

12.	Acrylic acid belongs to the class of: a) Saturated acids c) Dicarboxylic acids	b) Unsaturated acids d) Aromatic acids	CO1	K1
13.	Epoxides are also known as: a) Cyclic alcohols c) Aromatic ethers	b) Cyclic ethers d) Aldehydes	CO1	K1
14.	Acidic hydrolysis of esters produces _____ and _____. a) ketone & alcohol c) acid & alcohol	b) acid & aldehyde d) ketone & aldehyde	CO1	K1
15.	Which reagent is commonly used to convert alcohols into alkyl chlorides? a) NaOH b) PCl ₅	c) H ₂ SO ₄ d) KMnO ₄	CO1	K1
Q. No.	SECTION B		CO	KL
	Answer the following (15x1=15 Marks)			
	Fill in the blanks:			
16.	Cyanoacetic ester contains a _____ group along with an ester group.		CO2	K2
17.	Coupling reactions of diazonium salts produce _____ compounds.		CO2	K2
18.	Cleavage of alcohols using HX involves breaking of the _____ bond.		CO2	K2
19.	Electron withdrawing substituents _____ the acidity of carboxylic acids.		CO2	K2
20.	Kolbe's reaction produces _____ acid from sodium phenoxide.		CO2	K2
	Match the following:		CO	KL
21.	Friedel–Crafts reaction	a. Ethers	CO2	K2
22.	Williamson synthesis	b. CuCl	CO2	K2
23.	Adipic acid	c. Triphenyl methane dye	CO2	K2
24.	Sandmeyer reaction	d. acylation of benzene	CO2	K2
25.	Malachite green	e. Nylon	CO2	K2
	Answer in a line or two:		CO	KL
26.	What is meant by an active methylene group?		CO2	K2
27.	What is meant by tautomerism in nitroalkanes?		CO2	K2
28.	Define hydrogen bonding.		CO2	K2
29.	Name the product formed when phthalic acid is heated.		CO2	K2
30.	Why are phenols acidic in nature?		CO2	K2
Q. No.	SECTION C		CO	KL
	Answer any SIX of the following: (6 x 5 = 30 Marks)			
31.	Identify and give the chemical reaction to prepare the following (i) Anisole (ii) Dimethyl ether (iii) Diazoketone from diazomethane		CO3	K3
32.	Explain the mechanism of the HVZ reaction with a suitable substrate.		CO3	K3
33.	Give the steps for the following conversions: (2 x 2 ½ = 5) a) adipic acid from acetoacetic ester b) glutaric acid from diethyl malonate		CO3	K3

34.	Discuss the preparation and properties of succinic acid	CO3	K3
35.	Explain the action of heat on alpha, beta and gamma amino acids.	CO3	K3
36.	Classify the dyes based on their chemical structure?	CO3	K3
37.	Describe the stereospecific addition of HBr to maleic and fumaric acids.	CO3	K3
Q. No.	SECTION D Answer any FOUR of the following (4 x 5 = 20 marks)	CO	KL
38.	Analyze the acid-catalyzed mechanism of transesterification reaction.	CO4	K4
39.	Evaluate a pathway to obtain the following compounds starting from acetoacetic ester: (2 x 2 ½ = 5) i) Pentane dioic acid ii) Succinic acid	CO4	K4
40.	Outline the mechanism of the Reimer-Tiemann reaction.	CO4	K4
41.	Distinguish between primary, secondary and tertiary alcohols.	CO4	K4
42.	Validate the synthetic applications of Diethylmalonate with the formation of i) Barbituric acid ii) Adipic acid (2 x 2 ½ = 5)	CO4	K4
Q.No.	SECTION E Answer the following: (2x 10 = 20 Marks)	CO	KL
43.	a) Discuss the Hinsberg method for the separation of a mixture of amines. (4)	CO5	K5
	b) Nitrobenzene undergoes reduction in acidic medium to give aniline. Explain with mechanism (6)		
	OR		
	a) Discuss the preparation and properties of acid chlorides. (6)	CO5	K5
	b) Any three chemical properties of monocarboxylic acids. (4)		

44.	a) A colourless substance 'A' (C ₆ H ₇ N) is sparingly soluble in water and gives a water-soluble compound 'B' on treatment with mineral acid. On reacting with CHCl ₃ and alcoholic potash, 'A' produces an obnoxious smell due to compound 'C' formation. The reaction of 'A' with benzene sulphonyl chloride gives compound 'D', which is soluble in alkali. With NaNO ₂ and HCl, 'A' forms compound 'E', which reacts with phenol in an alkaline medium to give 'F' orange dye. Identify compounds 'A' to 'F'. (7)	CO5	K5
	b) Give any one method to prepare alizarin and its uses. (3)		
	OR		
	a) Discuss the preparation and chemical properties of cinnamic acid. (8)	CO5	K5
	b) Explain the conversion of acetic acid to Methyl bromide. (2)		
