following : 10×2=20

(*a*) Draw the layout of Isomerism.

(*b*) What are advantages of E & Z naming system over cis-trans naming ?

(*c*) Draw the structure and give their IUPAC name of pyrrole and pyridine.

(*d*) Write any *two* chemical reactions of pyrazole.

(*e*) Explain about Oppenauer oxidation reaction.

(*f*) Write Paal-knorr synthesis of furan.

(*g*) What do you mean by resolution of racemic mixture ?

(*h*) Write the medicinal uses of imidazole.

(*i*) Draw different resonance structure of oxazole.

(*j*) How will you prepare pyridine from acetylene.

2. Answer the following (any *two*) : 2×10=20

(*a*) Write short notes on :

(*i*) Skrup's synthesis for quinoline

(*ii*) Discuss the construction of pyridine. Give Hantzsch synthesis of pyridine.

P.T.O.

(*b*) Write a note on Cahn-Ingold prelog system and Fischer projection rule with suitable example.

(*c*) Write detailed notes on :

(*i*) Dakin reaction.

(*ii*) Partial and absolute asymmetric synthesis.

3. Answer the following (any *seven*) : 7×5=35

(*a*) Define and classify Heterocyclic compound with suitable example.

(*b*) Write Clemmenson reduction reaction with its mechanism.

(*c*) Write any *two* methods for preparation and chemical reaction of Indole.

(*d*) Define Geometric isomer. How will you distinguish geometric isomer ? Explain any *two* methods.

(*e*) Write a note on Stereoselective and Stereospecific reaction.

(*f*) How will you convert the following :

(*i*) Furan from pyrrole

(*ii*) Pyrrole from acetylene and formalin.

(*g*) Give the preparation, properties, chemical reaction and medicinal uses of thiazole.

(*h*) Draw the structure and IUPAC name of the following -

(*i*) Purine

(*ii*) Azepine

(*iii*) Quinoline

(*iv*) Pyrazole

(*v*) Indole

(*i*) Draw different Newmann conformation of n-butane with their stability order. Explain its energy profile diagram.

This question paper contains **2** printed pages]

CO—05—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharmacy (Second Year) (Fourth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2019

PHARMACEUTICAL ORGANIC CHEMISTRY-III

(BP-401T)

(Thursday, 28-11-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw structure and reaction wherever necessary.

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

1. Answer the following : 10×2=20

(*a*) Write Paal-Knorr synthesis of pyrrole.

(*b*) How will you prepare ortho/para substituted phenol from ortho/para substituted benzaldehyde by using Dakin reaction.

(*c*) Write any *two* nucleophilic substitution reaction of pyridine.

(*d*) Give the difference between conformational and configurational isomerism.

(*e*) Write the condition for optical isomerism.

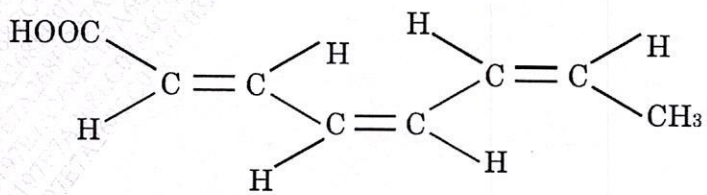
(*f*) Write a short note on DL system nomenclature.

(*g*) Explain the Birch reduction reaction.

(*h*) Write any *two* chemical reactions of thiophene.

(*i*) Write the structure and medicinal uses of pyrimidine.

(*j*) Assign E and Z isomerism :



P.T.O.

2. Answer any *two* of the following : 2×10=20

(*a*) Write any *four* synthetic and chemical reaction of Indole.

(*b*) Write CIP rule and Fischer projection with suitable example.

(*c*) Write the Backmann and Clemmensen reaction with its mechanism.

3. Answer any *seven* of the following : 7×5=35

(*a*) Write the Claisen–Schmidt reaction with suitable reactions.

(*b*) Write different conformation of *n*-butane with its energy profile diagram.

(*c*) Explain Enantiomers and distereoisomerism with suitable example.

(*d*) What is prefer position for electrophilic substitution reaction of Thiophene.

(*e*) What is ring flipping ? Explain with structure.

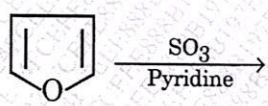
(*f*) Define Racemic mixture. Explain various methods for resolution of racemic mixture with example.

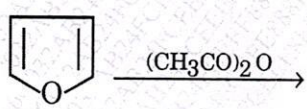
(*g*) Give the rule for nomenclature of heterocyclic compound with proper example.

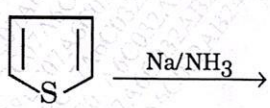
(*h*) Write any *four* chemical reaction of Quinoline.

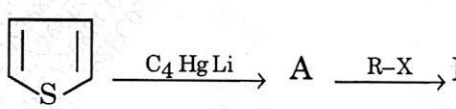
(*i*) Predict the product :

(*i*) 

(*ii*) 

(*iii*) 

(*iv*) 

(*v*) 

This question paper contains 2 printed pages]

CO—10—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharmacy (Second Year) (Fourth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2019

MEDICINAL CHEMISTRY-I

(BP-402T)

(Saturday, 30-11-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Answer to the point only.

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

1. Answer the following : 20

(*a*) Define Pharmacophore and biotransformation.

(*b*) Draw the structure and give the IUPAC name of Tolazoline.

(*c*) Sketch out the synthetic scheme of phenytoin.

(*d*) Classify general anaesthetics with at least *one* structure.

(*e*) Draw any *one* structure in the class of narcotic antagonist.

(*f*) Draw the structure and give the therapeutic uses of Ibuprofen.

(*g*) Why are barbiturates acidic in nature ?

(*h*) Enlist the factors affecting on drug metabolism.

(*i*) Draw the structure of medicinal compound containing benzodiazepine nucleus.

(*j*) Give the example and structure of cholinesterase reactivator.

2. Answer any *two* of the following : 20

(*a*) What are sedative and hypnotics ? Give the classification of it with structure from each class. Outline the synthesis of diazepam.

(*b*) Define Antipsychotics. Explain the SAR of phenothiazines.

(*c*) What are antiinflammatory agents ? Classify it on chemical basis. Sketch out the synthetic scheme of mefenamic acid.

P.T.O.

5B7665FFB083628A9D5EB26AF9499B1F

7×5=35

3. Answer any *seven* of the following :

(*a*) Discuss the SAR of morphine.

(*b*) Classify anticonvulsant agents with suitable example.

(*c*) Give the biosynthetic pathway of Ach.

(*d*) Give the receptor target of the following drugs :

(*i*) Salbutamol

(*ii*) Propranolol

(*iii*) Dicyclomine hydrochloride

(*iv*) Haloperidol

(*v*) Carbamazepine.

(*e*) Sketch out the synthetic scheme of the following drugs :

(*i*) Phenylephrine

(*ii*) Neostigmine.

(*f*) Discuss the SAR of barbiturates.

(*g*) Draw the structure of the following durgs :

(*i*) Oxazepam

(*ii*) Ketamine

(*iii*) Chlorpromazine

(*iv*) Halothane

(*v*) Methohexital.

(*h*) What are β-adrenergic blockers ? Write synthesis of propranolol.

(*i*) Explain the biosynthesis and release of Novepinephrine.

5B7665FFB083628A9D5EB26AF9499B1F

This question paper contains **2** printed pages]

CO—15—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2019

PHYSICAL PHARMACEUTICS—II

(BP–403T)

(Tuesday, 3-12-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

1. Solve *all* questions : 10×2=20

(*a*) Explain peptization.

(*b*) Classify disperse systems.

(*c*) State law of flow (Newtonian flow).

(*d*) Define viscosity with unit.

(*e*) What is strain ?

(*f*) Give interfacial properties of suspended particles.

(*g*) What is the flocculated suspension ?

(*h*) Enlist theories of emulsification.

(*i*) Define porosities.

(*j*) Define second order reaction and half-life.

2. Solve any *two* : 2×10=20

(*a*) Derive equation for first order reaction kinetics.

(*b*) Explain non-Newtonian flow behaviour with suitable examples.

(*c*) Explain kinetic properties of colloidal dispersions.

P.T.O.

3. Solve any *seven* : 7×5=35

(*a*) Explain optical microscopy method of particle size determination.

(*b*) Explain optical properties of colloidal dispersion.

(*c*) Explain lyophobic colloids.

(*d*) Discuss different types of viscometers.

(*e*) Explain rheological properties of emulsion.

(*f*) Explain thixotropy in formulation.

(*g*) How are the drug stabilized against hydrolysis ? Give suitable example.

(*h*) Describe accelerated stability study.

(*i*) Explain angle of repose and Carr's compressibility index.

This question paper contains **2** printed pages]

CO—20—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2019

PHARMACOLOGY—I

(BP404T)

(Thursday, 5-12-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(*ii*) Draw a neat labelled diagram wherever necessary.

(*iii*) Answer to the point only.

1. Answer the following : 10×2=20

(*a*) Write advantages and disadvantages of parenteral route of drug administration.

(*b*) What are partial against and inverse against ?

(*c*) What is Tachyphylaxis ?

(*d*) Define metabolism and enlist its phases.

(*e*) Enlist cholinergic receptor with locations.

(*f*) Classify neuromuscular blocking agents with examples.

(*g*) What are adverse drug reactions ?

(*h*) Write mechanism of action of phenytoin.

(*i*) Write therapeutic uses of Atropine.

(*j*) What are drug abuse and drug addictions ?

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Define and classify antiepileptic agents. Write pharmacological account of Gabapentin.

(*b*) Classify sympathomimetic agents. Write pharmacological account of adrenaline.

(*c*) Describe in detail mechanisms of drug absorptions.

3. Solve any *seven* of the following : 7×5=35

(*a*) Give pharmacology of morphine.

(*b*) Classify anti-depressant drugs. Write pharmacology of Tricyclic anti-depressant drugs.

(*c*) Write pharmacological account of Benzodiazepines.

(*d*) Write in detail pharmacological actions of alcohol.

(*e*) Write pharmacological account of Acetylcholine.

(*f*) Discuss steps of neurohumoral transmission in CNS.

(*g*) Write various stages of general anaesthesia.

(*h*) Write various phases of clinical trials.

(*i*) Write mechanism of drug interactions with examples.

C2756478C5E19D3224BD065D0AAF73E8

This question paper contains **2** printed pages]

CO—21—2019

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (IV Sem.) EXAMINATION

NOVEMBER/DECEMBER, 2019

PHARMACOGNOSY AND PHYTOCHEMISTRY—I

(BP45T)

(Friday, 6-12-2019) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

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

(*iii*) Write to the point only.

1. Answer all the questions : 10×2=20

(*a*) Give any *two* examples of plant sources.

(*b*) Define crude drug. Give any *two* examples.

(*c*) Define stomatal number and stomatal index.

(*d*) What is organized drug ?

(*e*) Write any *two* identification tests of alkaloids.

(*f*) Write biological source and uses of Honey.

(*g*) Give chemical test and Acacia.

(*h*) Define Evaluation and Adulteration.

(*i*) Write uses of Chaulmoogra oil and casein.

(*j*) Define polyploidy and mutation.

2. Answer any *two* of the following : 2×10=20

(*a*) Discuss historical development of plant tissue culture. Write applications of plant tissue culture in pharmacognosy.

(*b*) Define pharmacognosy. Explain history and scope of pharmacognosy.

(*c*) Explain physical evaluation with examples.

P.T.O.

3. Answer any *seven* of the following : 7×5=35

(*a*) What is cultivation ? Discuss factors affecting cultivation of crude drug.

(*b*) Write a short note on Ayurveda and Homeopathy system of medicine.

(*c*) Write biological source and uses of Agar and Tragacanth.

(*d*) Define volatile oil. Discuss classification of volatile oil.

(*e*) Write a short note on edible vaccines.

(*f*) Write biological source and uses of Hemp and Bees wax.

(*g*) Write pharmacognostic account of caster oil.

(*h*) Write biological source and uses of Cotton and Gelatin.

(*i*) Discuss methods of adulteration.