

This question paper contains 3 printed pages]

AM—32—2024

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2024

PHARMACEUTICAL ORGANIC CHEMISTRY

Paper-III

(Tuesday, 17-12-2024) (BP401T) 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 the following : 10×2=20

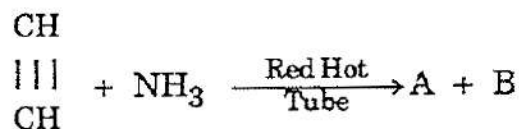
(a) Define optical activity.

(b) What is racemization ?

(c) Give any two examples of E and Z nomenclature.

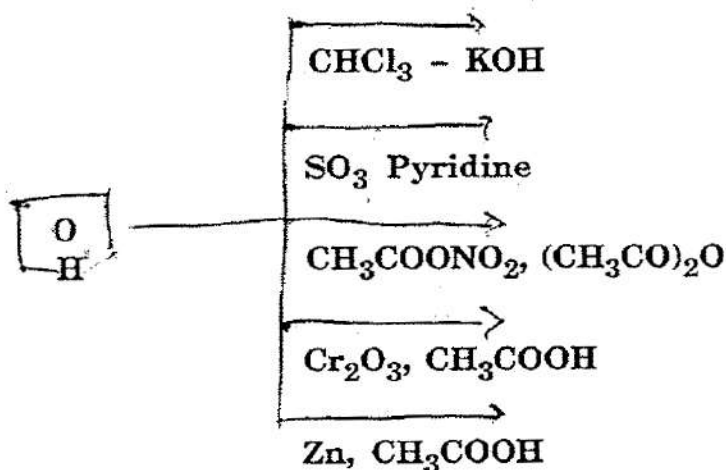
(d) Why trans-isomer is more stable than cis-isomer ?

(e) Complete the following reaction :



P.T.O.

- (f) Write any *four* medicinal uses of thiophene.
- (g) Outline skraup synthesis of quinoline.
- (h) Draw the structure of Acridine and Purine.
- (i) What is Clemmensen reduction ?
- (j) Mention any *two* reducing agents.
2. Solve any *two* of the following : 2×10=20
- (a) Write a note on R and S configuration.
- (b) Write any *two* synthesis and *four* chemical properties of Pyridine.
- (c) Explain Birch reduction and Oppenauer oxidation with mechanism.
3. Solve any *seven* of the following : 7×5=35
- (a) Give any *two* synthesis and medicinal uses of Imidazole.
- (b) Write down classification of heterocyclic compounds .
- (c) Discuss stereoselective and stereospecific reaction.
- (d) Predict the product :



- (e) Draw the resonance structures of Thiazole and write applications of Thiazole.
- (f) Write down mechanism involved in Dakin reaction.
- (g) Explain confirmation of cyclohexane.
- (h) Differentiate between Enantiomer and Diastereomers.
- (i) Write a note on Beckmann's rearrangement.

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AM—36—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

MEDICINAL CHEMISTRY

Paper-I

(BP-402-T)

(Thursday, 19-12-2024)

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 a well labelled diagram wherever necessary.

1. Answer *all* questions :

10×2=20

(a) Compare Benzodiazepines and Barbiturates.

(b) What is Bioisosterism ? Explain with example.

(c) Classify anticonvulsants.

(d) Write structure and IUPAC name of Aspirin.

(e) Enlist factors affecting drug metabolism.

(f) Define antipsychotics with example.

P.T.O.

- (g) Write structure and uses of carbachol.
- (h) Enumerate physiological properties in relation to biological action.
- (i) Draw structures of any *two* Adrenergic neurotransmitters.
- (j) What are cholinergic receptors ?
2. Answer any *two* of the following (Long Answer Questions) : $2 \times 10 = 20$
- (a) Define sedative and hypnotics. Classify sedative and hypnotics. Discuss SAR of barbiturates.
- (b) Classify narcotics. Give SAR of morphine analogues outline synthesis of Mefenamic acid.
- (c) Outline scheme of synthesis of :
- (i) Salbutamol
- (ii) Propranolol
- (iii) Halothane
- (iv) Chlorpromazine hydrochloride.
3. Answer any *seven* of the following (Short Answer Questions) : $7 \times 5 = 35$
- (a) Classify sympathomimetics ? Discuss in short SAR of sympathomimetics.
- (b) Discuss phase-II metabolic reactions.

- (c) Draw structures of :
- (i) Phenylephrine
 - (ii) Atenolol
 - (iii) Atropine sulphate
 - (iv) Diazepam
 - (v) Phenytoin.
- (d) Discuss SAR of parasympathomimetic agents.
- (e) Classify general anaesthetics with suitable examples.
- (f) Write a note on NSAIDS.
- (g) Outline synthesis of Phenytoin and Mefenamic acid.
- (h) Explain biosynthesis catecholamines.
- (i) Discuss cholinesterase inhibitors as antialzheimer's agents.

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AM—40—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

PHYSICAL PHARMACEUTICS

Paper-II

(BP-403T)

(Saturday, 21-12-2024)

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. Solve *all* the questions : 10×2=20
- (a) Define Rheology. Give any *two* applications.
 - (b) What is gold number ?
 - (c) Mention the effect of mixing different types of colloids.
 - (d) State Stokes law.
 - (e) Define angle of repose. Write its significance.
 - (f) Enlist different methods of determination of order of reaction.
 - (g) What are Bulges and Spurs ?
 - (h) Enlist *four* methods of determination of order of reaction.
 - (i) Define physical and chemical degradation with examples.
 - (j) Differentiate between creaming and cracking.

P.T.O.

2. Solve the following (any *two*) : 2×10=20
- (a) Discuss the electrical properties and kinetic properties of colloids.
 - (b) Define Thixotropy. Explain different methods for its determination and give its application in pharmacy.
 - (c) Explain chemical degradation of pharmaceutical compounds due to oxidation. Explain its preventive measures.
3. Solve the following (any *seven*) : 7×5=35
- (a) Explain the factors influencing the rate of reaction.
 - (b) What are derived properties of powders ? Explain any *two*.
 - (c) Write a note on identification test of emulsion.
 - (d) Explain the Newtonian system of flow with example.
 - (e) With the help of a neat labeled diagram explain methods for purification of colloids.
 - (f) Define Viscosity. Classify different viscometers with example.
 - (g) Explain the formulation of emulsion by HLB method.
 - (h) Define Arrhenius plot and give its significance in calculation of shelf life.
 - (i) What is specific surface area ? How is it measured by air permeability method ?

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AM—44—2024

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2024

PHARMACOLOGY

Paper-I

(Tuesday, 24-12-2024) (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 the following :

10×2=20

(a) Write the sources of drugs with examples.

(b) Write MOA of disulfiram.

(c) Define the terms pharmacovigilance and idiosyncrasy.

(d) What is drug dependence ? Give its types. *

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

P.T.O.

- (f) What are analgesics ? Write its examples.
- (g) Why adrenaline is an emergency kit ?
- (h) What are synergism and antagonism ?
- (i) Define the terms inverse agonist and spare receptors.
- (j) What are Nootropics drugs ?

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

- (a) Define drug metabolism. Write phases of drug metabolism and add a note on enzyme induction and enzyme inhibition.
- (b) Define and classify receptors. Discuss the pathways of drug receptor action.
- (c) Classify Sympathomimetic agents and write pharmacology of Adrenaline.

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

- (a) Discuss various phases of clinical trials.
- (b) Define and classify antidepressant agents. Write pharmacology of Imipramine.
- (c) Classify sedative and hypnotic. Write pharmacology of Benzodiazepines.

- (d) Write mechanism of drug absorption.
- (e) Write the pharmacology of Atropine.
- (f) Write the pharmacotherapy of Parkinson disease.
- (g) Classify antiepileptic agents. Write MOA and therapeutic uses of phenytoin.
- (h) Define drug interaction and classify pharmacokinetic drug interactions.
- (i) Write the various steps in Neurohumoral transmission in ANS.

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AM—45—2024

FACULTY OF PHARMACEUTICAL SCIENCE AND TECENOLGY

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

NOVEMBER/DECEMBER, 2024

PHARMACOGNOSY AND PHYTOCHEMISTRY

Paper-I

(Thursday, 26-12-2024) **(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) Illustrate your answers with sketches wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Answer to the point only.

1. Answer *all* of the following :

10×2=20

(i) Define crude drug. Enlist types of crude drug.

(ii) Define polyploidy and mutation.

(iii) Define microscope. Classify them.

(iv) Who is introduced the term 'Pharmacognosy' ?

(v) Enlist methods of evaluation of crude drug.

P.T.O.

- (vi) Who is first 'Pharmacist' ?
- (vii) What is Goldbeaters' skin test ?
- (viii) What is Edible vaccines ?
- (ix) Who is introduced term 'Siddha' traditional system of medicine.
- (x) Enlist any *four* examples of leaf constants.

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

- (i) What is pharmacognosy ? Discuss history and scope of pharmacognosy.
- (ii) What is Tissue culture ? Discuss history and application of plant tissue culture in pharmacognosy.
- (iii) Define evaluation of crude drug. Discuss microscopical and chemical evaluation of crude drug with examples.

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

- (i) Describe various factors influencing cultivation of medicinal plants.
- (ii) Discuss about Ayurveda and Siddha traditional system of medicine.
- (iii) Define and classify Alkaloids. Write properties and identification tests of Alkaloids.
- (iv) Define adulteration of crude drug. Discuss different methods of adulteration.

- (v) Define and classify glycosides. Write properties and identification tests of glycosides.
- (vi) Write biological source, chemical constituents and uses of Bees wax and casein.
- (vii) Write biological source, chemical constituents and uses of cotton and honey.
- (viii) Write a note on plant hormones and their applications.
- (ix) Write a short note on Tannins and Resins.