This question paper contains 3 printed pages]

NM—32—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

PHARMACEUTICAL ORGANIC CHEMISTRY—III

Paper BP401T

(Friday, 17-4-2026) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Draw the structures wherever necessary.

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

(*a*) Write any *two* electrophilic reaction of furan.

(*b*) Write the synthesis of thiophene by using alpha halo ketone.

(*c*) Draw a layout of classification of isomerism.

(*d*) What do you mean by D & L Nomenclature ?

P.T.O.

(*e*) Write the Paal-Knorr synthesis of pyrrole.

(*f*) Write the mechanism of Oppenauar oxidation reaction.

(*g*) Why cis isomers are stable than trans isomerism ?

(*h*) Write any *two* applications of Dakin rearrangement.

(*i*) What are syn-anti-elimination reaction ?

(*j*) What do you mean by Whitmove 1, 2-shift ?

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

(*a*) Define conformational isomerism. Write the different conformation of *n*-butane and cyclohexane with its energy profile diagram.

(*b*) Write any *three* methods for synthesis and *four* chemical reactions of quinoline.

(*c*) Write the definition, mechanism and application of Beckmann rearrangement and Wolf-Kishner reaction.

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

(*a*) Write the CIP rule with suitable example.

(*b*) Write the different methods of resolution of racemic mixture.

(*c*) Write the chemical reactions of thiophene.

(*d*) Explain Fischer-Indole synthesis of Indole.

(*e*) Write a note on stereospecific and stereoselective reaction.

(*f*) Define heterocyclic compound and classify them with suitable example.

(*g*) Explain metal hydride reduction reaction with mechanism.

(*h*) Write the synthesis of pyridine and pyrimidine.

(*i*) Explain Schmidt rearrangement and Claisen-Schmidt condensation reaction.

This question paper contains 3 printed pages]

NM—36—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

MEDICINAL CHEMISTRY—I

(Monday, 20-4-2026) (BP402T) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Answers to the point point.

(3) Figures to the right indicate full marks.

1. Answer the following : 10×2=20

(*a*) Sketch out scheme of synthesis of propranolol.

(*b*) Define Bioisosterism.

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

(*d*) Enlist factors affecting drug metabolism.

(*e*) Give mechanism of action of Benzodiazepines.

P.T.O.

(f) Draw structure and give therapeutic uses of Aspirin.

(g) Define Sedative and hypnotics. Draw structure of one drug from each category.

(h) Give synthesis of Mefenamic acid.

(i) Explain biosynthesis of catecholamine.

(j) Give an account of cholinergic receptors.

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

(a) Define antipsychotics. Classify them with at least *one* structure from each class. Explaina SAR of phenothiazine.

(b) What are sympathomimetic agents ? Classify them with suitable examples. Explain the structure activity relationship (SAR) of sympathomimetic agents.

(c) Explain SAR of Barbiturates. Give synthesis of barbital.

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

(a) Describe ionization, solubility and hydrogen bonding in relation to biological action.

(b) Explain anticonvulsants.

(c) Write SAR of parasympathomimetics agent.

(d) Classify antiphychotic agents.

(e) Draw structure of the following compounds :

(i) Diazepam

(ii) Phenylephrine

(iii) Salbutamol

(iv) Tolazoline

(v) Dicyclomine hydrochloride.

(f) Draw scheme of synthesis of Diazepam and Dicyclomine hydrochloride.

(g) Identify parent nucleus present in the drug. Draw its structure :

(i) Tolazoline

(ii) Pyridostigmine

(iii) Ketamine Hydrochloride

(iv) Codeine

(v) 2-PAM.

(h) Give SAR of Benzodiazepines.

(i) Describe catabolism and metabolism of acetylcholine.

This question paper contains 3 printed page]

NM—40—2026

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (Fourth Semester) EXAMINATION

APRIL/MAY, 2026

PHYSICAL PHARMACEUTICS-II

Paper-BP403T

(Wednesday, 22-4-2026) **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 the following questions : 10×2=20

(*a*) Differentiate between molecular dispersion of colloidal dispersion.

(*b*) What is order of reaction and molecularity of reaction ?

(*c*) Define gold number.

(*d*) Give the characteristics of ideal suspension.

(*e*) Define stokes diameter and sieve diameter.

(*f*) Write a note on Brownian motion.

P.T.O.

(*g*) What are general characteristics of colloids ?

(*h*) Define the term coefficient of viscosity. Give its unit.

(*i*) Define the terms Yield value and Thixotropy.

(*j*) What is angle of repose ? Give its formula.

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

(*a*) Explain the formulation of suspension by the following points :

(*i*) Dispersion of solids

(*ii*) Deflocculation in structured vehicles.

(*b*) Define and classify flow and explain non-Newtonian flow with consistency curves.

(*c*) Enlist method of determination of particle size and explain Coulter counter method.

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

(*a*) Define accelerated stability study and write its salient properties.

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

(*c*) Give pharmaceutical applications of colloids.

(*d*) What is specific surface area ? Describe Air permeability method to determine it.

(*e*) What is auto oxidation ? How will you prevent auto oxidation to enhance stability of dosage form.

(*f*) Give the construction and working of falling sphere viscometer.

(*g*) Describe kinetic properties of colloids.

(*h*) Write a note on DLVO theory.

(*i*) Define and explain zero order reaction.

This question paper contains 2 printed pages]

NM—44—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

PHARMACOLOGY–I

Paper–BP404T

(Friday, 24-4-2026) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—70

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

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

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

1. Answer the following : 2×10=20

(*a*) Define the terms Pharmacokinetic and Pharmacodynamics.

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

(*c*) Write the MoA Lignocaine.

(*d*) Enlist the cholinergic receptor with their location.

(*e*) Classify skeletal muscle relaxtant with examples.

(*f*) What are Adverse drug reaction ?

(*g*) Define the terms carcinogenecity and genotoxicity.

P.T.O.

(*h*) What are drug tolerance and drug dependance ?

(*i*) Enlist the different barriers for drug distribution.

(*j*) Mention the non-renal route for drug excretion.

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

(*a*) Define and classify general anaesthetics and discuss in detail phases of general anaesthesia.

(*b*) Write the mechanism of drug Absorption and discuss the factors affecting drug absorption.

(*c*) Define the classify parasympathomimetic agents and write pharmacology of Acetyl choline.

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

(*a*) What is drug metabolism ? Explain phases of drug metabolism.

(*b*) Discuss the mechanism of drug action.

(*c*) Define and classify pharmacokinetic drug interaction.

(*d*) Write the pharmacology of Morphine.

(*e*) What are the various stages of New drug discovery process.

(*f*) Write the pharmacology of Atropine.

(*g*) Give the pharmacology of Barbiturate.

(*h*) Define and classify Antipsychotic agents.

(*i*) Classify Antidepressants and write pharmacology of Amitryptiline.

This question paper contains 2 printed page]

NM—45—2026

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (IV Semester) EXAMINATION

APRIL/MAY, 2026

PHARMACOGNOSY AND PHYTOCHEMISTRY-I

(Saturday, 25-4-2026) (BP405T) **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* of the following : 10×2=20

(*a*) Define mutation and polyploidy.

(*b*) What are edible vaccines ?

(*c*) Write a note on sources of crude drugs.

(*d*) Define PTC. Give nutritional requirements for the typical plant tissue culture media.

(*e*) Define vein islet number and stomatal index.

(*f*) Enlist various uses of serratiopeptidase.

(*g*) What is drug adulteration ? Give its examples.

P.T.O.

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

(*i*) Define glycosides and alkaloids.

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

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

(*a*) Define adulteration of crude drugs and explain various methods of adulteration.

(*b*) Write biological source and uses of cotton, Jute, Acacia, Agar and Papain.

(*c*) Explain Ayurvedic and Homeopathy system of medicine.

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

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

(*b*) Define and classify tannins and write its identification test.

(*c*) Explain cultivation and collection of crude drugs.

(*d*) Explain in detail pharmacological classification of drugs.

(*e*) Write the pharmacognostic account of wool fat.

(*f*) Write biological source and uses of castor oil and chaulmoogra oil.

(*g*) Write a note on Lycopodium spore method.

(*h*) Write chemical test for identification of Acacia and Agar.

(*i*) Write a note on marine sources of novel medicinal agents.

Total No. of Printed Pages:02

SUBJECT CODE NO- NM-45-2026
FACULTY OF SCIENCE AND TECHNOLOGY
EXAMINATION SUMMER 2025
B.PHARM (SECOND YEAR) (SEM-IV)
PHARMACOGNOSY AND PHYTOCHEMISTRY- I

[Time: 3:00 Hours] (BP405T) **[Max.Marks:75]**

"Please check whether you have got the right question paper."

N.B. i) All questions are compulsory
ii) Answer to the point only
iii) Figures to the right indicate full marks.

Q.1 Answer the following questions **20**

a)Define Pharmacognosy.

b)What is Totipotency?

c)Write various sources of crude drugs.

d)Write biological source & uses of cotton

e)What are natural allergens? Give examples.

f)Define & classify Tannins.

g)Define evaluation of crude drugs & enlist any four.

h)Write method of preparation of Honey.

i)Enlist plant hormones & write any two applications.

j)Write chemical test for identification of Agar & Acacia.

Q.2 Solve any two of the following **20**

a)Explain the term adulteration & enumerate various types of adulteration with examples of crude drug.

b)Write biological sources, chemical constituents & uses of Tragacanth, Castor oil, Chaulmoogra oil, Bromelain & Gelatin.

c)Write a note on historical development & applications of Plant tissue culture.

Q.3 Solve any seven of the following

a)Define & classify Alkaloids.

b)Write in detail about Ayurvedic system of medicine.

c)Explain about Lycopodium spore method for quantitative analysis.

d)Write a brief about morphological & chemical classification of crude drugs.

e)Explain about nutritional requirement of Plant tissue culture.

f)Write various factors affecting cultivation of crude drugs.

g)Describe basic principal involved in Siddha system of medicine

h)Discuss about properties & identification test of Flavonoids

i)Write source, chemistry & uses of Casein.