

## NEET ANSWER KEY & SOLUTIONS

**SUBJECT :- CHEMISTRY**

**CLASS :- 11<sup>th</sup>**

**PAPER CODE :- CWT-11**

**CHAPTER :- HYDROCARBON**

### ANSWER KEY

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

### SOLUTIONS

#### SECTION-A

1. (C)  
**Sol.** Electrolysis of Potassium acetate involves ionic and Free radical mechanism with ionization – (Ionic mechanism):  
 Metal salt are dissociates in water gives free ion  $2\text{RCOO-M}^+ \longrightarrow 2\text{RCOO}^- + 2\text{M}^+$   
 Free radical mechanism -  
 In oxidation at cathode, alkyl free radical is formed.

2. (B)  
**Sol.** Decarboxylation of isobutyric acid –  

$$\text{CH}_3 - \underset{\text{CH}_3}{\text{C}}\text{H} - \text{COOH} + \text{NaOH} \xrightarrow{\text{CaO}} \underset{\text{Propane}}{\text{CH}_3 - \text{CH}_2 - \text{CH}_2} + \text{CO}_2$$

3. (C)  
**Sol.** Corey-house Synthesis –  

$$\text{C}_2\text{H}_5\text{Br} \xrightarrow{\text{(i) 2Li}} \text{C}_2\text{H}_5\text{-Li} + \text{LiBr} \xrightarrow{\text{(ii) CuI}} \text{C}_2\text{H}_5\text{Cu} + \text{LiI}$$
 (Gilman reagent)  

$$\text{C}_2\text{H}_5\text{Cu} + \text{LiI} \xrightarrow{\text{CH}_3\text{Br}} \text{C}_2\text{H}_5\text{CH}_3 + \text{CuBr}$$

4. (D)  
**Sol.** (i)  $\text{R-NH}_2 + \text{RMgX} \longrightarrow \text{R-R} + \text{Mg(X)NH}_2$   
 (ii)  $\text{R-OH} + \text{RMgX} \longrightarrow \text{R-R} + \text{Mg(OH)X}$   
 (iii)  $\text{HC} \equiv \text{CH}$

5. (A)  
**Sol.** 
$$\text{CH}_3 - \underset{\text{CH}_3}{\text{C}}\text{H} - \text{CH}_2\text{MgI} + \text{H}_2\text{O} \longrightarrow \text{CH}_3 - \underset{\text{CH}_3}{\text{C}}\text{H} - \text{CH}_3 + \text{Mg(OH)I}$$

6. (A)

**Sol.** 
$$\text{R-X} \xrightarrow{\text{Zn-Cu}} \text{R-H}$$
  

$$\text{R-OH} \xrightarrow{\text{Zn-Cu}} \text{R-H}$$
  
 Zn-Cu is reducing agent.

7. (B)

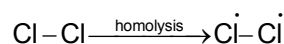
**Sol.** 
$$\text{R-X} \xrightarrow{\text{Red P + HI}} \text{R-R}$$
  

$$\text{R-OH} \xrightarrow{\text{Red P + HI}} \text{R-R}$$
  

$$\text{R}-\underset{\text{O}}{\underset{\parallel}{\text{C}}}-\text{H} \xrightarrow{\text{Red P + HI}} \text{R}-\text{CH}_3$$

8. (C)

**Sol.** Initiation  $\longrightarrow$  In  $\text{Cl}_2$  molecule, homolytic fission is involved, which generates a reactive intermediate.



9. (A)

**Sol.** A positive reaction of n-Butane is possible with the reagent  $\text{F}_2$  in the dark.

10. (A)

**Sol.** 
$$\text{H}_3\text{C}-\underset{\text{CH}_3}{\overset{\text{H}}{\text{C}}}-\underset{\text{H}}{\overset{\text{H}}{\text{C}}}-\text{CH}_3 \xrightarrow{\text{Cl}_2} \text{CH}_3-\underset{\text{CH}_3}{\overset{\text{Cl}}{\text{C}}}-\text{CH}_2-\text{CH}_3$$

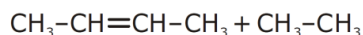
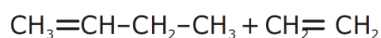
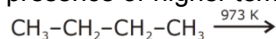
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{CH}_3-\text{C}-\text{Cl} \\ | \\ \text{CH}_3 \end{array}$$

$$|$$

$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{Cl}-\text{C}-\text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$$

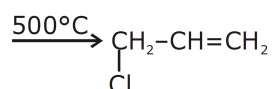
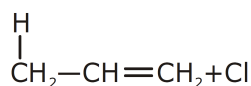
Two enantiomers are possible.

11. (D)  
**Sol.** Pyrolysis — higher molecular mass of hydrocarbon are breakdown into lower molecular mass of hydrocarbon in the presence of higher temperature.



12. (A)

**Sol.**



13. (A)

**Sol.**

When alkane react with  $\text{SO}_2$  and  $\text{Cl}_2$  in presence of UV light then Alkyl Sulphonyl chloride are formed.

14. (D)

**Sol.**

Pyrolysis is the thermal decomposition of alkane in the absence of oxygen. In process higher alkane is breakdown into lower alkane at higher temperature.

15. (C)

**Sol.**

Alkene can be formed by carbonium by elimination of proton. The strong base abstract hydrogen then form carbonium ion.

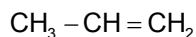
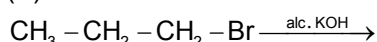
16. (B)

**Sol.**

A carbocation undergoes following reactions except rearrangement to form a less stable carbocation.

17. (B)

**Sol.**



Alc. KOH is strong base, so it will lead to elimination reaction. This process is known as Dehydrohalogenation.

18. (B)

**Sol.**

Any peroxide can be used as catalyst in Kharasch reaction or Anti Markovnikov's rule or peroxide effect.

19. (A)

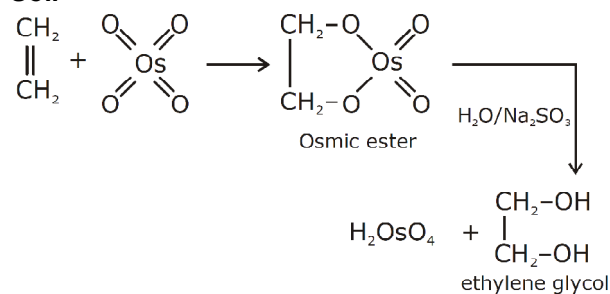
**Sol.**

Baeyer's reagent is Alkaline permanganate solution.



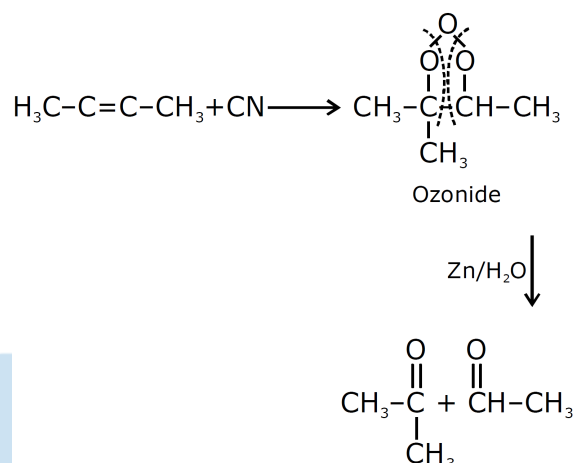
20. (C)

**Sol.**



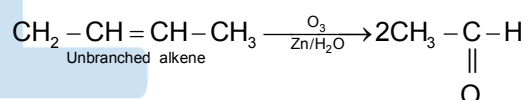
21. (C)

**Sol.**



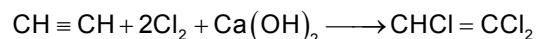
22. (B)

**Sol.**



23. (C)

**Sol.**



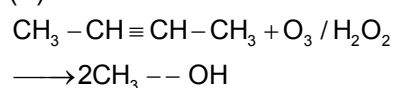
24. (B)

**Sol.**

Reaction of alkenes and alkynes with HOCl and is called Chlorohydroxylation.

25. (B)

**Sol.**



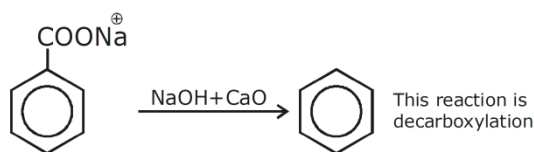
26. (D)

**Sol.**

1-Butyne form white precipitate with Tollen's reagent 2-Butyne not form white precipitate with Tollen's reagent due to no presence of acidic H-atom.

27. (D)

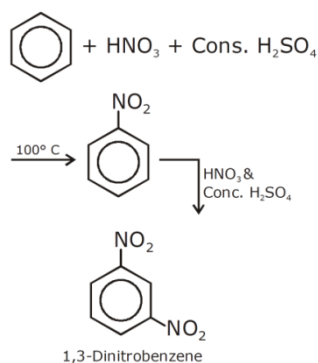
Sol.



Heating a mixture of sodium benzoate and soda lime gives benzene.

28. (B)

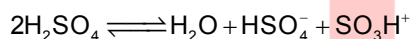
Sol.



—NO<sub>2</sub> is electron withdrawing group. It is also meta-directing group.

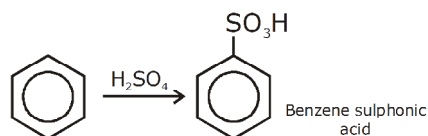
29. (A)

Sol. Formation of electrophile in sulphonation is a reversible process.



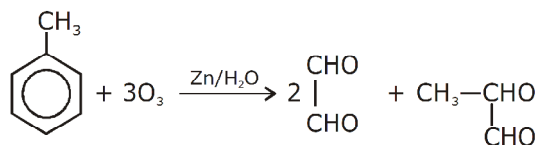
30. (B)

Sol.



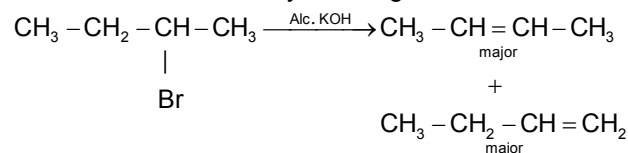
31. (C)

Sol.



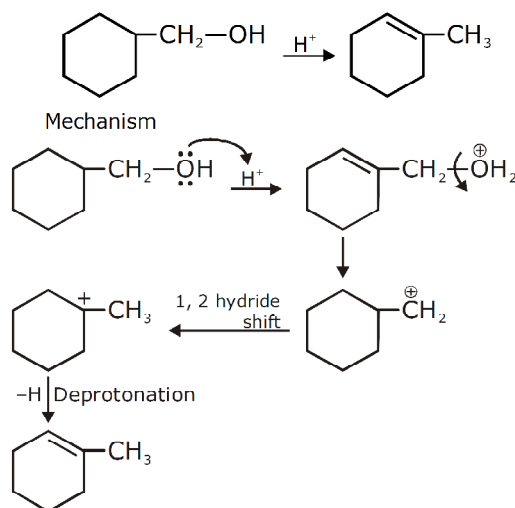
32. (C)

Sol. sec-Butyl bromide gives a mixture of alkenes on dehydrohalogenation



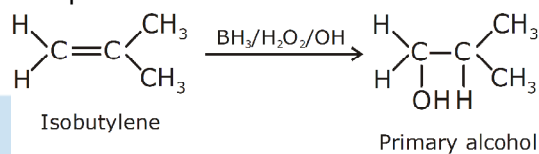
33. (C)

Sol.



34. (A)

Sol. Hydroboration oxidation reaction take place via Anti-Markovnikov's rule.



35. (A)

Sol. The pH of solution in Kolbe's electrolysis increase with time.

### SECTION-B

36. (C)

Sol.  $\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3$   
2-Butene

→ Can exist in cis and trans form.

37. (C)

Sol. Nitration of benzene is a electrophilic substitution reaction.

38. (C)

Sol. Boiling Point  $\propto \frac{1}{\text{Branching}}$

39. (D)

Sol.  $\text{CH}_2 = \text{CH} - \text{CH}_3 > \text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3$   
 $\alpha\text{H} = 3 \quad \alpha\text{H} = 3$   
 $\text{CH}_3 - \text{C} = \text{C} - \text{CH}_3$   
 $\quad \quad \quad | \quad |$   
 $\quad \quad \quad \text{CH}_3 \text{CH}_3$   
 $> \quad \quad \quad \alpha\text{H} = 9$

40. (A)

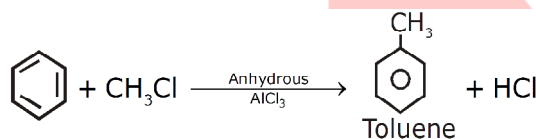
**Sol.** Benzene molecule is unsaturated but it does not undergo electrophilic addition reaction because saturating the carbon-carbon bonds destroys the delocalised pi electron cloud and as we know that this delocalised pi structure is very stable due to which benzene does not decolourises bromine water.

41. (D)

**Sol.** Ozonolysis is the cleavage of an alkene or alkyne with ozone to form organic compound in which the multiple carbon-carbon bond cleaves to give corresponding carbonyl compounds. Both benzene and acetylene gives glyoxal on reductive ozonolysis. The ozonolysis of benzene form glyoxal through the formation of benzene triozonide as intermediate.

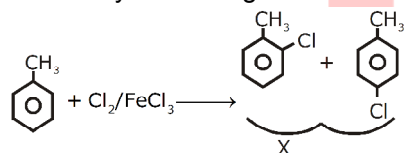
42. (D)

**Sol.** Benzene reacts with  $\text{CH}_3\text{Cl}$  in presence of anhydrous  $\text{AlCl}_3$  to gives Toluene. This is electrophilic aromatic substitution reaction.



43. (C)

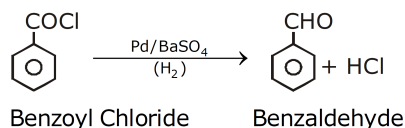
**Sol.** The reaction of  $\text{Cl}_2$  presence of  $\text{FeCl}_3$  with benzene yields a ring substitution product



In presence of sunlight, free radical reaction takes place.

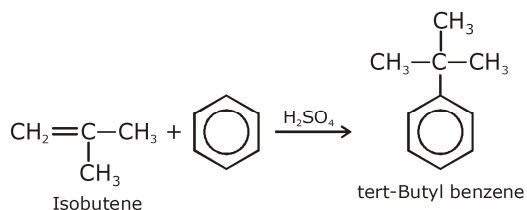
44. (B)

**Sol.**



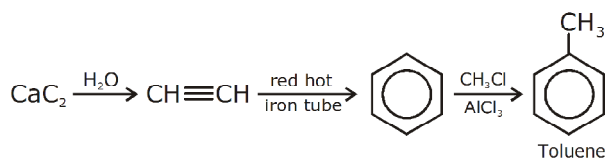
45. (B)

**Sol.**



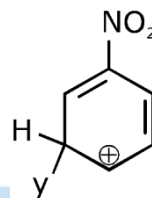
46. (C)

**Sol.**



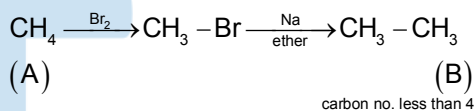
47. (A)

**Sol.**



48. (D)

**Sol.**



49. (C)

**Sol.** Oxide of nitrogen  $\text{N}_2\text{O}_5$  is not a common pollutant introduced into the atmosphere both due to nature and human activity.

50. (D)

**Sol.**

