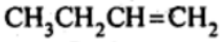
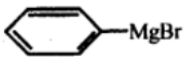
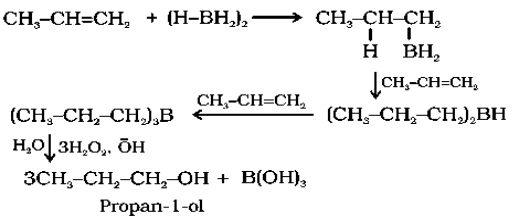
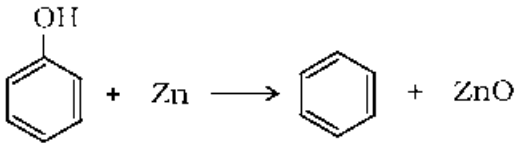
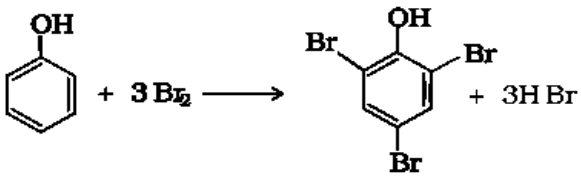
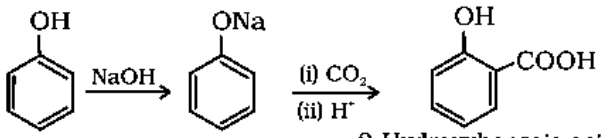
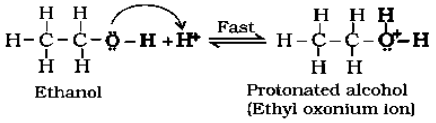
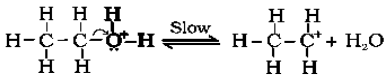
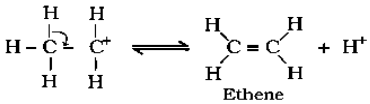
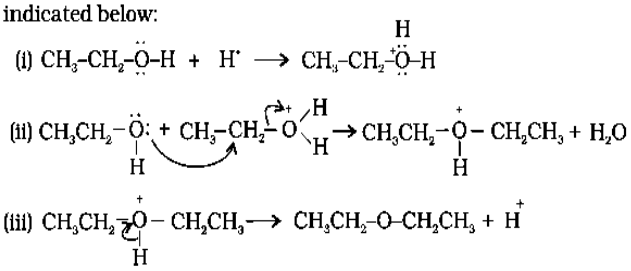
INDIAN SCHOOL AL WADI AL KABIR

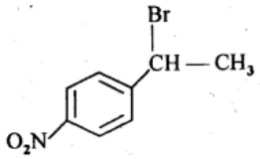
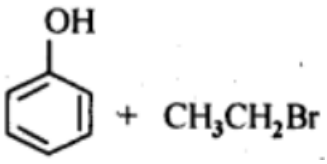
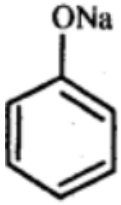
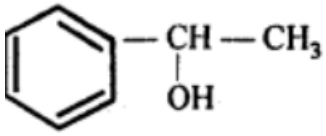
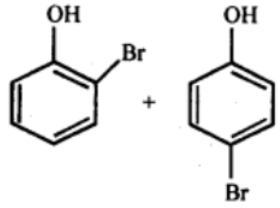
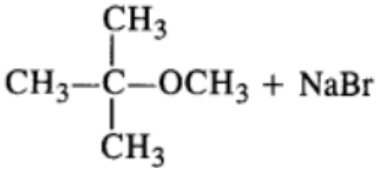
UNIT TEST (2024-25)

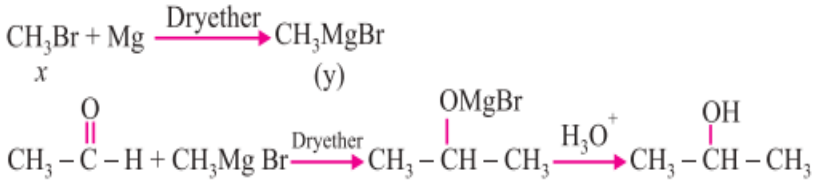
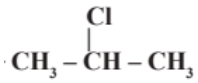
CLASS: XII **Sub: CHEMISTRY (043)** **MAX.MARKS: 30**

DATE: 04/06/2024 **Set - I** **TIME: 1 HOUR**

Q.NO.	ANSWER KEY		MARKS
1	C		1
2	D		1
3	C		1
4	A		1
5	B		1
6	A		1
7	C		1
8	A		1
9.	a. 	b. 	1+1
10.	a. *By hydroboration–oxidation*: Diborane $(BH_3)_2$ reacts with alkenes to give trialkyl boranes as addition product. This is oxidised to alcohol by hydrogen peroxide in the presence of aqueous sodium hydroxide.  Propan-1-ol b. It is an important laboratory method for the preparation of symmetrical and unsymmetrical ethers. In this method, an alkyl halide is allowed to react with sodium alkoxide. Ethers containing substituted alkyl groups (secondary or tertiary) may also be prepared by this method. The reaction involves S_N2 attack of an alkoxide ion on primary alkyl halide.		1 1
11.	a. 		1

	b.  2,4,6-Tribromophenol c.  2-Hydroxybenzoic acid (Salicylic acid)	1 1
12.	a. C—Cl bond acquires a partial double bond character due to resonance. b. The carbocation thus formed gets stabilised through resonance c. AgCN is mainly covalent, and nitrogen is free to donate electron pairs.	1 1 1
13.	a. 5-Ethylheptane-2,4-diol b. ***Mechanism*** *Step 1:* Formation of protonated alcohol.  Ethanol — Protonated alcohol (Ethyl oxonium ion) *Step 2:* Formation of carbocation: It is the slowest step and hence, the rate determining step of the reaction.  *Step 3:* Formation of ethene by elimination of a proton.  Ethene The acid used in step 1 is released in step 3. To drive the equilibrium to the right, ethene is removed as it is formed. **OR** i. 4 -Ethoxy-1 -1 – dimethyl cyclohexane ii. The formation of ether is a nucleophilic bimolecular reaction (S_N2) involving the attack of alcohol molecule on a protonated alcohol, as indicated below: 	1 1 ½ ½ 1 1 ½ ½

14.	a.  b. Isopropyl chloride<1-Chloropropane<1-Chlorobutane c. stereoisomers related to each other as non-superimposable mirror images are called enantiomers. They differ by optical rotation. **OR** c. Chiral + Asymmetric carbon	1 1 1+1 1+1
15.	a.  b.  c.  d.  e.  **OR**	½ + ½ 1 1 ½ + ½ ½ + ½ 1

	(i) **Five canonical structures of anisole** (ii)  Y is known as Grignard Reagent. (iii) a. $CH_3CH=CHCHO$ b.  	½ +1+ ½ 1 1