

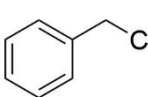
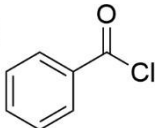
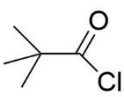
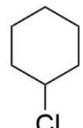
Name:									
Enrolment No:									
UPES End Semester Examination, December 2025 <table><tr><td>Course: Pharmaceutical Organic Chemistry II</td><td>Semester : III</td></tr><tr><td>Program: B. Pharm</td><td>Duration : 03 Hours</td></tr><tr><td>Course Code: BP301T</td><td>Max. Marks: 75</td></tr></table>				Course: Pharmaceutical Organic Chemistry II	Semester : III	Program: B. Pharm	Duration : 03 Hours	Course Code: BP301T	Max. Marks: 75
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SECTION A (20Qx1M=20 Marks)									
S. No.	Answer all the following MCQ / short questions	Marks (1 X 20) = 20	COs						
Q 1	“Phenol is weakly basic in nature”-True or False	1	CO1						
Q 2	Explain Bent bond?	1	CO1						
Q 3	Give one example of phenolic compound which is used as dental antiseptic agent.	1	CO3						
Q 4	Benzoyl alcohol can be synthesized in single step from benzoic acid by the addition of a) NaBH ₄ b) Pd/C c) LiAlH ₄ d) SnCl ₂ /HCl	1	CO1						
Q 5	Which of the following is an essential fatty acid? a) Palmitic acid b) Oleic acid c) Linoleic acid d) Stearic acid	1	CO1						
Q 6	Identify the method used to follow acid hydrolysis to form salicylic acid from phenol? a) Rimer-Tiemann reaction b) Kolbe reaction c) Shiff base reaction d) Sandmeyer reaction	1	CO3						
Q 7	Aniline reacts with concentrated H ₂ SO ₄ and HNO ₃ to produce _____ a) Nitrobenzene b) m-Nitroaniline c) p-Nitroaniline d) 2,4,6-Trinitroaniline	1	CO4						
Q 8	What causes "ring strain" in cycloalkanes?	1	CO1						
Q 9	Identify the incorrect statement regarding cycloalkanes a) These have sp ³ hybridized carbons b) These have tetrahedral bond angles c) Stability of the cycloalkanes varies directly with their respective size d) These undergo nucleophilic substitution reactions	1	CO4						
Q 10	Cycloalkanes are associated with the general formula called _____ a) C _n H _{2n+2} b) C _n H _{2(n+2)} c) C _n H _{2n+1-r} d) C _n H _{2(n+1-r)}	1	CO3						
Q 11	Which of the following gives effervescence with sodium bicarbonate? a) Phenol b) Benzyl alcohol	1	CO1						

	c) Benzoic acid	d) Aniline		
Q 12	How can nitrobenzene be prepared during the nitration of benzene?		1	CO1
Q 13	Benzoic acid undergoes decarboxylation when heated with soda lime to give: a) Benzene b) Toluene c) Benzaldehyde d) Phenol		1	CO4
Q 14	When toluene is treated with excess chlorine in the presence of sunlight, the major product is _____. a) Benzyl chloride b) Benzyl alcohol c) Benzene hexachloride d) Chlorobenzene		1	CO2
Q 15	The reaction of phenol with chloroform in the presence of NaOH produces _____. a) Chlorophenol b) Benzaldehyde c) Salicylaldehyde d) Benzyl chloride		1	CO2
Q 16	Cyclopropane is less stable compared to cyclohexane because a) It has high torsional strain and angle strain b) It has high steric hindrance c) It undergoes resonance destabilization d) It has a planar structure		1	CO3
Q 17	The rancidity of fats and oils is caused by _____. a) Hydrogenation b) Oxidation and hydrolysis c) High temperatures d) Dehydration		1	CO1
Q 18	What is the product when aniline is treated with acetic anhydride? a) Acetanilide b) Acetophenone c) N-Methyl aniline d) Benzamide		1	CO4
Q 19	Which of the following is not a suitable solvent for oils and fats? a) Benzene b) CCl ₄ c) CHCl ₃ d) Water		1	CO2
Q 20	_____ are added in food products to retard their spoilage by autooxidation. a) BHA b) BHT c) Both A and B d) Vitamin E		1	CO2

SECTION B (20 Marks)

(2Qx10M=20 Marks)

Attempt two questions out of three questions.

Q 1	Explain the synthesis and chemical reactivity of cyclopropane.	5+5 =10	CO3
Q 2	Write the structural formula for the product formed by Friedel-Craft alkylation or acylation of benzene with. Justify your answer. a)  b)  c)  d) 	2.5 X 4 = 10	CO1
Q 3	a) Why is benzoic acid more acidic in nature than acetic acid? b) How does electron donating group reduce the acidic property of aromatic acids?	(2+2+3+3)	CO4

	c) What method can be utilized to prepare aspirin drug from benzene? d) Illustrate the different identification tests of phenol.		
SECTION-C (35 Marks) (7Qx5M=35 Marks) Attempt seven questions out of nine questions			
Q 1	Briefly discuss the “Bayer Strain Theory” and mention its limitations.	5	CO2
Q 2	How is benzene diazonium chloride prepared from aromatic amine? Discuss the application of aryl diazonium salts.	3+2 = 5	CO2
Q 3	Define Reichert Meissl (RM) value. Discuss its significance and principle.	1+4 = 5	CO1
Q 4	Illustrate the mechanism of Friedel-craft alkylation with example.	5	CO2
Q 5	Explain the Haworth Synthesis to prepare for Anthracene.	5	CO4
Q 6	Write down the different chemical reactions of aromatic amines.	5	CO2
Q 7	Draw the structure and mention the pharmaceutical uses of Saccharin, BHC	2.5+2.5 =5	CO4
Q 8	How can salicylaldehyde and salicylic acid be prepared from phenol? Explain any one reaction mechanism.	2+3 = 5	CO4
Q 9	Define activating and deactivating groups. Give examples with reactions.	5	CO2
