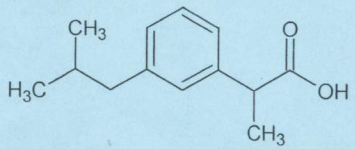
xviii	Name the NSAID  a) Indomethacin b) Ibuprofen c)Diclofenac d) Phenacetin	1	CO3	K1	PO2
xix	Ephedrine is a) Direct Acting b) Indirect acting c) Mixed Acting d) None of the Above	1	CO4	K1	PO1
xx	Replacement of Catechol by Resorcinol increase _____ selectivity? a) α b) β c) α_1 d) β_2	1	CO4	K1	PO2

Section B (Answer any TWO out of THREE) – 20 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Draw the structures of following Compounds a) Phenylephrine b) Salbutamol c) Tolazoline d) Propranolol e) Carbachol f) Neostigmine g) ipratropium bromide h) Dicyclomine hydrochloride i) Phenylephrine j) Scopolamine hydrobromide	10	CO1	K1	PO10
3	Define and classify sympathomimetic drug with structural example? Discuss the biosynthesis of Adrenaline along with the distribution of adrenergic receptor?	10	CO2	K1, K2	PO10
4	Write down the Synthesis of the following Drugs: a) Phenylephrine b) Neostigmine c) Procyclidine hydrochloride d) Ipratropium bromide?	10	CO4	K1, K2	PO10

Section C (Answer any SEVEN out of NINE) – 35Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Write a note on the Chemical Structure, Source, MOA, Uses & Side effect of Morphine.	5	CO4	K3, K4	PO1
6	Write a short note on SAR of beta blockers.	5	CO3	K3, K4	PO10

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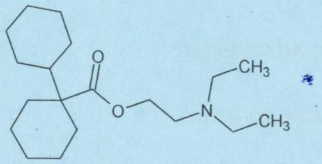
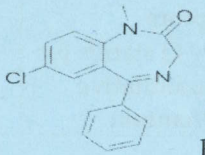
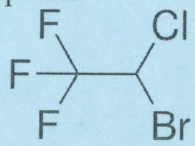
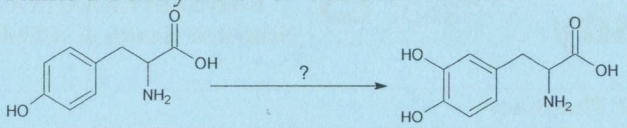
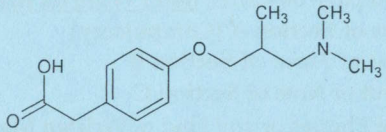
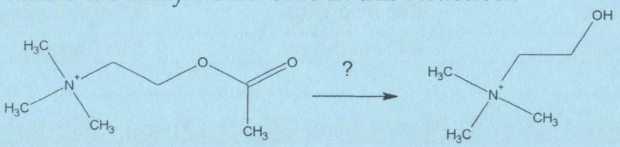
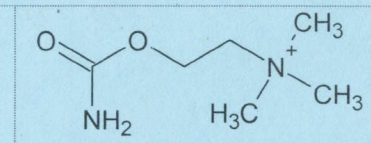
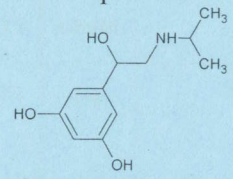
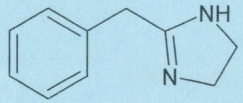
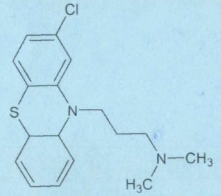
END SEM EXAMINATION
School of Health & Allied Science

Program	Bachelor of Pharmacy		
Subject Name	Medicinal Chemistry I	Semester	IV
		Year	June 2024
Time: 3 Hour Max. Marks : 75	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any *Two* out of *Three* of Section B • Answer Any *Seven* out of *Nine* of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Name the API  a) Tropicamide b) Cyclopentolate c) Clidinium bromide d) Dicyclomine	1	CO3	K1	PO1
ii	Name the compound?  a) Diazepam b) Clonazepam c) Lorazepam d) Alprazolem	1	CO3	K1	PO2
iii	Name the compound  a) Enflurane b) halothane c) Isoflurane d) None of above	1	CO4	K1	PO2

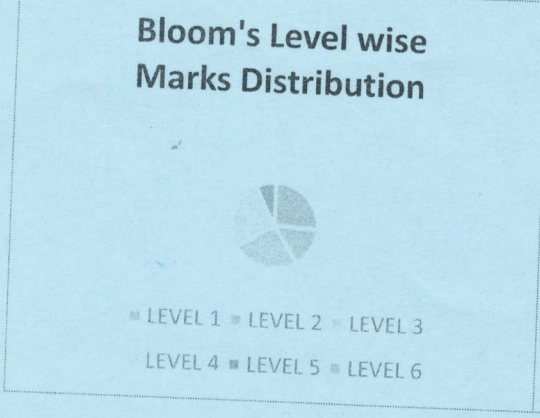
iv	Name the Enzyme involve in this Reaction.?  a) Decarboxylase b) Transferase c) Tyrosine Hydroxylase d) None of the above	1	CO3	K1	PO2
v	Name the Beta Blocker?  a) Propranolol b) Metoprolol c)Atenolol d) none of the above	1	CO4	K1	PO2
vi	Name the Enzyme Involve in this Reaction?  a) Transferase b) Hydroxylase c) Esterase d) none of the above	1	CO4	K1	PO2
vii	Methyldopa lowers BP by a) Inhibiting dopa decarboxylase in adrenergic nerve endings b) Generating α-methyl noradrenaline in brain which reduces sympathetic tone c) Generating α-methyl noradrenaline which acts as a false transmitter in peripheral adrenergic nerve endings d) Activating vascular dopamine receptors	1	CO3	K1	PO2
viii	In QSAR, study of medicinal chemistry Q stands for a) Qualitative b) Quantitative c) Both d) Quantum	1	CO4	K1	PO1
ix	The non-polar compound dispersed a) By forming hydrogen bonding b) By interacting with lipid c) By forming drug receptor complex d) by forming hydrophilic bond	1	CO3	K1	PO2
x	Bioisoterism is the process of a) Replacement similar group b) Replacement similar valence group c)Replacement similar mass no. group d)Addition of group having different mass no	1	CO3	K1	PO2
xi	Name the compound  a) Carbachol b) Neostigmine c) Acetyl Choline d) MethylCholine	1	CO4	K1	PO1
xii	Chlorpromazine hydrochloride is an example of a) Sedative & Hypnotic b) Anxiolytic c) Antipsychotics d) None of the above	1	CO4	K1	PO1
xiii	Which of the following reaction is not Phase-I metabolic transformation? a) Reduction of ketone b) conjugation of alcohol c) Mono amine oxidase d) None of the Above	1	CO3	K1	P02
xiv	Name the Compound?  a) Clonidine b) Salbutamol c) Terbutaline d) Albuterol	1	CO3	K1	PO1
xv	Name the Compound?  a) Tolazoline b) Atropine c) Prazosin d) Ephedrine	1	CO3	K1	PO2
xvi	Name the compound  a) Phenothiazine b) Chlorpromazine c) Triflupromazine d) Thioridazine	1	CO2	K1	PO1
xvii	What does hydrolysis of Acetyl salicylic gives? a) Salicylic acid b) salicylic acid & acetic acid c) Succinic acid d) None of the above	1	CO2	K1	PO1

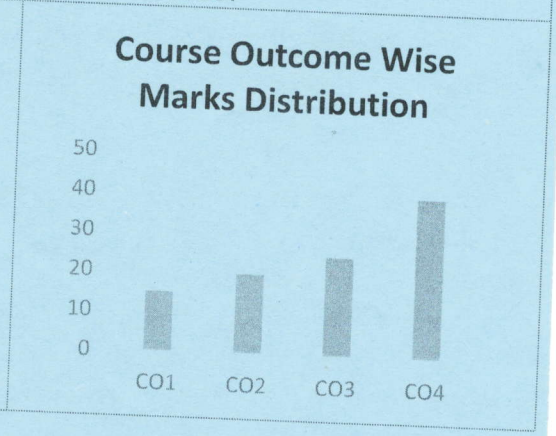
7	Synthesis & uses of Tolazoline & Propranolol.	5	CO3	K3, K4	PO9
8	Draw the structure of (a) Methohexital sodium (b) Methadone HCl (c) Ibuprofen (d) Mefenamic acid (e) Chlorpromazine hydrochloride?	5	CO3	K3, K4	PO10
9	Write a short note on SAR of Sympathomimetic Drug.	5	CO4	K4, K5	PO2
10	Write a note on Phase I and Phase II reaction?	5	CO2, CO1	K3, K4	PO10
11	Write down the Synthesis and uses of Salbutamol & Carbachol?	5	CO2	K3, K4	PO9
12	Draw the structure of (a)Phenytoin (b) carbamazepine(c)Ketamine HCl (d) Fentanyl citrate (e)Halothane?	5	CO4	K1	PO2
13	Write a note on the Chemical Structure, Source, MOA, Uses & Side effect of Atropine sulphate?	5	CO4	K3, K5	PO10

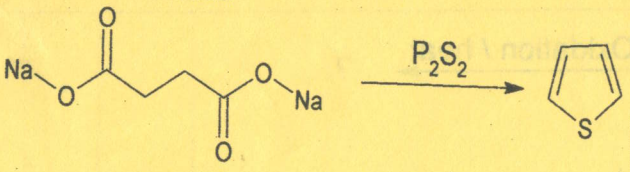
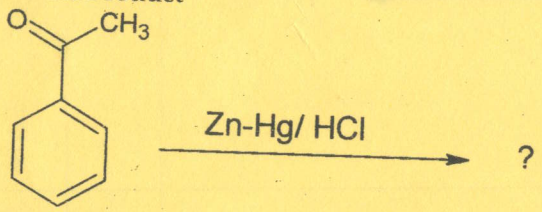
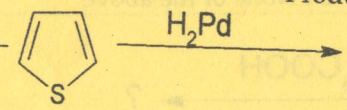
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand the chemistry of drugs with respect to their pharmacological activity
	CO2	Understand the drug metabolic pathways, adverse effect and therapeutic value of drugs
	CO3	Know the Structural Activity Relationship (SAR) of different class of drugs
	CO4	Write the chemical synthesis of some drugs

GRAPHICAL REPRESENTATION





xviii	Name the Reaction  (a)Diels-Alder Reaction (b) Gattermann-Koch Reaction (c) Paal-Knorr Synthesis (d) None of the Reaction	1	CO 3	K1	PO 1
xix	Name the Product  (a) Benzophenone (b) Ethyl Benzene (c) Acetyl Benzene (d) Phenol	1	CO 3	K1	PO 2
xx	Name Both the Product ?  (a) n-propane & Tetrahydrofuran (b) n-butane & Tetrahydrothiophene (c) n-butane & Tetrahydrofuran (d) None of the above	1	CO 4	K1	PO 2

Section B (Answer any TWO out of THREE) – 20 Marks
(Each question 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Draw the Optical isomers of Lactic acid & tartaric acid and Conformers of Cyclohexane & Butane	10	CO 2	K1, K2	PO 10
3	Explain the following Name reaction: (a) Clemmensen reduction, (b) Birch Reduction, (c) Wolff Kishner reduction. (d) Oppenauer-oxidation (e) Dakin reaction.	10	CO 4	K1, K2	PO 10

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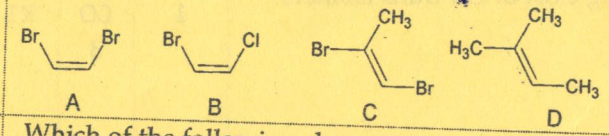
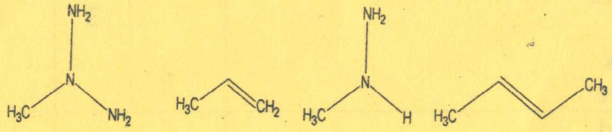
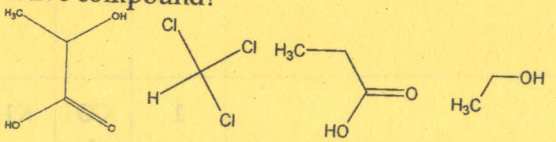
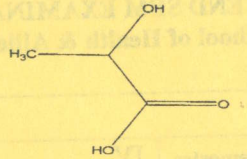
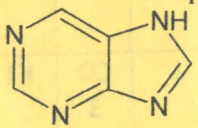
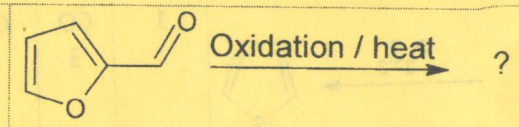
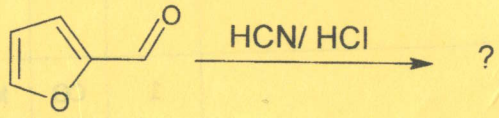
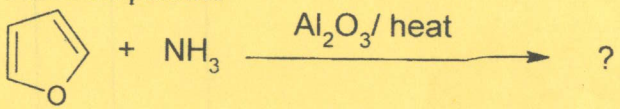
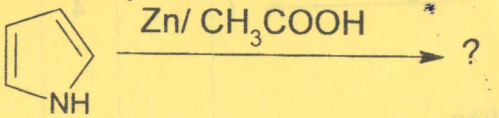
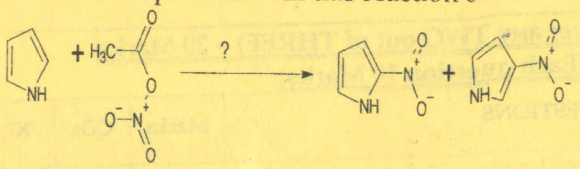
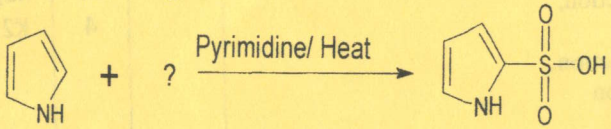
END SEM EXAMINATION
School of Health & Allied Science

Program	Bachelor of Pharmacy		
Subject Name	Pharmaceutical Organic Chemistry-III	Semester	IV
		Year	June 2024
Time: 3 Hour Max. Marks: 75	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any *Two* out of *Three* of Section B • Answer Any *Seven* out of *Nine* of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with a Co-Student will come under Unfair Means and will result in the Cancellation of the Papers.		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Which of the following compounds will not show geometrical isomerism?  A B C D	1	CO 3	K1	PO 1
ii	Which of the following shows geometrical isomerism?  A B C D	1	CO 3	K1	PO 1
iii	Geometrical Isomerism is Shown by A) Lactic acid B) Maleic Acid C) 1-Butene D) 1,1-Dichloroethylene	1	CO 3	K1	PO 2
iv	Which of the following compounds is an optically active compound?  A B C D	1	CO 4	K1	PO 2

v	How many Optical isomers are possible for this Structure?  A) 2 B) 4 C) 6 D) 8	1	CO 3	K1	PO 2
vi	Optical Isomers that are not mirror images are called A). Diastereomers B) Enantiomers C) Metamers D) Meso	1	CO 3	K1	PO 1
vii	2-Butanol is Optically Active because it contains: A) an asymmetric carbon, B) a plane of Symmetry C) Hydroxyl group D) Centre of Symmetry	1	CO 3	K1	PO 2
viii	Meso-Tartaric acid is A) sometimes, optically active B) Always optically active C) sometimes optically inactive D) Always optically inactive	1	CO 4	K1	PO 2
ix	Which of the following exist in Cis-trans Isomers? A) 1-butene B) 2- 2-butene C) Cyclopropane D) Acetone	1	CO 3	K1	PO 2
x	PPL is Affected by A) Identical molecules B) Chiral Molecules C) Achiral Molecules C) None of the Above	1	CO 3	K1	PO 1
xi	Name the Compound  A) Quinoline B) Isoquinoline C) Purine D) None of the above	1	CO 3	K1	PO 2
xii	Name the Product	1	CO 4	K1	PO 2

	 A) Furan B) Furfuroic acid C) Furfural D) None the above				
xiii	Name the Product  A) Furan B) Furfuroic acid C) Furfural D) None the above	1	CO 3	K1	PO 2
xiv	Name the product  A) Nitrofuran B) Pyrrole C) Amino Furan D) None of the above	1	CO 3	K1	PO 1
xv	Name the product  A) Pyrrolidine B) Maleinimide C) 2,5-Dihydro pyrrole D) Furan	1	CO 3	K1	PO 2
xvi	At what temperature will this reaction occur?  A) 5 B) 10 C) 15 D) 20	1	CO 4	K1	PO 2
xvii	Name the Reagent Used in this Reaction.  A) SO_3 B) H_2SO_4+ HNO_3 C) Conc H_2SO_4 D) None of the above	1	CO 3	K1	PO 2

4	What happens when: a) n-butane is treated with sulphur at a higher temperature b) furan reacts with Acetyl nitrate in the presence of acetic anhydride c) Pyrrole is Treated with H2/P d) Acylation of thiophene e) Thiophene is Reduced	10	CO 2	K1, K2	PO 9

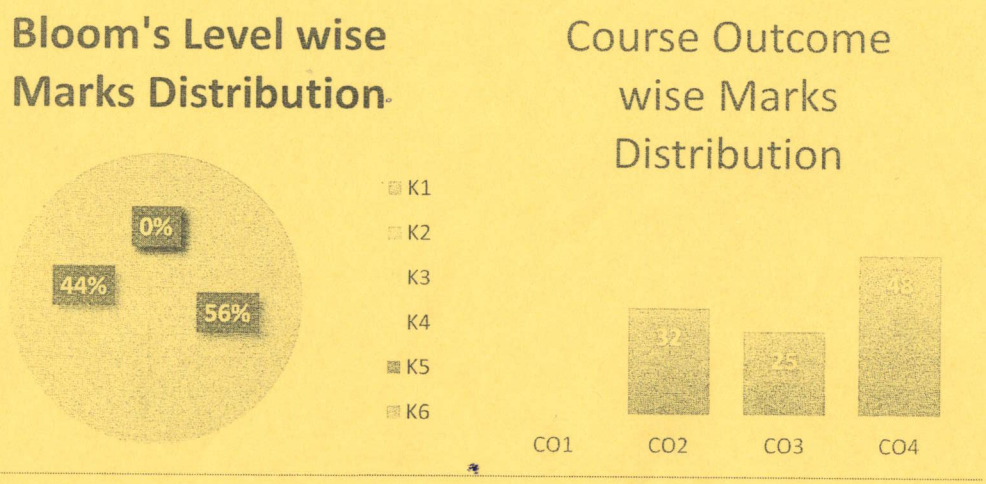
Section C (Answer any SEVEN out of NINE) – 35Marks
(Each question 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Which of the following compounds is Chiral? Labels all Chiral centres with an asterisk mark a) 2,4-Dimethyl heptane b) 5-ethyl-3,3-dimethyl heptane c) 2-chloropentane d) 3-methyl-1-pentene e) 3,2 diethyl-1-methyl hexanes	5	CO 4	K1, K2	PO 1
6	Write a note on E & Z Configuration. Also, Assign E or Z to the following structure.	5	CO 3	K1, K2	PO 10
7	Explain the stability of cis-2-methyl-3-hexene or trans-2-methyl-3-hexene? Explain with structure.	5	CO 3	K1, K2	PO 9
8	Explain the method of determination of the configuration of geometrical isomerism with an example	5	CO 3	K1, K2	PO 10
9	Give the Resonating structure of Furan & explain why 2-substitution in Furan is favoured	5	CO 4	K1, K2	PO 2
10	Pyrrole, Furan & thiophene still contain no benzene ring. They are classified as aromatic compounds.	5	CO 2	K1, K2	PO 10
11	Medicinal uses of Furan, Thiophene and Pyrrole	5	CO 2	K1, K2	PO 9
12	Why pyridine is more basic than pyrrole	5	CO 4	K1, K2	PO 2
13	Why pyridine undergoes ESR at 3-position	5	CO 4	K1, K2	PO 10

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Elucidate the structure, name and type of isomerism of the organic compound.
	CO2	Understand the reaction, name the reaction and the orientation of reactions.
	CO3	Account for reactivity/stability of compounds,
	CO4	Identify/confirm the identification of organic compounds.

GRAPHICAL REPRESENTATION

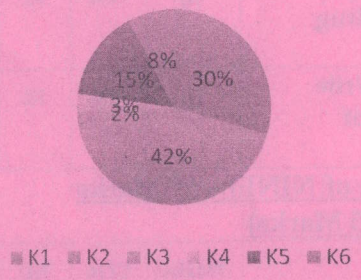


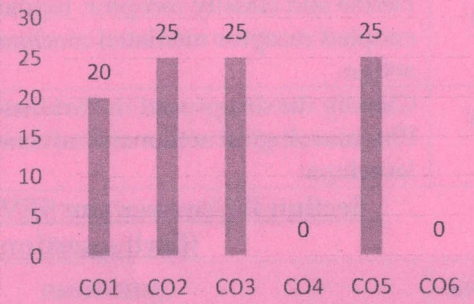
7	Describe the antiepileptic drugs with example, write the mechanism of action phenytoin.	5	CO3	K1,5	PO2
8	Describe any five factors modifying the action of drugs.	5	CO5	K2,5	PO2
9	Write short notes on SSRIs.	5	CO1	K2,6	PO9
10	Write the differences in pharmacological actions of Anticholinesterase and anticholinergic drugs.	5	CO3	K2,5	PO9
11	Describe the pharmacology of skeletal muscle relaxants	5	CO2	K1,5	PO9
12	What are the factors affecting the absorption of drug.	5	CO1	K1,6	PO10
13	Write the different stages of anaesthesia	5	CO2	K2	PO10

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Explain the general principles of pharmacology
	CO2	Describe the pharmacokinetic, pharmacodynamic, adverse drug reactions and drug interactions
	CO3	Explain drug discovery and clinical evaluation of new drugs
	CO4	Explain the drugs acting on the peripheral nervous system
	CO5	To describe the drugs acting on the central nervous system
	CO6	Strengthen the basic knowledge in the field of pharmacology and to impart recent advances in the drugs used for the treatment of various diseases

GRAFICAL REPRESENTATION





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ARKA JAIN University
Jharkhand
NAAC GRADE A ACCREDITED UNIVERSITY

END SEM EXAMINATION
School of Health & Allied Science

Program	Bachelor of Pharmacy		
Subject Name	Pharmacology-I	Semester	IV
		Year	June 2024

Time: 3 Hour
Max. Marks : 75

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any *Two* out of *Three* of Section B**
- **Answer Any *Seven* out of *Nine* of Section C**
- **Possession of Mobile Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers**.

Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A (Each question Carry 01 Mark from Q1-i to xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	The main mechanism of most drugs absorption in GI tract is: a) Active transport (carrier-mediated diffusion) b) Filtration (aqueous diffusion) c) Endocytosis and exocytosis d) Passive diffusion (lipid diffusion)	1	CO1	K1 K3	PO2
ii	Pick out the parenteral route of medicinal agent administration: a) Rectal b) Oral c) Sublingual d) Inhalation	1	CO1	K2	PO2
iii	Conjugation of a drug includes the following EXCEPT: a) Glucoronidation b) Sulfate formation c) Hydrolysis d) Methylation	1	CO1	K1	PO2
iv	What is characteristic of the oral route? a) Fast onset of effect b) Absorption depends on GI tract secretion and motor function c) A drug reaches the blood passing the liver d) The sterilization of medicinal forms is obligatory	1	CO1	K1 K3	PO2
v	Tick the feature of the sublingual route: a) Pretty fast absorption b) A drug is exposed to gastric secretion c) A drug is exposed more prominent liver	1	CO1	K2	PO2

	metabolism d) A drug can be administrated in a variety of doses				
vi	What does "affinity" mean? a) A measure of how tightly a drug binds to plasma proteins b) A measure of how tightly a drug binds to a receptor c) A measure of inhibiting potency of a drug d) A measure of bioavailability of a drug	1	CO1	K1	PO9
vii	Target proteins which a drug molecule binds are: a) Only receptors b) Only ion channels c) Only carriers d) All of the above	1	CO2	K2 K4	PO9
viii	If an agonist can produce maximal effects and has high efficacy it's called: a) Partial agonist b) Antagonist c) Agonist-antagonist d) Full agonist	1	CO1	K1	PO2
ix	An antagonist is a substance that: a) Binds to the receptors and initiates changes in cell function, producing maximal effect b) Binds to the receptors and initiates changes in cell function, producing submaximal effect c) Interacts with plasma proteins and doesn't produce any effect d) Binds to the receptors without directly altering their functions	1	CO3	K1	PO2
x	Irreversible interaction of an antagonist with a receptor is due to: a) Ionic bonds b) Hydrogen bonds c) Covalent bonds d) All of the above	1	CO2	K2 K4	PO10
xi	Tick the second messenger of G-protein-coupled (metabotropic) receptor: a) Adenylyl cyclase b) Sodium ions c) Phospholipase C d) cAMP	1	CO2	K2 K4	PO9
xii	Indicate the local anaesthetic agent, which has a shorter duration of action: a) Lidocaine b) Procaine c) Bupivacaine d) Ropivacaine	1	CO1	K1	PO2
xiii	Local anaesthetics are: a) Weak bases b) Weak acids c) Salts d) None of the above	1	CO1	K2 K4	PO2
xiv	Diazepam is used as a muscle relaxant for: a) Deep intra-abdominal operation b) Tracheal intubation c) Tetanus d) Diagnosis of myasthenia gravis	1	CO2	K1	PO2
xv	In alcoholism which of this drug is used a) Disulphiram b) Methanol c) Barbituric acid d) None of these	1	CO1	K2	PO2
xvi	In parkinsonism, there is deficiency of ____ a) Dopamine b) Serotonin c) Norepinephrine d) All the above	1	CO3	K2	PO9
xvii	Tricyclic antidepressants act by_____ a) Blocking the reuptake of norepinephrine b) Inhibiting the enzyme MAO c) Receptor mechanism d) None of the above	1	CO3	K2	PO10
xviii	Most potent CNS stimulant among xanthine bases is_____ a) Theophylline b) Dopamine c) Caffeine d) All of the above	1	CO3	K2 K3	PO9
xix	Which of these general anaesthetics is toxic to liver a) Chloroform b) Cyclopropane c) Ether d) Halothane	1	CO3	K1	PO10
xx	Identify non barbiturates a) Diazepam b) Chloral hydrate c) Paraldehyde d) All of the above	1	CO2	K2	PO2

Section B (Answer any TWO out of THREE) – 20 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Classify sedatives and hypnotics, Write MOA, adverse effect and uses of benzodiazepines.	10	CO3	K1	PO9
3	Define and classify receptor. Explain the G-protein coupled receptor mediated mechanism of drug action.	10	CO5	K2	PO9
4	Classify the drugs used in Parkinsonism. Write Pharmacological action and adverse effect of levodopa	10	CO5	K2	PO10

Section B (Answer any SEVEN out of NINE) – 35 Marks
(Each question Carry 5 Marks)

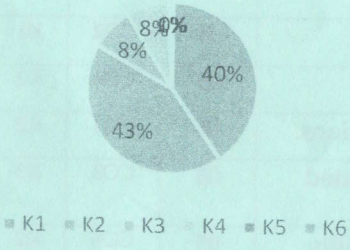
Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Describe the different routes of drug administration with their advantages and dis-advantages	5	CO2	K1	PO2
6	Describe the pharmacology of local anaesthetics	5	CO2	K2	PO10

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

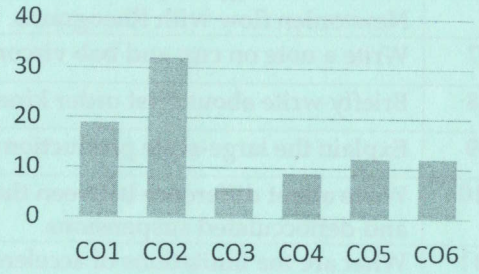
Course Outcomes	CO1	Understand the concept of colloidal dispersion systems.
	CO2	Illustrate fundamentals and pharmaceutical applications of rheology and deformation of solids.
	CO3	Understand the concept of formulation and stabilization of suspension
	CO4	Understand the concept of formulation and stabilization of emulsions
	CO5	Have basic understanding of micromeritics and its application in pharmacy.
	CO6	Analyze the reaction kinetics and chemical stability of various drug products

GRAPHICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Course Outcome Wise Marks Distribution



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END SEM EXAMINATION
School of Health & Allied Science

Program	**Bachelor of Pharmacy**		
Subject Name	**Physical Pharmaceutics-II**	**Semester**	**IV**
		Year	**June 2024**
Time: 3 Hour Max. Marks : 75	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Two out of Three of Section B • Answer Any Seven out of Nine of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Meansand will Result in the Cancellation of the Papers.		
Knowledge Level (KL)	**K1 : Remembering**	**K3 : Applying**	**K5 : Evaluating**
	K2 : Understanding	**K4 : Analysing**	**K6 : Creating**

Section A (Each question Carry 01 Mark from Q1-i to xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	In antithixotrophy, the down curve is frequently positioned to (w.r.t up curve) a) Left b) Origin c)Right d) Superimposible	1	CO2	K1 K2	PO1, PO2
ii	Silica gel is an example for the type of gel a) Dilatant b) Elastic c) Rigid d) Thixotropic	1	CO2	K1 K2	PO1, PO2
iii	Dilatant flow is characterized as reverse phenomenon of a) Newtonian flow b) Plastic flow c) Pseudoplastic flow d) Rheopexy	1	CO2	K1 K2	PO1, PO2
iv	Kinematic viscosity is independent a) Density b) Gravity c)Source of light d) temperature	1	CO2	K1	PO1,
v	Fluidity denoted by a) η b) θ c) Φ d) ρ	1	CO2	K1 K2	PO1, PO2
vi	Reciprocal of viscosity known as a) Fluidity b) Mobility c) Reduced viscosity d) Resistance	1	CO2	K1 K2	PO1, PO2
vii	The units of viscosity are a) Kg. m2/s b) Kg. s/m2 c) N. m/s2 d) N.s/m2	1	CO2	K1 K2	PO1, PO2

viii	Flocculated suspensions exhibit the flow of a ty a) Dilatant b) Newtonian c)Plastic d) Pseudoplastic	1	CO3	K1 K2	PO1, PO2
ix	Aerosol is the reverse of a) Emulsion b) Liquid foam c)Smoke d) Solid foam	1	CO1	K1 K2	PO1, PO2
x	Angle of repose for excellent flow powder is- a) 31-35 b) 25-30 c) 36-40 d) 56-65	1	CO5	K1 K2	PO1, PO2
xi	The w/o type emulsion remains stable when diluted with- a) oil b) water c) tween d) all	1	CO4	K1 K2	PO1, PO2
xii	Dispersion of acacia in water gives the colloid of- a) Neutral b) Positive c) Negative d) Assotiation	1	CO1	K1 K2	PO1, PO2
xiii	In general, reaction rate constants in neutral PH are comparatively a) Equal b) Higher c) Lower d) Zero	1	CO6	K1 K2	PO1, PO2
xiv	Andreasen apparatus consists of a) Balance b) Electrode c) Hydrometer d) Pipette	1	CO5	K1 K2	PO1, PO2
xv	An 'emulsion with in emulsion' is designated as a) o/w/w b) w/o/o c) w/o/o/w d) w/o/w	1	CO4	K1 K5	PO1, PO2
xvi	On commercial scale, emulsions are prepared by a) Centrifugation b) Dialysis c) Freezing d) Homogenization	1	CO4	K1 K2	PO1, PO2
xvii	Thixotropic type of behaviour is shown by the gel a) Bentonite b) Pectin c) Silica d) Starch	1	CO1	K1 K2	PO1, PO2
xviii	The half-life of a first order reaction is 4 years. What is its shelf life a) 0.02 b) 0.03 c) 0.17 d) 0.61	1	CO6	K5	PO1, PO2
xix	The semipermeable membrane used in haemodialysis is- a) Cellophane b) Cellulose acetate c) Polythene d) Polyvinyl acetate	1	CO1	K2	PO1, PO2
xx	Micro emulsion are- a) Transparent b) Hazy c) Cloudy d) None	1	CO4	K2k 4	PO1, PO2

Section B (Answer any TWO out of THREE) – 20 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Write a brief note on Various Properties of colloids.	10	CO1	K1	PO1, PO2
3	Write a detailed note on Single point Viscometers.	10	CO2	K2	PO1, PO2
4	Write the principle and method invoved in the determination of particle size in a powder using Andereasen apparatus	10	CO5	K4	PO2

Section C (Answer any SEVEN out of NINE) – 35 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Define colloidal dispersion. Explain about classification of colloidal dispersions with examples.	05	CO1	K1,k 3	PO1, PO2
6	Define Rheology. Explain in detail about non-Newtonian flow with Rheograms.	05	CO2	K1,k 2	PO1,
7	Write a note on cup and bob viscometer.	05	CO2	K1	PO1
8	Briefly write about First order kinetics.	05	CO6	K2	PO2
9	Explain the large-scale production of emulsions.	05	CO4	K2	PO1,
10	Write about difference between the Flocculated and deflocculated suspensions.	05	CO3	K3	PO1
11	What are the limitations of accelerated stability studies.	05	CO6	K2	PO1, PO2
12	Write short notes on Hackel equation.	05	CO2	K1	PO2
13	Write short notes on Angle of repose.	05	CO5	K2	PO1

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END SEM EXAMINATION
School of Health & Allied Science

Program	Bachelor of Pharmacy		
Subject Name	Pharmacognosy and Phytochemistry I	Semester	IV
		Year	June 2024

Time: 3 Hour
Max. Marks : 75

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any *Two* out of *Three* of Section B**
- **Answer Any *Seven* out of *Nine* of Section C**
- **Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.**

Knowledge Level (KL)			
	K1 : Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A (Each question Carry 01 Mark from Q1-i to xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	The term 'pharmacognosy' is derived from which language? a. Latin c. French b. Greek d. German	1	CO1	K1	PO2
ii	Which of the following glycosides is commonly found in digitalis plants and used in heart medications? a. Amygdalin c. Saponin b. Salicin d. Digoxin	1	CO2	K1	PO1
iii	Which class of glycosides is responsible for the bitterness of tonic water and the flavor of citrus fruits? a. Flavonoid glycosides b. Anthraquinone glycosides c. Saponins d. Terpenoid glycosides	1	CO2	K2	PO1
iv	Which hormone is commonly used to induce callus formation in plant tissue culture? a. Gibberellic acid (GA) c. Auxin b. Ethylene d. Cytokinin	1	CO2	K1	PO2
v	Which of the following statements about glycosides is correct?	1	CO2	K1	PO2

Section B (Answer any TWO out of THREE) – 20 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Briefly explain the factor influencing cultivation of medicinal plants.	10	CO1	K5	PO2
3	Give a descriptive note on classification of drugs.	10	CO2	K1	PO2
4	Give a descriptive note on Pharmacognosy, its history& scope.	10	CO1	K2	PO1

Section C (Answer any SEVEN out of NINE) – 35 Marks
(Each question Carry 5 Marks)

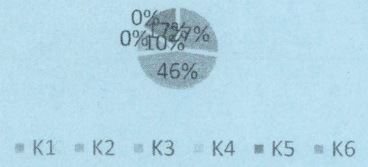
Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Define the term adulteration and mention its types.	5	CO1	K1	PO1
6	Classify different sources of drugs.	5	CO1	K2	PO1
7	Differentiate between organised and unorganised drugs.	5	CO1	K5	PO2
8	Write a short note on alphabetical classification system of drugs.	5	CO3	K2	PO2
9	Give the collection, cultivation and preparation of cotton.	5	CO1	K2	PO1
10	Define polyploidy and write a brief view on its type.	5	CO3	K1	PO1
11	Define plant tissue culture and give the applications of plant tissue culture in pharmacognosy.	5	CO3	K3	PO2
12	Write a short note on lycopodium spore method	5	CO3	K2	PO1
13	Write a short note on history of Ayurvedic medicine system.	5	CO1	K2	PO1

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

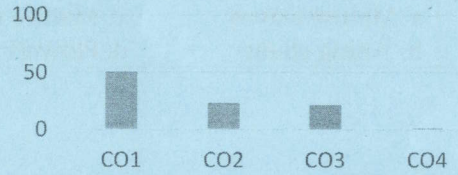
Course Outcomes	CO1	To know the techniques in the cultivation and production of crude drugs
	CO2	To know the crude drugs, their uses and chemical nature
	CO3	To know the evaluation techniques for the herbal drugs
	CO4	To carry out the microscopic and morphological evaluation of crude drugs

GRAPHICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



	a. Glycosides are exclusively found in plants and are absent in animals. b. Glycosides are composed of a sugar molecule bonded to a non-sugar moiety through an ester linkage. c. Glycosides are hydrolyzed by proteolytic enzymes in the digestive system. d. Glycosides play no role in pharmacology or medicine.				
vi	Drug which does not belong to leaves class a. Senna c. Eucalyptus b. Digitalis d. Turmeric	1	CO2	K3	PO1
vii	The breakdown of primary metabolites releases: a. Energy and building blocks for cellular structures. b. Toxic byproducts. c. Secondary metabolites. d. Allergens.	1	CO2	K2	PO1
viii	Stomatal number is typically higher on the _____ surface of leaves. a. Upper c. Both upper and lower b. Lower d. Depends on the plant species	1	CO2	K3	PO2
ix	Which system of medicine extensively utilizes pharmacognosy in its practice? a. Allopathic medicine c. Homeopathy b. Ayurveda d. Naturopathy	1	CO2	K2	PO2
x	Which of the following techniques can be used to induce mutations in medicinal plants? a. Genetic engineering c. Hybridization b. In vitro propagation d. Mutagenesis	1	CO2	K2	PO1
xi	What is a camera lucida primarily used for? a. Photography c. Viewing images b. Drawing d. Illumination	1	CO1	K2	PO1
xii	Who is credited with the discovery of plant tissue culture? a. Robert Hooke c. Haberlandt b. Friedrich Wöhler d. Gregor Mendel	1	CO1	K1	PO2
xiii	Which of the following best describes the role of hybridization in medicinal plant breeding? a. Introducing new genetic variability b. Reducing genetic variability c. Enhancing vulnerability to diseases d. Decreasing adaptability to diverse environments	1	CO1	K2	PO1
xiv	Which of the following is a consequence of polyploidy in medicinal plants? a. Reduced genetic diversity b. Decreased adaptability to environmental changes c. Increased vigor and size d. Decreased medicinal properties	1	CO1	K2	PO2
xv	Gignosco means to acquire a ------ of something a. knowledge c. training b. skill d. intelligence	1	CO1	K1	PO2
xvi	Crude drugs are arranged in the order of their first letter of name is called as a. Pharmacological classification b. Morphological classification c. Chemical classification d. Alphabetical classification	1	CO4	K3	PO1
xvii	------is also referred to as a therapeutic classification of drugs. a. Chemical classification b. Alphabetical classification c. Pharmacological classification d. Morphological classification	1	CO4	K3	PO2
xviii	Which secondary metabolite is commonly found in medicinal plants and is known for its antimicrobial properties? a. Flavonoids c. Terpenoids b. Alkaloids d. Phenolics	1	CO2	K5	PO2
xix	What is adulteration in the context of pharmacognosy? a. Intentional contamination of drugs with impurities b. Synthesis of drugs from natural sources c. Identification of medicinal plants d. Study of drug interaction.	1	CO2	K2	PO1
xx	Which of the following plant structures contains the highest concentration of auxin? a. Mature leaves c. Mature roots b. Young stems d. Flowers	1	CO2	K2	PO1