DPP
DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

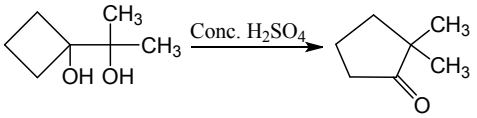
Solutions

Subject : CHEMISTRY
DPP No. : 8

Topic :- Alcohols, Phenols & Ethers

1 **(d)**

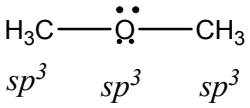
The pinacol-pinacolone rearrangement involves dehydration of diols through the formation of carbocation intermediate which rearranges to more stable compound.



2 **(a)**

Oxidation of glycerol by $KMnO_4$ is violent.

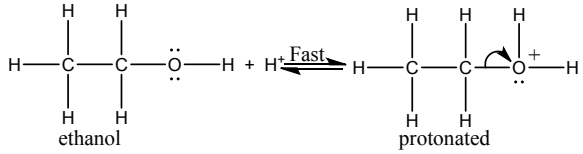
4 **(b)**

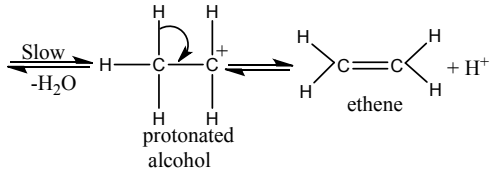


sp^3 and sp^3-hybridisations of carbon and oxygen in electronic structure of ether.

5 **(a)**

Protonation of –OH is first step. Conversion of poor leaving group (-OH) into good leaving group $(-\overset{+}{O}H_2)$.





6 **(b)**

It contains $(R)_3COH$.

48 **(b)**

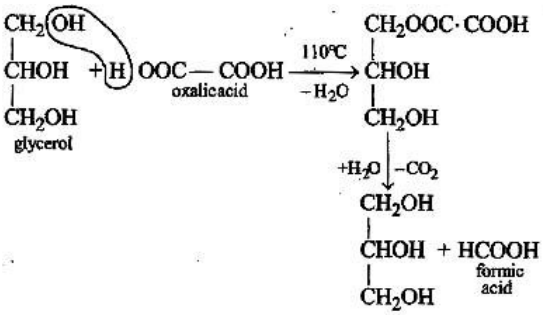
When an electron attracting group (like $-NO_2$, — CI) is attached to the phenol ring, it stabilises the negative charge on the oxygen of phenoxide ion. Due to this reason acidic character of phenol increases. But when an electron donating group (like $-CH_3$) is attached to the phenol ring, it destabilises the ring and hence, acidic character of phenol decreases.

Thus, the correct order of acidic character is

p- nitrophenol > *p*-chlorophenol > phenol > *o*-cresol.

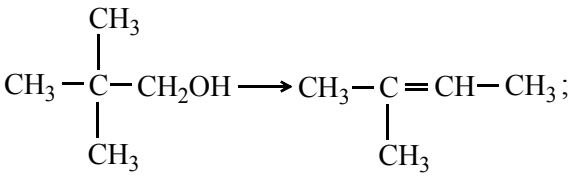
9 **(b)**

Glycerol react with oxalic acid at 110°C temperature, it gives methanoic acid (formic acid).



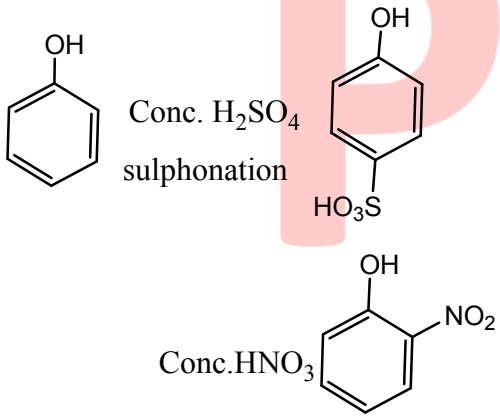
s

10 **(c)**



due to rearrangement of carbocation following alkyl shift.

11 **(b)**



First sulphonation is the means to block *para* position and to reduce the reactivity of phenolic ring against strong oxidising agent HNO_3. (The use of conc. HNO_3 over phenol cause the oxidation of ring mainly). The strong acidic medium in second step cause desulphonation (ipso mechanism) also.

12 **(b)**

Glycols are dihydric alcohols (having two hydroxyl groups). Ethylene glycol is the first member of this series.

CH_2OH

|

CH_2OH

ethylene glycol

13 **(d)**

Absolute alcohol is 100% alcohol.

14 **(c)**

The order of reactivity depends upon the stability of the carbocation formed *ie*, $FCH_2\overset{+}{C}HCH_3$, $FCH_2CH_2\overset{+}{C}HCH_3$, $CH_3\overset{+}{C}HCH_3$ and $Ph\overset{+}{C}H_2$. The stability order of carbocations is $Ph\overset{+}{C}H_2 > CH_3\overset{+}{C}HCH_3 > FCH_2CH_2\overset{+}{C}HCH_3 > FCH_2\overset{+}{C}HCH_3$. Thus, the order of reactivity follows the order IV > III > II> I

15 **(b)**

Glycerol trinitrate adsorbed on Kieselguhr is called dynamite; an explosive.

17 **(d)**

4 alcohols (butan-1-ol; butan-2-ol; 2-methyl butan-1-ol; 2-methyl butan-2-ol) and 3 ethers (diethyl ether, methyl-propyl ether and methyl isopropyl ether).

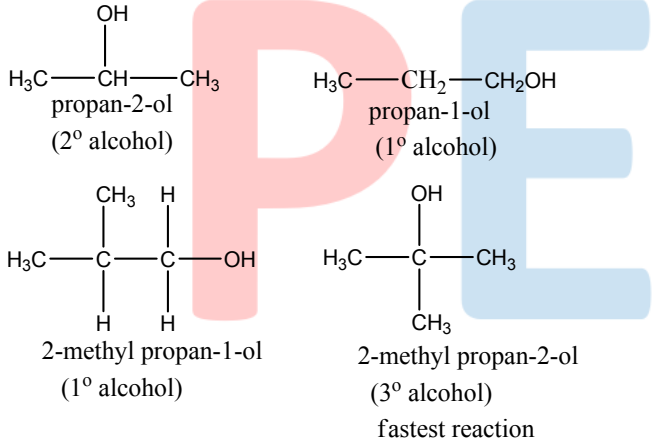
19 **(d)**

$ROH + HBr \rightarrow R - Br + H_2O$

The rate of reaction is fastest for 3° alcohol.

The rate of reaction decreases as fallows

3° > 2° > 1°



20 **(a)**

Alcohols (ROH) are hydroxy derivatives of alkane or alkyl derivative of water.

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**D**	**A**	**C**	**B**	**A**	**B**	**D**	**B**	**B**	**C**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**B**	**B**	**D**	**C**	**B**	**A**	**D**	**B**	**D**	**A**