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) (BP 401 T) 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.
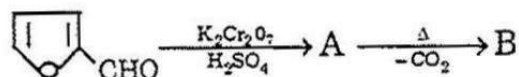
1. Solve the following :   10×2=20

   (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.

(i) Predict the product of the following reaction :
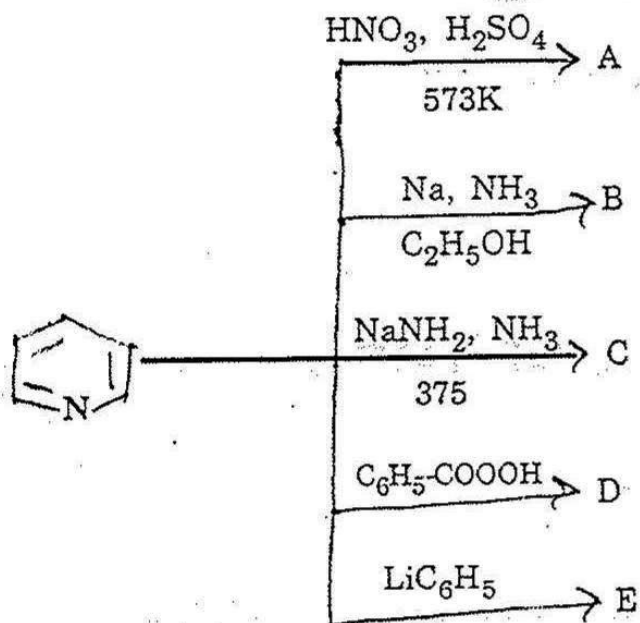
SP—36—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

MEDICINAL CHEMISTRY—I

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 anaesthetics 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.

X940YE85B89X940YE85B89X940YE85B89X940YE85B89

SP—40—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharma (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

PHYSICAL PHARMACEUTICS

Paper–II

(Monday, 20-5-2024)   (BP-405T)   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.

X940Y0B7BA2X940Y0B7BA2X940Y0B7BA2X940Y0B7BA2

    (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.

X940Y0B7BA2X940Y0B7BA2X940Y0B7BA2X940Y0B7BA2

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)   (BP404T)   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 — I

Paper–I

(Friday, 24-5-2024)　　(BP-405T)　　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.