



End Term (Even) Semester Examination May-June 2025

Roll no.

Name of the Course and semester: B. Pharm IInd Semester

Name of the Paper: Pharmaceutical Organic Chemistry-I

Subject Code: BP-202T

Time: 3hour

Maximum Marks: 75

Note:

- (i) This question paper contains three sections
- (ii) All the sections are compulsory

Section-A

Multiple choice questions.

20x1= 20 Marks

Q.NO.	QUESTIONS	CO's
1.	What is the correct IUPAC name for tert-butyl alcohol? a) 1-Butanol b) 2-Methyl-2-propanol c) 2-Butanol d) 3-Butanol	CO 1
2.	Which type of isomerism is observed when compounds have the same molecular formula but different connectivity of atoms? a) Geometrical isomerism b) Optical isomerism c) Structural isomerism d) Conformational isomerism	
3.	Which of the following hybridization states is found in alkanes? a) sp b) sp ² c) sp ³ d) sp ³ d	
4.	Which of the following functional groups is present in aldehydes? a) -COOH b) -CHO c) -OH d) -COOR	



5.	According to Markownikoff's rule, in the addition of HBr to propene, the major product formed is: a) 1-Bromopropane b) 2-Bromopropane c) Propanol d) None of the above	CO 2
6.	What is the bond angle in an sp^3 hybridized carbon atom? a) 90° b) 109.5° c) 120° d) 180°	
7.	Which of the following is an example of a Diels-Alder reaction? a) Electrophilic addition b) Free radical addition c) Cycloaddition d) Hydrohalogenation	
8.	What is the rate-determining step in an $E1$ reaction? a) Formation of the carbocation b) Loss of a proton c) Attack of the nucleophile d) Rearrangement of the alkyl halide	
9.	The rate of an $SN2$ reaction depends on: a) Only the concentration of the alkyl halide b) Only the concentration of the nucleophile c) Both alkyl halide and nucleophile concentrations d) None of the above	
10.	Arrange the following alkyl halides in decreasing order of reactivity towards $SN1$ reaction: a) Methyl halide > Primary > Secondary > Tertiary b) Tertiary > Secondary > Primary > Methyl halide c) Primary > Tertiary > Secondary > Methyl halide d) Methyl halide > Secondary > Primary > Tertiary	CO 3
11.	Which of the following is used as an inhalational anesthetic? a) Trichloroethylene b) Chloroform c) Tetrachloromethane d) Dichloromethane	
12.	Iodoform is used as: a) Diuretic b) Antiseptic	



	c) Analgesic d) Sedative	
13.	The electromeric effect is: a) A temporary effect involving movement of sigma electrons b) A permanent dipole in the molecule c) A temporary movement of π -electrons towards an electrophile d) Movement of nucleophiles within a molecule	CO 4
14.	Benzoin condensation involves: a) Two ketones b) Aromatic aldehydes in presence of cyanide ion c) Aliphatic aldehydes only d) Acid catalysts only	
15.	Tollen's reagent gives a silver mirror test with: a) Acetone b) Formaldehyde c) Hexamine d) Acetic acid	
16.	Cinnamaldehyde is primarily obtained from: a) Turmeric b) Cinnamon bark c) Clove oil d) Nutmeg	
17.	Which of the following carboxylic acids has the highest acidity? a) Acetic acid b) Formic acid c) Propionic acid d) Butyric acid	CO 5
18.	The presence of an electron-withdrawing group near the carboxyl group _____ the acidity of a carboxylic acid. a) Decreases b) Increases c) Has no effect d) Converts it into an alcohol	
19.	Which of the following is a qualitative test for carboxylic acids? a) Tollen's reagent test b) Sodium bicarbonate test c) 2,4-DNP test d) Baeyer's test	
20.	What is the primary use of Acetylsalicylic acid (Aspirin)? a) Antacid b) Analgesic and anti-inflammatory agent	



	c) Antihypertensive d) Antibiotic	
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Section-B

Short Questions: Attempt any seven questions.

7x5 = 35 Marks

Q.NO.	QUESTIONS	COs
1	Write the IUPAC names of the following compounds: (i) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$ (ii) $\text{CH}_3\text{-CO-CH}_3$ (iii) $\text{CH}_3\text{-CH=CH}_2$ (iv) $\text{CH}_3\text{-CH}_2\text{-COOH}$ (v) C_6H_6	CO 1
2	Explain the classification of organic compounds based on the type of carbon skeleton and functional groups with suitable examples.	CO 2
3	Explain the mechanism of electrophilic addition reactions of alkenes, including Markownikoff's and Anti-Markownikoff's orientations with examples.	
4	Discuss factors affecting E1 and E2 reactions and E1 Versus E2.	
5	Differentiate between SN1 and SN2 mechanisms with suitable examples.	CO 3
6	Illustrate various methods to distinguish 1° , 2° and 3° alcohols with reactions.	CO 4
7	Discuss about the reaction mechanism of benzoin condensation in detail.	
8	How will you distinguish between aldehydes and ketones?	
9	Discuss the general methods of preparations and properties of aliphatic amines.	CO 5

Section-C

Long questions: Attempt any two questions.

2x10 = 20 Marks

Q.NO.	QUESTIONS	COs
1	Explain the different types of structural isomerism found in organic compounds with suitable examples.	CO 1
2	Describe the mechanism of aldol condensation. How does crossed aldol condensation differ, and what factors affect product selectivity in crossed aldol reactions?	CO 4
3	Explain the factors affecting the acidity of carboxylic acids. How do electron-withdrawing and electron-donating groups influence their acidity?	CO 5