MDCAT MCQS WITH EXPLANATION

CHAPTER (ALCOHOLS, PHENOLS AND ETHER)

CHEMISTRY.

"MCQ's"

Q1. Which one of the following pairs of reagents can be used to prepareCH_3CH_2Cl?

a. $CH_3CH_2OH + HCl$

b. $CH_3CH_2OH + PCl_5$

c. $CH_3CH_3 + Cl_2$

d. All of these

Q2. Which one is glycol?

a. 1,2 Ethanediol

b. 1,2-Butanediol

c. 1,2 Propanedoil

d. All of these

Q3. A compund "Z" reacts immadeatily with a mixture of $ZnCl_2$ and HCl at 25°C, "Z" is:

a. 1° -alchol

b. 2° -alchol

c. 3° -alchol

d. Methanol

Q4. Which one is Lucas reagent?

a. $ZnCl_2 + HCl$

b. Brine

c. Schiff reagent

d. Nessler reagent

Q5. Which bond is broken down in esterification?

a. O—H bond in alcohal

b. C—O bond in carboxylic acid

c. C—H bond is alcohal

d. Both a and b

Q6. Among the following the gain spirite is:

a. C_6H_5OH

b. CH_3OH

c. CH_3CH_2OH

d. 1- butanol

Q7. Recetified spirite is:

a. 95% ethanol

b. 100% ethanol

c. 20% methanol

d. none of these

Q8. Phenol on hydrogenationgives:

a. Cyclohexene

b. Cyclohexane

c. Cyclohexanol

d. Benzene

Q9. CH_3OH on oxidation gives:

a. Formaldehyde

b. Acetaldehyde

c. Ketone

d. Both b and c

Q10.Equal masses of alcohals are taken, which of them contain highest boiling point?

a. P°—Alcohal

b. T °—Alcohal

c. S°—Alcohal

d. all of them

Q11. Glycols and glycerols can be differentiated on the basis of :

a. No of carbon atom

b. Position of hydroxyl group

c. No of hydroxyl group

d. all of these

Q12. Which of the following has highest boing point?

a. n — butanol

b. 2 — butanol

c. 2 —methyl 2— propanol

d. 2 —methyl 1— propanol

Q13. Reduction of aldehyde produces:

a. Primary alchoal

b. Sec alchoal

c. Tertairy alchoal

d. none of these

Q14 .A mixture of ethanol and methanol formed by reduction of ester is separatrd by:

a. Destructive distillation

b. Filtration

c. Frictional distillation

d. none of these

Q15. When a nucleophile attacks on alcohal which bond will break.

a. C–O

b. O–H

c. Does not depend on reagent

d. Both a and b

Q16. Which of the foolowing test is used to distungish betweem primary, secondary and tretairy alcohals?

a. Lucas test

b. Ring test

c. Both a and b

d. none of these

Q17. Methylated spirit is unfit for drinking due to presence of:

a. 10% H_2O

b. 15% H_2O

c. 10% CH3OH

d. 30% C2H5OH

Q18. The slow step in dehydration of an alcohol is:

a. Protonation of alcohol

b. Formation of carbocation

c. Loss of proton from carbocation

d. None of these

Q19. Primary, secondary and tertiary alcohols can be distinguished by:

a. Catalytic dehydrogenation

b. Oxidation

c. Lucas test

d All of these

Q20. Phenols react with acid halides or acid anhydrides in aqueous alkali solution to produce:

a. Ethers

b. Esters

c. Ketones

d. Aldehydes

Q21. Alcohols and phenols can be distinguished by

a. Reaction with bromine water

b. Reaction with FeCl3

c. lodoform test

d. All of these

Q22. Ethyl alcohol can be denatured by adding:

a. Pyridine

b. Methanol

c. Acetone

d. All of them

Q 23. Grain Spirit is:

a. Iso propyl alcohol

b. Iso butyle alcohol

c. n-propyl alcohol

d. Ethyl alcohol

Q24. Tertiary alcohols are stable to oxidation under normal condition due to:

a. Lack of a hydrogen

b. High molecular mass

c. Bulky effect

d. Electronic effect

Q25. Protonation off alcohol is more easier than phenol because of :

a. Resonance

b. Lone pair

c. Polarity

d. All of these

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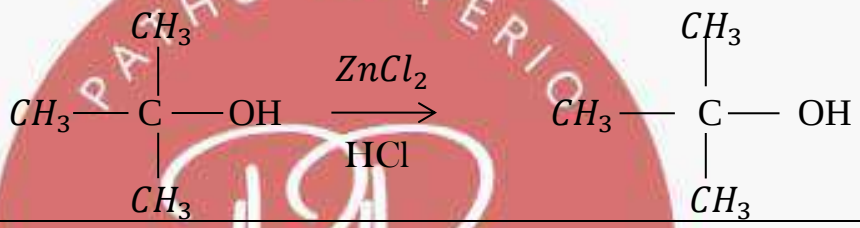
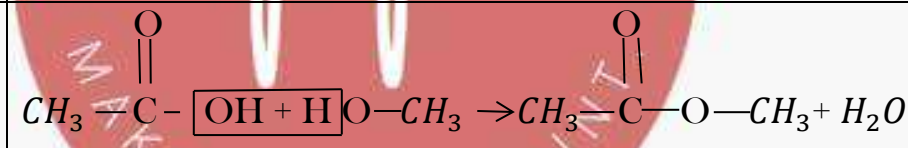
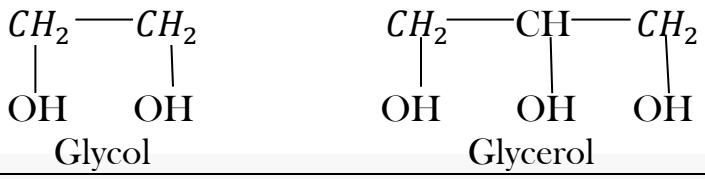
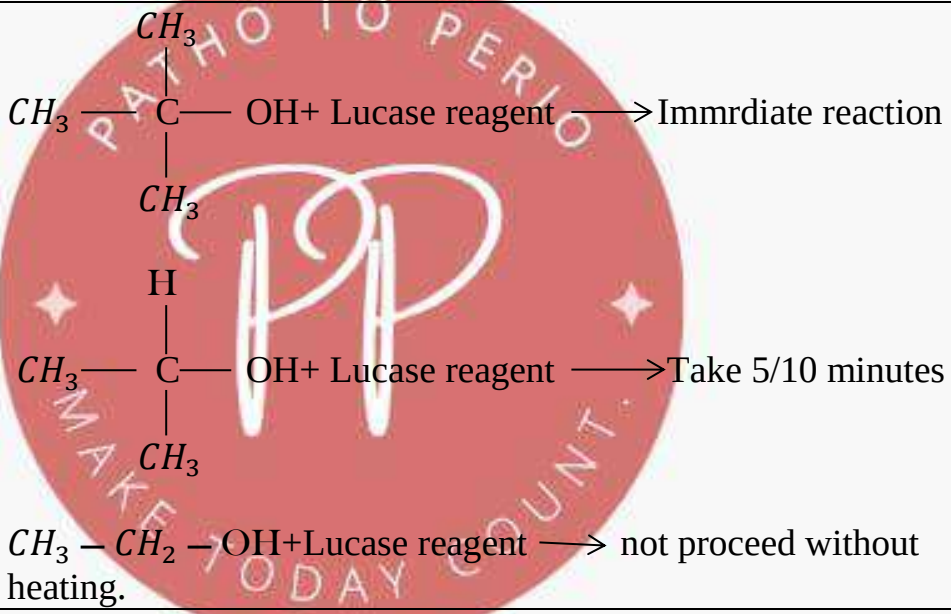
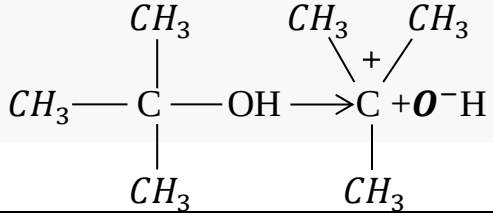
"EXPLANATION OF MCQ's"

MCQ's No	Correct Option	EXPLANATION
1.	D	As $CH_2CH_2OH + HCL\ CH_2CH_2\text{-}Cl + H_2O$ $CH_2H_2OH + PCl5 \rightarrow CH_2CH_2CI + POCI + HCL$ $CH_2CH_2{+}Cl_2CH_2CH_2CI{+}HCL$
2.	D	All are glycol because two hydroxyl groups are there in each molecule. Two OH groups are atached to adjacent carbon.
3.	C	T° (alcohol) is easily protonated and immediately give turgidity when react with lucas reagent(ZnCl2, HCl) 
4.	A	Dry $ZnCl_2$ + cone HCl are lucas reagent. It is used to differentiate among primary,secondry and treatairy alcohals.
5.	D	 In estrification O–H bond of alcohal and C–O bond of carboxylic acid.
6.	C	Ethanol is called grain spirit. It is a twice, distilled, neutral spirit derived from fermenting grain.
7.	A	Absolute alcohol is 100% rectified spirit is 95%.
8.	C	Phenol on hydrogenation produces 1. Cyclohexanone by electrophilic substitution. 2. Cyclohexanol by addition reaction.
9.	A	P° (alcohol) give aldehyde on oxidation. S° (alcohol) give ketones on oxidation. T° (alcohol) notoxidized.
10	A	P° (Alcohol) due to large surface area or contact area have high boiling point while in secondary and tertiary alcohal the contact area is less so less IMF thus low boiling point.

11.	C	In glycol two hydroxyl group and in glycerol three hydroxyl groups are there in different positions.  Glycol Glycerol
12.	A	Greater the surfacre area or area of contact more forces develops and highest will be the boiling point. Thus n-butanol has large surface area so IMF is strong and have high boiling point.
13.	C	Different alcohol has different boiling points. They can be separated by fractional distillation.
14.	A	When a nuclophile attack the C- O bond will breaks down and as a result carbocation is formed while OH bond remain intact.
15.	A	 CH_3-CH_2-OH+Lucase reagent ⟶ not proceed without heating.
16.	C	Methanol is poisonous and so the methylated spirit which contain 10% CH3OH is unfit for drinking.
17.	B	The slow step in the dehydration of alcohol is the formation of carbocation. 
18.	C	Lucas test help to distinguish alcohols. Tertiary alcohol + Lucas Reagent → Immediate reaction. Secondary alcohol + Lucas reagent → Take 5/10 minuts.

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		Primary alcohol + Lucas reagent → Not proceed without heating
19.	B	When phenol react with acid halide or acid anhydride ester is formed.
20.	D	All these are reagents which can distinguish alcohols and phenols.
21.	D	Denatured alcohol is unfit for human consumption. Pyridine, methanol, acetone etc can denature methanol
22.	D	Grain spirit is ethyl alcohol
23.	A	Absent of α-hydrogen in tertiary alcohal make it stable to oxidation under normal condition.
24.	A	In phenol resonace occur while alcohol there is no resonance, so the lone pair of oxygen is in resonance with the benze ring and thus delocalized that is why protonation of phenol is difficult
25.	A	Methanol especially crude methanol obtained as a distilled from wood is called wood spirit.