NEET ANSWER KEY & SOLUTIONS

SUBJECT :- CHEMISTRY

CLASS :- 12th **PAPER CODE :- CWT-7**

CHAPTER :- ALKYL HALIDE

ANSWER KEY

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

SOLUTIONS

SECTION-A

1. (D)

Sol. $C_2H_5OH \xrightarrow{Red\ P+Br_2} C_2H_5Br$

$C_2H_5OH \xrightarrow{SOCl_2} C_2H_5Cl$

$C_2H_5OH \xrightarrow{KBr+Conc.H_2SO_4} C_2H_5Br$

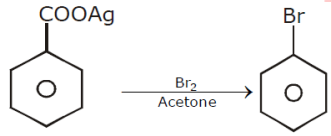
All of the above leads to formation of an alkyl halide.

2. (C)

Sol. Darzen's reaction is

$ROH + SOCl_2 \xrightarrow{Pyridine} RCl + SO_2 + HCl$

3. (A)

Sol. 

4. (B)

Sol. Polarity order of alkyl halides

RF > RCl > RBr > RI because electronegative difference is decreasing

F > Cl > Br > I

5. (B)

Sol. Finkelstein Reaction

$CH_3CH_2Br + NaI \xrightarrow{Acetone} CH_3CH_2I + NaBr$

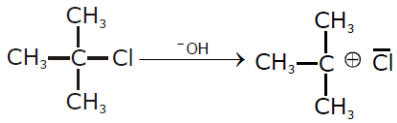
6. (B)

Sol. $CH_3CH_3Cl + AgF \rightarrow CH_3CH_2F + AgCl$

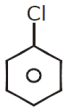
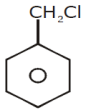
This is Swarts reaction

7. (C)

Sol. In S_N1, formation of carbocation is the first step:



8. (D)

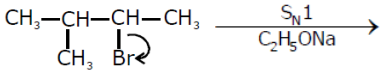
Sol. Chlorobenzene  is less reactive than  because substitution of Cl from chlorobenzene is difficult as compared to substitution of Cl from benzylchloride due to the formation of stable benzyl carbocation.

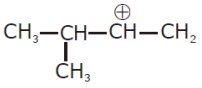
9. (D)

Sol. Vinyl halide are unreactive towards nucleophilic substitution because C–X bond develops a partial double bond character.

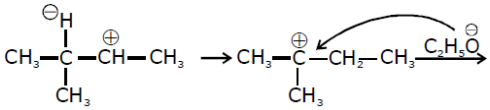
$CH_2 = CH - X \longleftrightarrow \bar{C}H_2 - CH = \overset{\oplus}{X}$

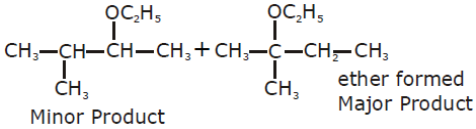
10. (C)

Sol. 



less stable so rearrangement takes place





so both A, B are correct.

11. (B)

Sol. $CH_3CH_3 \xrightarrow[light]{Cl_2} \xrightarrow{aq.KOH}$

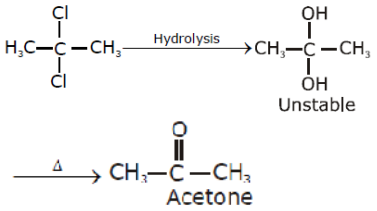
$CH_3CH_2OH \xrightarrow{oxidation} CH_3CHO$

12. (B)

Sol. $C_2H_5B \xrightarrow[H_2O]{moist\ Ag_2O} C_2H_5OH$ formed

13. (A)

Sol. 2,2-Dichloropropane



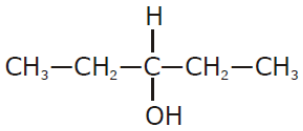
14. (D)

Sol. Both geminal and vicinal dihalides when heated with zinc gives alkenes by losing both the halogen atoms. It is a dehalogenation reaction.

15. (B)

Sol. Wrong Statement

* All secondary alcohol gives iodoform test



this is a 2° alcohol but it does not gives iodoform test so it is wrong statement.

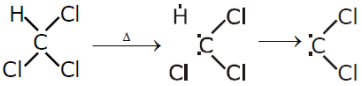
16. (B)

Sol. Ethanol is added to prevent oxidation of chloroform . Ethanol also converts phosgene to ethyl carbonate which is harmless.

17. (A)

Sol. Isocyanide reaction involve: CCl_2 intermediate formation.

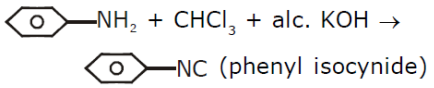
1° amine + $CHCl_3$ + KOH → Isocyanide test



Intermediate form

18. (B)

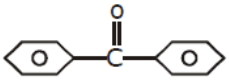
Sol.



This is called as Hoffmann's carbylamines test, which is also called isocyanide test.

19. (A)

Sol. Iodoform test is not given



by because it does not contain —CH_3 bonded to 

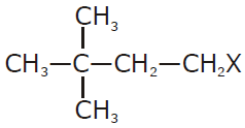
group on terminal

20. (B)

Sol. Catalyst used for preparation of CCl_2F_2 dicholorodifluoromethane is $SbCl_5$ + HF.

21. (D)

Sol. Neohexyl halide is primary halide



22. (D)

Sol. Reactivity order of alcohols towards H–X will be II > IV > III > I because II allylic, IV is 3° & III is 1° while $CH_2 = CH_2$ — OH is vinylic which is least reactive

23. (B)

Sol. Alkane isonitrile, RNC

RX + AgCN → RNC

24. (D)

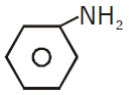
Sol. $4CH_3 - CH_2 - Cl + 4Na + Pb \rightarrow Pb(CH_3CH_2)_4$,

Tetra ethyl lead used as antiknocking agent.

25. (B)

Sol. $\underset{\text{(Bleaching Powder)}}{CaOCl_2} \xrightarrow[\text{acetone}]{\text{distilled}} \underset{\text{(Chloroform)}}{CHCl_2}$

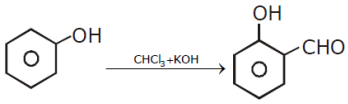
26. (C)

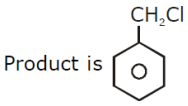
Sol. Carbylamine reaction is used for test of both aromatic 

& aliphatic primary amine.

27. (D)

Sol. Reimer-Tiemann's reaction



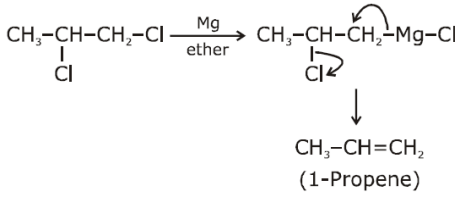


28. (B)

Sol. Grignard Reagent R MgX.

$RX + Mg \xrightarrow{\text{Ether}} \underset{\text{(Grignard Reagent)}}{RMgX}$

In case of vicinal dihalide, reaction with Mg leads to elimination reaction and gives alkene.

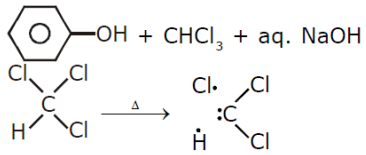


29. (B)

Sol. Carbylamine test (isocyanide test) Primary amine + $CHCl_3$ or CHX_3 + alc. KOH $\rightarrow$ isocyanide carbylamine

30. (C)

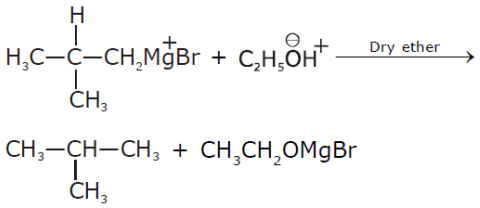
Sol.



Intermediate formed

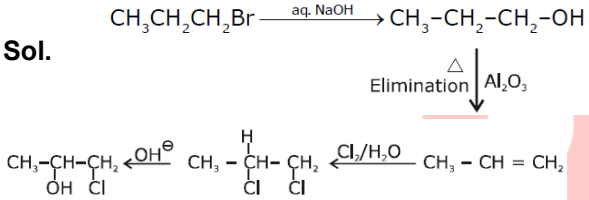
31. (D)

Sol.



32. (B)

Sol.



33. (A)

Sol. $H_3C-H_2C-CH_2Cl \xrightarrow{alc.KOH} CH_3-CH=CH_2$

$CH_3-\underset{Cl}{CH}-CH_3 \xrightarrow{alc.KOH} CH_3CH=CH_2$

34. (B)

Sol. $C_2H_5OH + HX \xrightarrow{ZnX_2} C_2H_5X$ order of reaction HI > HBr>HCl (I is the most reactive hydrogen halide)

35. (B)

Sol. $CH_3Br + {}^-OH \rightarrow CH_3OH + Br^- \rightarrow$ Mechanism S_N2

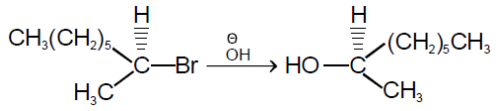
SECTION-B

36. (D)

Sol. $CH_3CH_2CH_2Cl + KCN \rightarrow \underset{(Butyronitrile)}{CH_3CH_2CH_2CN}$

37. (D)

Sol.



Inversion takes place in SN_2 mechanism

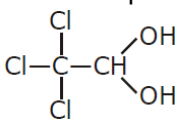
38. (B)

Sol. $C_2H_5Br + KCN \rightarrow C_2H_5CN + KBr$

This reaction is nucleophilic substitution reaction.

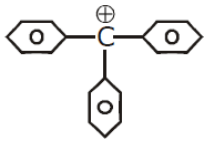
39. (C)

Sol. Stable compound due to more –I effect



40. (C)

Sol. Most stable carbocation formed



because resonance is more.

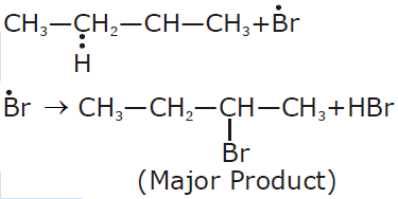
41. (D)

Sol. RX + aq. NaOH $\rightarrow$ ROH + NaX

This is nucleophilic substitution reaction

42. (B)

Sol. $CH_3-CH_2-CH_2-CH_3 + Br_2/light \rightarrow$



(Major Product)

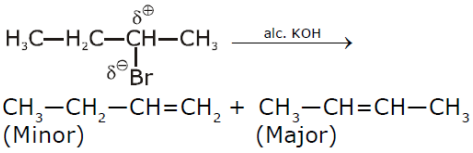
2-Bromo butane is the major product because secondary radical is stable than primary radical.

43. (A)

Sol. Bromination of alkane oocurs at slower rate because it is less electronegative than chloride.

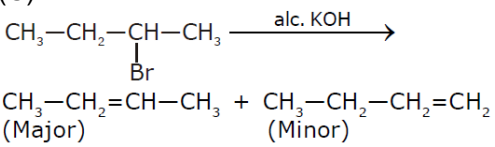
44. (C)

Sol. Secondary butyl bromide



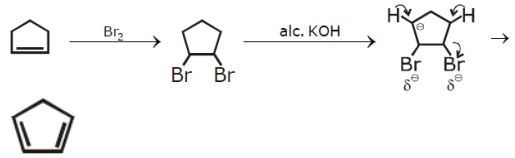
45. (C)

Sol.



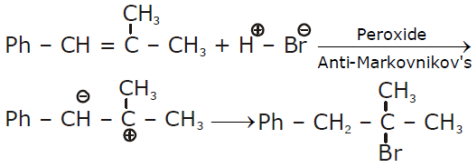
46. (D)

Sol.



47. (B)

Sol.



48. (B)

Sol. Cholretone is used as hypnotics.

49. (B)

Sol. Pyrene is used as fire extinguisher.

50. (D)

Sol. Freon's are used as (a) Coolant (b) Propellant (c) Solvent.