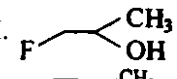
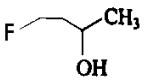
CBSE

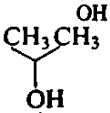
ALCOHOLS PHENOLS AND ETHERS WS

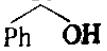
Class 12 - Chemistry

1. The order of reactivity of following alcohols, **[1]**

I. 

II. 

III. 

IV. 

towards concentrated HCl is:

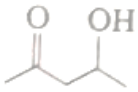
a) I > III > II > IV

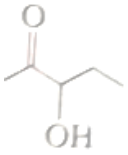
b) I > II > III > IV

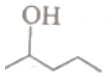
c) IV > III > II > I

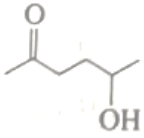
d) IV > III > I > II

2. Which one of the given will most readily be dehydrated in acidic conditions? **[1]**

a) 

b) 

c) 

d) 

3. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) $CH_2 = CH_2 \xrightarrow[-H_2O]{H_2SO_4}$	(i) $CH_3C(CH_3) = CH_2$
(b) $RCOOR' \xrightarrow{LiAlH_4}$	(ii) CH_3CH_2OH
(c) $CH_3CH_2CH_2Br + KOH(aq) \longrightarrow$	(iii) $RCH_2OH + R'OH$
(d) $CH_3C(CH_3)_2Br + KOH(aq) \longrightarrow$	(iv) $CH_3CH_2CH_2OH$

a) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)

b) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

c) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)

d) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)

4. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) Benzylic Alcohol	(i) 3-Bromocyclohexanol
(b) Allylic Alcohol	(ii) Phenylmethanol

(c) Vinylic Alcohol	(iii) Prop-2-ene-1-ol
(d) Alicyclic Alcohol	(iv) Ethenol

a) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
b) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)
c) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
d) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

5. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) tert-Butyl alcohol	(i) Butan-2-ol
(b) iso-Butyl alcohol	(ii) Pentan-1-ol
(c) sec-Butyl alcohol	(iii) 2-Methylpropan-2-ol
(d) n-Amyl alcohol	(iv) 2-Methylpropan-1-ol

a) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)
b) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
c) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
d) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

6. Match the items given in column I with that in column II **[1]**

Column I	Column II
(a) $C_6H_5N_2^+Cl^- + H_2O \xrightarrow{Heat}$	(i) C_6H_5ONa
(b) $C_6H_5OH + Na \longrightarrow$	(ii) C_6H_5OH
(c) $C_6H_5OH + CH_3COCl \xrightarrow{Pyridne}$	(iii) $C_6H_5NH_2$
(d) $C_6H_5OH + NH_3 \xrightarrow[675\ K]{ZnCl_2}$	(iv) $C_6H_5OCOCH_3$

a) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)
b) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)
c) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)
d) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)

7. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) R - O - H + R' - Mg - X	(i) R'COOR
(b) ROH + R'COOH	(ii) $CH_3COOC_2H_5$
(c) $C_2H_5OH + CH_3COCl$	(iii) $CH_2 = CH_2$
(d) $C_2H_5OH \xrightarrow[443K]{Conc.H_2SO_4}$	(iv) R' - H

a) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)
b) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
c) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
d) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

8. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) Rectified spirit	(i) 100% Ethanol
(b) Absolute alcohol	(ii) 95% Ethanol.

(c) Methylated Spirit	(iii) 20% Ethanol + 80% Gasoline
(d) Power Alcohol	(iv) 95% Ethanol + 5% Methanol

a) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

b) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)

c) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)

d) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)

9. Match the items given in column I with that in column II: **[1]**

Column I	Column II
(a) $CH_3CH_2OH \xrightarrow[413\ K]{\text{Conc. } H_2SO_4}$	(i) RCHO
(b) $RCH_2OH \xrightarrow[575\ K]{Cu}$	(ii) $CH_3CH_2OCH_2CH_3$
(c) $R_2CHOH \xrightarrow[575\ K]{Cu}$	(iii) $(CH_3)_2C = CH_2$
(d) $(CH_3)_3COH \xrightarrow[575\ K]{Cu}$	(iv) RCOR

a) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)

b) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)

c) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)

d) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

10. Match the compound given in column I with isomerism shown by them given in column II **[1]**

Column I	Column II
(a) Propan-1-ol and Propan-2-ol	(i) Chain Isomerism
(b) Butan-1-ol and 2-Methylpropan-1-ol	(ii) Position Isomerism
(c) Butan-1-ol and Ethoxyethane	(iii) Optical isomerism
(d) Butan-2-ol and Pentan-2-ol	(iv) Functional isomerism

a) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)

b) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)

c) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)

d) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

11. Match the items of column I with appropriate entries of column II: **[1]**

Column I	Column II
(a) p-Cresol	(i) Benzene-1,3-diol
(b) Catechol	(ii) 4-Methylphenol
(c) Resorcinol	(iii) Benzene-1,2,4-triol
(d) Hydroxyquinol	(iv) Benzene-1,2-diol

a) (a) - (iii), (b) - (ii), (c) - (iv), (d) - (i)

b) (a) - (iv), (b) - (i), (c) - (iii), (d) - (ii)

c) (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)

d) (a) - (ii), (b) - (iv), (c) - (i), (d) - (iii)

12. Match the items of column I with appropriate entries of column II: **[1]**

Column I	Column II
(a) Ethylene glycol	(i) Propane-1,2,3-triol
(b) Glycerol	(ii) 2,4,6-Trinitrophenol

(c) Picric Acid	(iii) Benzene-1,2,3-triol
(d) Pyrogallol	(iv) Ethane-1,2-diol

a) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)

b) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)

c) (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)

d) (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)

13. Lucas test is associated with _____. **[1]**

a) Alcohols

b) Aldehydes

c) Phenols

d) Carboxylic acid

14. Phenol can be distinguished from ethanol by the reactions with _____. **[1]**

a) Neutral $FeCl_3$

b) $KMnO_4$

c) Na in ammonia

d) $\frac{Br_2}{water}$

15. Ketones are reduced to the corresponding alcohols by catalytic hydrogenation to form _____. **[1]**

a) primary alcohols

b) tertiary alcohols

c) alcohols

d) secondary alcohols

16. n – propyl bromide on treating with alcoholic KOH produces _____. **[1]**

a) propanol

b) propene

c) propyne

d) propane

17. Anisole reacts with a mixture of concentrated sulphuric and nitric acids gives **[1]**

a) None of these

b) ortho-nitro anisole

c) paranitroanisole

d) both ortho and paranitroanisole

18. CH_3CH_2OH can be converted into CH_3CHO by _____. **[1]**

a) catalytic hydrogenation

b) treatment with $LiAlH_4$

c) treatment with $KMnO_4$

d) treatment with pyridinium chlorochromate

19. In alcohols, an increase of branching in carbon chain results in boiling point_____. **[1]**

a) remains the same

b) increase

c) decrease

d) Rises

20. Phenol is less acidic than _____. **[1]**

a) o – methoxyphenol

b) ethanol

c) o – methylphenol

d) o – nitrophenol

21. The process of converting alkyl halides into alcohols involves _____. **[1]**

a) substitution reaction

b) addition reaction

c) rearrangement reaction

d) dehydrohalogenation reaction

22. Reaction of an alcohol with organic acid is called the ____ **[1]**

a) Esterification process

b) Aldol condensation

c) Neutralization reaction

d) Hydrogenation process

23. Aldehydes are reduced to the corresponding alcohols by the addition of hydrogen in the presence of catalysts to form _____. **[1]**

a) secondary alcohols and tertiary alcohols

b) tertiary alcohols

c) primary alcohols

d) secondary alcohols

24. Arrange the following sets of compounds in order of their increasing boiling points : **[1]**

Pentan – 1 – ol, butan – 1 – ol, butan – 2 – ol, ethanol, propan – 1 – ol, methanol

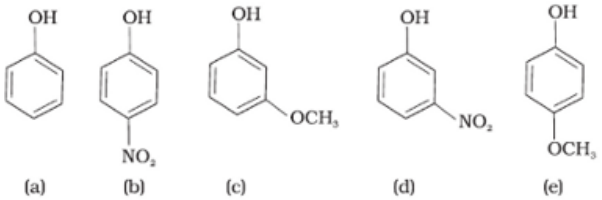
a) Propan – 1 – ol, butan – 2 – ol, butan – 1 – ol, pentan – 1 – ol, methanol, ethanol

b) Butan – 2 – ol, butan – 1 – ol, pentan – 1 – ol, methanol, ethanol, propan – 1 – ol

c) Methanol, ethanol, propan – 1 – ol, butan – 2 – ol, butan – 1 – ol, pentan – 1 – ol.

d) Pentan – 1 – ol Methanol, ethanol, propan – 1 – ol, butan – 2 – ol, butan – 1 – ol

25. Mark the correct order of decreasing acid strength of the following compounds. **[1]**



a) d > e > c > b > a

b) b > d > a > c > e

c) e > d > b > a > c

d) e > d > c > b > a

26. The end product in the following sequence is: **[1]**

$$Phenol \xrightarrow{NaOH} A \xrightarrow[140^oC]{CO_2} B \xrightarrow{H^+, H_2O} C \xrightarrow{(CH_3CO)_2O} D$$

a) Salicylaldehyde

b) Salicylic acid

c) Aspirin

d) Phenyl acetate

27. Arrange the following compounds in increasing order of their acid strength: **[1]**

Propan – 1 – ol, 2,4,6 – trinitrophenol, 3 – nitrophenol, 3,5 – dinitrophenol,phenol, 4 – methylphenol.

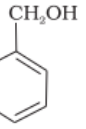
a) 4 – methylphenol, phenol, propan – 1 – ol,3 – nitrophenol, 3,5 – dinitrophenol, 2,4, 6 – trinitrophenol.

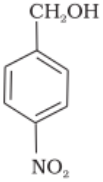
b) Propan – 1 – ol, 4 – methylphenol, phenol, 3 – nitrophenol, 3,5 – dinitrophenol,2,4, 6 – trinitrophenol.

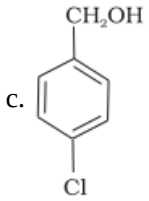
c) 3 – nitrophenol, 3,5 – dinitrophenol,2,4, 6 – trinitrophenol, Propan – 1 – ol, 4 – methylphenol

d) 3, 5 – dinitrophenol,2,4, 6 – trinitrophenol, 3 – nitrophenol ,Propan – 1 – ol, 4 – methylphenol,.

28. Mark the correct increasing order of reactivity of the following compounds with HBr/HCl. **[1]**

a. 

b. 

c. 

a) b < a < c

b) c < b < a

c) b < c < a

d) a < b < c

29. What is the correct order of reactivity of alcohols in the following reaction? **[1]**

$$R-OH+HCl \xrightarrow{ZnCl_2} R-Cl+H_2O$$

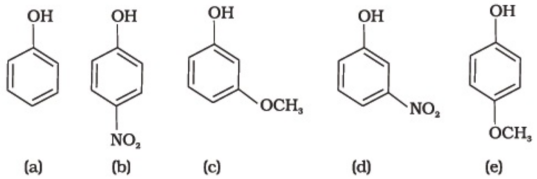
a) 3° > 1° > 2°

b) 1° > 2° > 3°

c) 1° < 2° > 3°

d) 3° > 2° > 1°

30. What will be the correct order of acidity of the following compounds? **[1]**



a) b>d>c>e>a

b) b>d>c>a>e

c) d>b>c>a>e

d) b>d>a>c>e

31. Arrange the following compounds in increasing order of boiling point.: **[1]**

Propan-1-ol, butan-1-ol, butan-2-ol, Pentan-1-ol

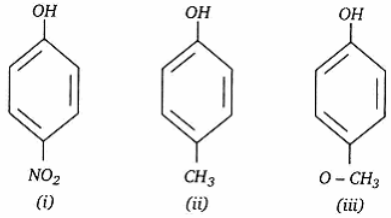
a) Propan-1-ol, butan-1-ol, butan-2-ol, pentan-1-ol

b) Pentan-1-ol, butan-2-ol, butan-1-ol, propan-1-ol

c) Pentan-1-ol, butan-1-ol, butan-2-ol, propan-1-ol

d) Propan-1-ol, butan-2-ol, butan-1-ol, pentan-1-ol

32. The increasing order of acidic strength of the following is: **[1]**



a) (ii) < (iii) < (i)

b) (iii) < (ii) < (i)

c) (i) < (ii) < (iii)

d) (i) < (iii) < (ii)

33. Which of the following statement is correct or wrong: **[1]**

Statement A: Solubility of alcohols in water goes on increasing with increasing molecular weight.

Statement B: Boiling point of alcohols goes on increasing with increasing molecular weight.

a) Neither statement A nor statement B is true.

b) Statement A is true; Statement B is false.

c) Both the statements A and B are true

d) Statement B is true; Statement A is false.