NEET ANSWER KEY & SOLUTIONS

SUBJECT :- CHEMISTRY

CLASS :- 12th **PAPER CODE :- CWT-8**

CHAPTER :- ALCOHOL, PHENOL & ETHER

ANSWER KEY

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

SOLUTIONS

SECTION-A

1. (A)

Sol. $CH_3-\underset{CH_3}{\overset{|}{C}}=CH_2 + BH_3 \xrightarrow{H_2O_2} CH_3-\underset{CH_3}{\overset{|}{CH}}-CH_2OH$

2. (C)

Sol. $CH_3 - COOH \xrightarrow{LiAlH_4} CH_3CH_2 - OH$

3. (C)

Sol. $CH_3-\overset{\ominus}{C}H_2-Mg-Br + CH_3-CH_2-\overset{\oplus}{C}(=O)-CH_2-CH_3$

Hydrolysis

$CH_3-CH_2-\underset{OH}{\overset{|}{C}}(CH_2-CH_3)-CH_2-CH_3$

4. (C)

Sol. $CH_2=CH_2 + HBr \longrightarrow CH_3-CH_2-Br$

$\xrightarrow{KOH(aq.)} CH_3-CH_2-OH \xrightarrow[I_2]{Na_2CO_3} CHI_3$

5. (B)

Sol. $C_2H_5-NH_2 + HNO_2 \longrightarrow C_2H_5OH$

6. (C)

Sol. Lederer-Manasse reaction gives ortho and para product only.

7. (C)

Sol. $CH_3 - \underset{OH}{\overset{|}{CH}} - CH_3 + Cr\ (VI) \longrightarrow CH_3 - \underset{O}{\overset{||}{C}} - CH_3 + Cr\ (III)$

8. (B)

Sol. $CH_3-CH_2-\underset{OH}{\overset{|}{CH}}-CH_3 \xrightarrow{K_2Cr_2O_7[O]} CH_3-CH_2-\underset{O}{\overset{||}{C}}-CH_3$

9. (D)

Sol. $CH_3CHOHCH_3 \xrightarrow{K_2Cr_2O_7} CH_3-\underset{O}{\overset{||}{C}}-CH_3$

$\xrightarrow{I_2/Na_2CO_3} CH_3I$

10. (A)

Sol. When treated with HBr or HCl alcohol typically undergo a nucleophilic substitution reaction to generate an alkyl halide and water. Alcohol relative reactivity order 3°> 2° > 1° > methyl . Methanol and primary alcohol will proceed via an SN_2 mechanism since these have highly unfavourable carbocation.

11. (A)

Sol. $CH_3-\underset{NH_2}{\overset{|}{CH}}-CH_3 + HNO_2 \xrightarrow{0-5°C} CH_3-\underset{OH}{\overset{|}{CH}}-CH_3$

12. (B)

Sol. $CH_3-CH_3-CH_2-OH$ undergo oxidation.

13. (A)

Sol. With increase in branching, molecule becomes spherical and have less hydrogen bonding. Hence 3° will have least boiling point.

14. (B)

Sol. (1) $CH_3MgI + CH_3CHO \xrightarrow{H_3\overset{\oplus}{O}} CH_3-\underset{2°Alc.}{\overset{OH}{\overset{|}{CH}}}-CH_3$

(2) $(CH_3)_2C=CH_2 \xrightarrow{\overset{\oplus}{H}-\overset{\ominus}{HSO_4}} (CH_3)_2-\underset{4°Alc.}{\overset{OH}{\overset{|}{C}}}-CH_3$

(3) $CH_3COOC_2H_5 \xrightarrow[C_6H_3\overset{\ominus}{O}]{Na^{\oplus}} \underset{1°Alc.}{CH_3-OH} + CH_3-COOCH_3$

$CH_3-\underset{OH}{\overset{|}{CH}}-C_2H_5 \longrightarrow$ Enantiomeric pair due to

(4) $H-\underset{R}{\overset{CH_3}{\overset{|}{C}}}-OH$ ⫞⫟ $OH-\underset{R}{\overset{CH_3}{\overset{|}{C}}}-H$

15. (B)

Sol. $CH_3COOH + C_2H_5—OH \xrightarrow{H^{\oplus}} CH_3—CO—OC_2H_5 + H_2O$

16. (A)

Sol. Pyridine absorbs acid formed in process.

17. (D)

Sol. Removal of H is oxidation.

18. (A)

Sol. Oxidation is mainly due to α – Hydrogen.

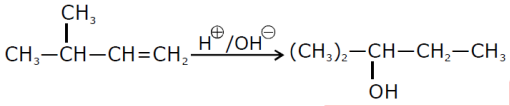
19. (C)

Sol. Diethyl carbinol is tertiary alcohol.

20. (C)

Sol. $CH_3—OH$ & C_2H_5OH can be distinguished by heating with I_2 and base.

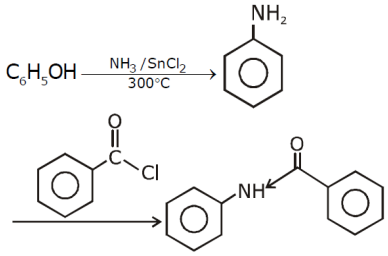
21. (C)

Sol. 

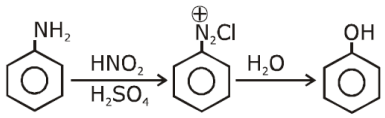
22. (C)

Sol. In the esterification reaction, OH bond of alcohol cleaves. The presence of alkyl group with +I effect makes the cleavage of the bond difficult and the alcohol becomes less reactive toward esterification. Greater the number of alkyl groups present lesser will be the reactivity of alcohol.

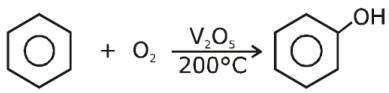
23. (B)

Sol. 

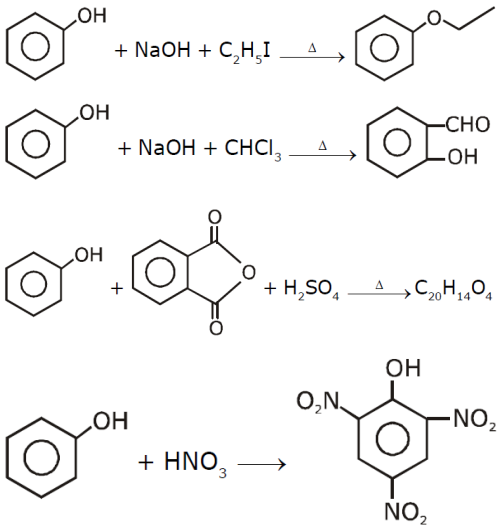
24. (D)

Sol. 

25. (C)

Sol. 

26. (A)

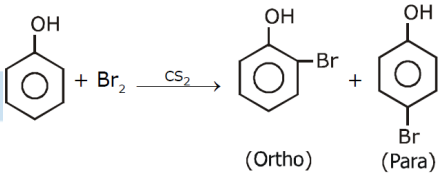
Sol. 

27. (C)

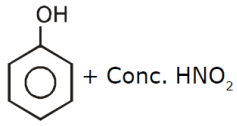
Sol. $C_6H_5OH \xrightarrow{C_6H_5COCl} C_6H_5OCOC_6H_5$

Schotten-Baumann reaction.

28. (C)

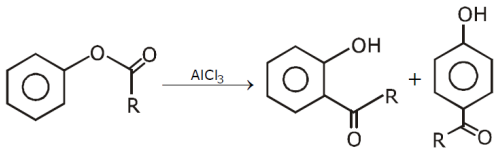
Sol. 

29. (D)

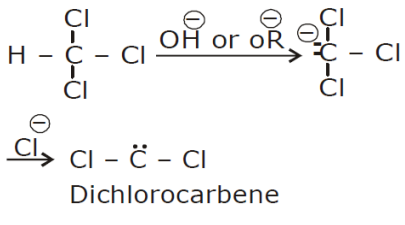
Sol. 

30. (B)

Sol. Fries rearrangment

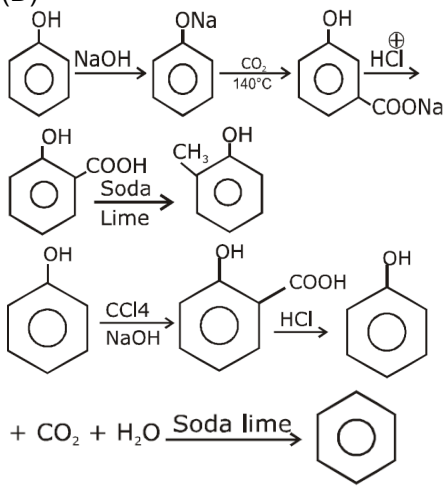


31. (B)

Sol. 

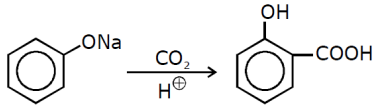
32. (D)

Sol.



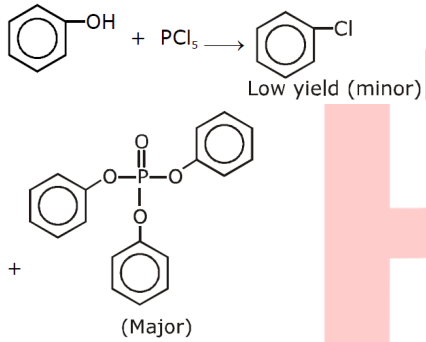
33. (C)

Sol.



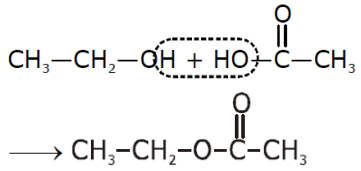
34. (D)

Sol.



35. (C)

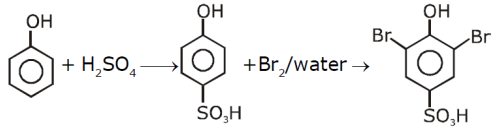
Sol.



SECTION-B

36. (A)

Sol.



37. (A)

Sol. $(CH_3)_3CONa + C_2H_5Br \rightarrow (CH_3)_3COC_2H_5 +$ NaBr

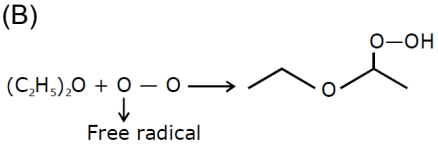
38. (D)

Sol. $C_2H_5OH + H_2SO_4\ (140°C) \longrightarrow C_2H_5—O—C_2H_5$

$C_2H_5OH + H_2SO_4\ (120°C) \longrightarrow CH_2 = CH_2$

39. (B)

Sol.



40. (A)

Sol. KI and KSCN are used.

41. (B)

Sol. Alkyl halide undergo β - elimination reaction.

42. (B)

Sol. Ethoxide ion act as nucleophile.

43. (C)

Sol. $CH_3—CH=CH—O—CH_2—CH_3 \xrightarrow[\text{heat}]{\text{Conc. HI}}$

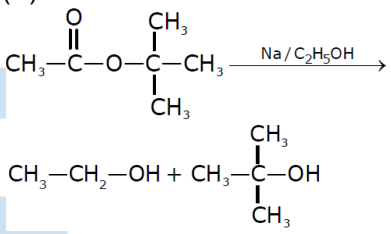
$CH_3—CH_2—CHO$ + Et CH_3CH_2I

44. (A)

Sol. $(C_2H_5)_2O + H^{\oplus} \longrightarrow C_2H_5OH$

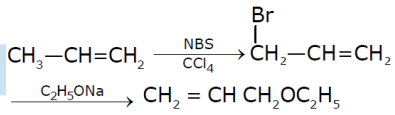
45. (A)

Sol.



46. (B)

Sol.



47. (C)

Sol. It is correct that sodium phenoxide (sodium salt of phenol) and CO_2 on heating from sodium salicylate. This is known as Kolbe's reaction. Ethanol does not respond to this reaction. Therefore, assertion is true. But the reason that phenoxide ion is more basic than ethoxide ion is not correct.

48. (B)

Sol. Zeolites are shape-selective porous solid acid catalysts, their catalytic activity originates from the presence of highly acidic $Al-O(H)-Si$ hydroxyl in the framework.

49. (C)

Sol. Ethers being Lewis bases form etherates with Lewis acids.

50. (C)

Sol. A mixture of conc. *HCl* + anhyd. $ZnCl_2$ is called Lucas reagent.