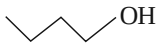
UNIT TEST-03

Subject : Chemistry
Class : XII

Q.1 (2)	**Q.2** (2)	**Q.3** (2)	**Q.4** (2)	**Q.5** (3)	**Q.6** (2)	**Q.7** (2)	**Q.8** (4)	**Q.9** (3)	**Q.10** (4)
Q.11 (2)	**Q.12** (3)	**Q.13** (1)	**Q.14** (1)	**Q.15** (4)	**Q.16** (3)	**Q.17** (2)	**Q.18** (3)	**Q.19** (4)	**Q.20** (4)
Q.21 (2)	**Q.22** (3)	**Q.23** (3)	**Q.24** (4)	**Q.25** (3)	**Q.26** (2)	**Q.27** (4)	**Q.28** (2)	**Q.29** (3)	**Q.30** (2)
Q.31 (4)	**Q.32** (1)	**Q.33** (3)	**Q.34** (1)	**Q.35** (4)	**Q.36** (1)	**Q.37** (2)	**Q.38** (4)	**Q.39** (3)	**Q.40** (2)
Q.41 (4)	**Q.42** (3)	**Q.43** (2)	**Q.44** (4)	**Q.45** (4)	**Q.46** (4)	**Q.47** (2)	**Q.48** (3)	**Q.49** (2)	**Q.50** (2)

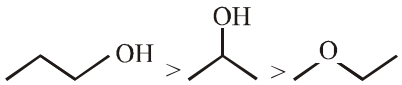
Q.1 (2)



Butane -1 - ol

Q.2 (2)

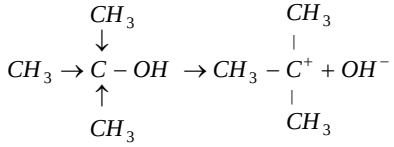
The order of boiling point is



(I) (II) (III)

Q.3 (2)

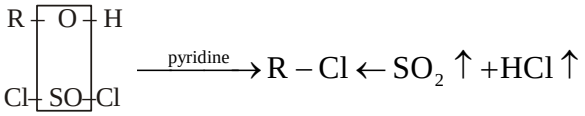
Tertiary alcohol readily reacts with halogen acid



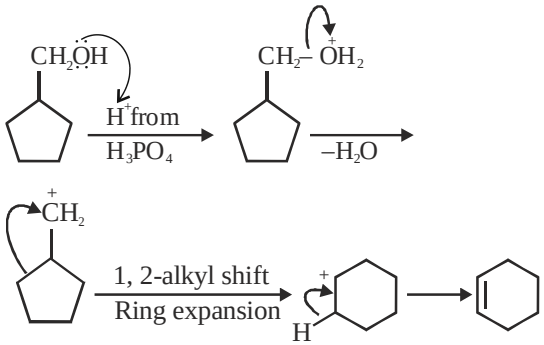
Presence of 3 alkyl group increases electron density on 3^o carbon atom. Hence $-OH$ group is easily removed. After the removal of group carbonium ion is formed which is most stable

Q.4 (2)

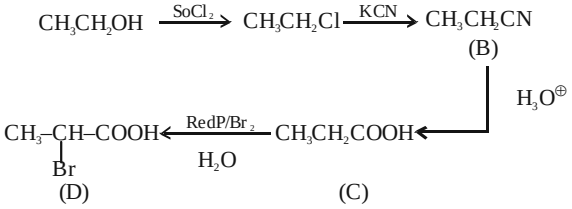
Reaction with thionyl chloride (darzan method)



Q.5 (3)



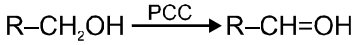
Q.6 (2)



Q.7 (2)

Iodoform reaction can be used for this transformation.

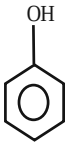
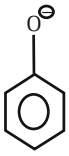
Q.8 (4)



Pyridinium chlorochromate is the mild oxidising agent.

Q.9 (3)

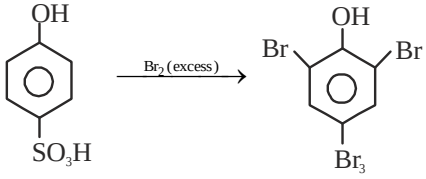
(*) Both alcohols & phenol are weak acid, the alcohols are less acidic then phenol because it is very tough to remove (H) ion from alcohol.

(*) Phenol  can lose easily because phenoxide ion  formed is stabilised by resonance.

Q.10 (4)

Q.11 (2)

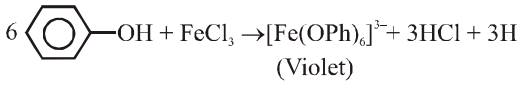
Q.12 (3)



– OH → electro Donating group and Ortho-Para directing

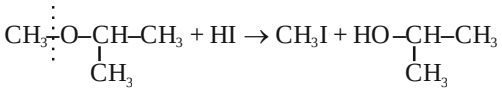
$-SO_3H$ → good leaving group

Q.13 (1)



Q.14 (1)

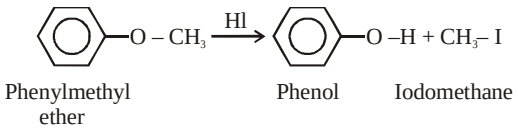
Q.15 (4)



Site of cleavage in case of unsymmetrical ether, if sec. alkyl group is present then halide ion attach the smaller alkyl group so alkyl halide informed from smaller alkyl group.

Q.16 (3)

Q.17 (2)



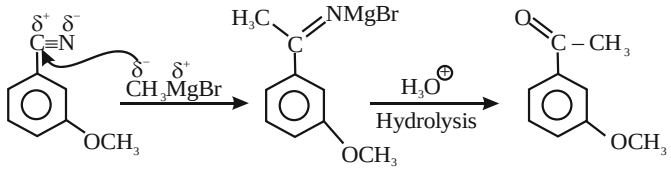
Q.18 (3)

Q.19 (4)

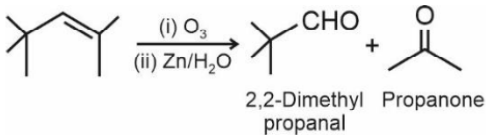
Q.20 (4)

Only Primary Alcohol will oxidise into Aldehyde.

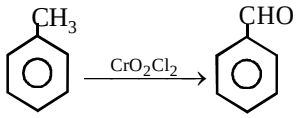
Q.21 (2)



Q.22 (3)

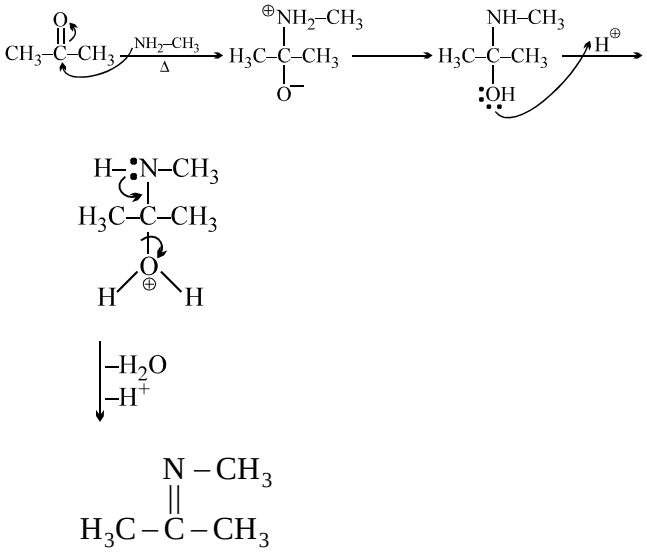


Q.23 (3)



Q.24 (4)

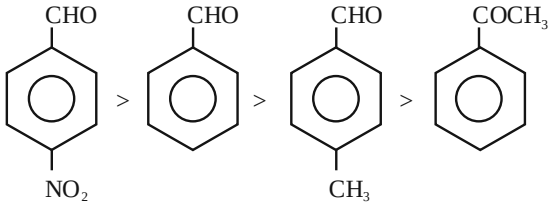
Q.25 (3)



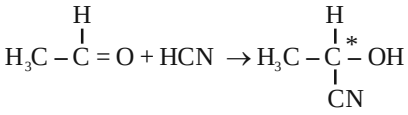
Q.26 (2)

Reduction of carbonyl compounds to alkane by Zn-Hg/HCl is called Clemmensen reduction

Q.27 (4)



Q.28 (2)



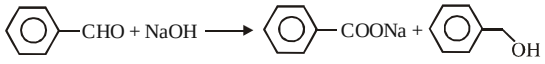
In this * C is chiral C-atom

Q.29 (3)

Carbonyl componds containing alpha hydrogen atom undergoes aldol condensation reaction.

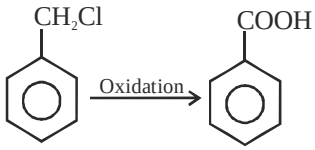
(*) Formaldehyde (HCHO) does not contain alpha hydrogen atom. Hence it does not udergoes aldol condensation reaction.

Q.30 (2)



This is Cannizzaro reaction.

Q.31 (4)



On oxidation side chain containg at least one α H atoms gets oxidised to –COOH group irrespective of number of carbon atoms.

Q.32 (1)

$CH_2(F)-COOH > CH_2(Br)-COOH$

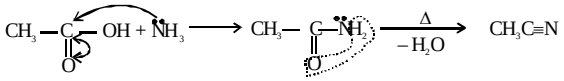
$-I \rightarrow -F > -Br$ order

Q.33 (3)

Q.34 (1)

This is Hell Volhard Zelinsky Reaction (H.V.Z) so product is ∝-Halo acids

Q.35 (4)



Q.36 (1)

I. $CH_3CH=CH_2 + H_2O \xrightarrow{H^+} CH_3\underset{OH}{CH}CH_3$

II. $CH_3CHO \xrightarrow[(ii)H_2O]{(i)CH_3MgI} CH_3\underset{OH}{CH}CH_3$

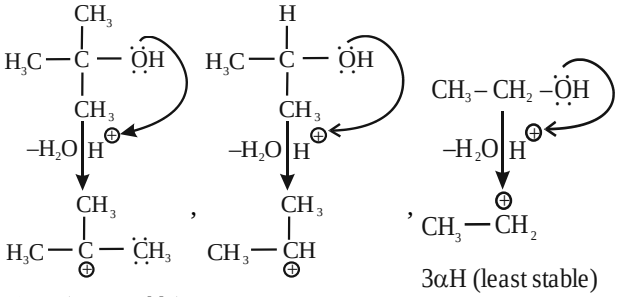
III. $CH_2O \xrightarrow[(ii)H_2O]{(i)C_2H_5MgI} C_2H_5CH_2OH$

IV. $CH_3CH=CH_2 \xrightarrow[neutral]{KMnO_4} CH_3\underset{OH}{CH}\underset{OH}{CH_2}$

Q.37 (2)

Correct order of dehydration of alcohol is : - 3° > 2° > 1°

⇒ depends on stability of Intermediate.



Q.38 (4)

$CH_3-Br \xrightarrow[-KBr]{KCN} \underset{\text{Acetonitrile (A)}}{CH_3-CN} \xrightarrow[\text{(Hydrolysis)}]{H_3O^+}$

(Methyl bromide)

$\underset{\text{Acetic acid (B)}}{CH_3COOH} \xrightarrow[\text{(Reduction)}]{LiAlH_4/ether} \underset{\text{Ethyl alcohol (C)}}{CH_3CH_2OH}$

Q.39 (3)

There is not any resonance in CH_3–OH. Resonance is poor in p-Ethoxyphenol than phenol. so C-OH bond length order is: CH_3–OH > p-ethoxyphenol (p-EtO-C_6H_4-OH) > Ph–OH

Bond length decreases due to resonance

Q.40 (2)

Q.41 (4)

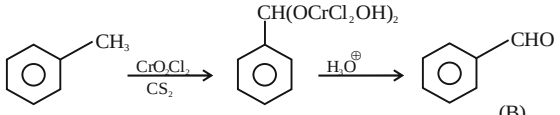
Bulkier the alkyl groups in the ether, greater is the C-O-C bond angle due to steric factor

Q.42 (3)

$CH_3-\underset{I}{CH_2}+C_2H_5-\overset{\ominus}{O}\overset{\oplus}{Na} \xrightarrow{SN^2} CH_3-CH_2-O-CH_2CH_3+NaI$

Example of Nuecleophilic subtitution reaction.

Q.43 (2)



Chromium complex (A)

Q.44 (4)

Iodoform test is given by the compounds having either

$CH_3-\underset{OH}{CH}-$ group or $CH_3-\overset{O}{\overset{\|}{C}}-$ group

Q.45 (4)

Aromatic aldehydes do not respond to Fehling's solution test.

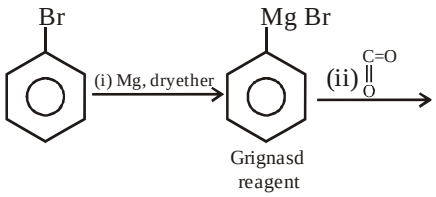
Q.46 (4)

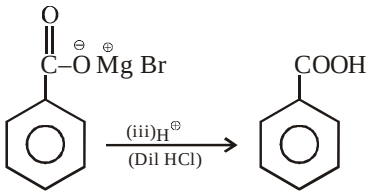
Product $\rightarrow C_6H_5CH_2OH$

Q.47 (2)

$CH_3-\underset{CH_3}{\underset{|}{CH}}-\overset{O}{\overset{\|}{C}}-H$ This compound can give aldol reaction but to show Aldol condensation carbonyl group Should have at least 2α –H .

Q.48 (3)





Q.49 (2)

–COOH and *–OH* group form the hydrogen bond by which they have high boiling point. *–COOH* group show strong hydrogen bonding so it form dimer and have more boiling point than *–OH* group. While *–CHO* group do not form hydrogen bond. Thus the reactivity order are as 3 > 1 > 2.

Q.50 (2)

(i) $MeCOOH + PCl_5 \rightarrow Me–\underset{\underset{O}{\|}}{C}–Cl + POCl_3 + HCl$

(ii) $Me–\underset{\underset{O}{\|}}{C}–OMe + PCl_5 \rightarrow Me–\underset{\underset{O}{\|}}{C}–Cl + POCl_3 + MeCl$

(iii) $Me–\underset{\underset{O}{\|}}{C}–O–\underset{\underset{O}{\|}}{C}–Me + PCl_5 \rightarrow 2\ Me–\underset{\underset{O}{\|}}{C}–Cl + POCl_3$

(iv) $Me–\underset{\underset{O}{\|}}{C}–NH_2 + PCl_5 \xrightarrow{\text{Dehydration}} Me–C \equiv N + H_2O$