

**NEET ANSWER KEY & SOLUTIONS**

**SUBJECT :- CHEMISTRY**

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

**PAPER CODE :- CWT-9**

**CHAPTER :- GOC**

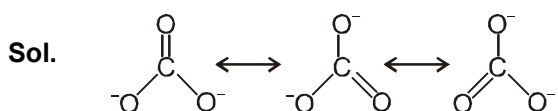
**ANSWER KEY**

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

**SOLUTIONS**

**SECTION-A**

1. (C)



Equivalent resonating structures thus all bonds have equal bond lengths.

2. (B)

Sol. Number of  $\alpha$  - hydrogens

3. (C)

Sol. In structure II, both the rings are aromatic hence II is most stable structure but in structure III, both rings are antiaromatic, hence structure III is least stable structure.

4. (C)

Sol. More stable resonating structure contribute more towards resonance hybrid.

5. (C)

Sol. Carbocations, carbonions, free radicals and radical cations are  $sp^2$ ,  $sp^3$ ,  $sp^2$  and  $sp$  hybrid respectively.

6. (A)

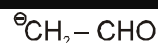
Sol. Order of radical stability :  
Resonance > Hyperconjugation  
> +Inductive effect

7. (C)

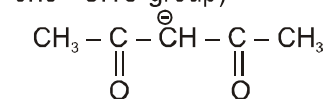
Sol. On the basis of stability of conjugate base due to electronic effects.

8. (C)

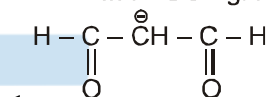
Sol.  $-\text{CHO} > \text{---} \overset{\text{O}}{\parallel}{\text{C}} \text{---}$



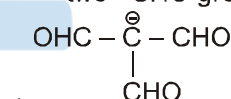
(-M effect of one -CHO group)



< (-M effect of two -CO- group)

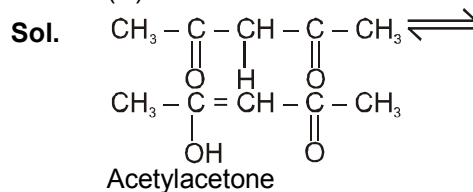


< (-M effect of two -CHO group)



< (-M effect of three -CHO group)

9. (C)



10. (C)

Sol. (C)

Phthalic acid is stronger acid due to intramolecular hydrogen bonding.

(D)

Salicylic acid is stronger acid due to intramolecular H-bonding.

11. (B)  
**Sol.** Compound (I) : N is  $sp^2$  hybrid and lone pair of N is localised.  
 Compound (II) : N is  $sp^2$  hybrid and lone pair of N is delocalised.  
 Compound (III) : N is  $sp^3$  hybrid  
 Compound (IV) : N is  $sp^3$  hybrid and -I effect of oxygen atom.  
 Hence,  $K_b : III > IV > I > II$ .

12. (D)  
**Sol.** Dissociation energy  $\propto$   

$$\frac{1}{\text{stability of free radical}}$$

13. (B)  
**Sol.** X and Y are tautomers.

14. (C)  
**Sol.** As per the definition.

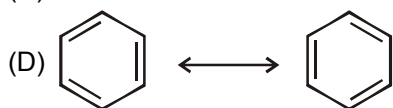
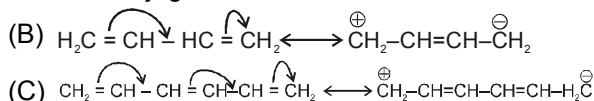
15. (D)  
**Sol.**  $\begin{array}{c} \text{O} \\ || \\ \text{C} \end{array}$  shows -I effect, so correct direction of I effect is  $\text{CH}_3 \rightarrow \text{C} \leftarrow \text{CH}_2 \leftarrow \text{CH}_3$   

$$\begin{array}{c} \text{O} \\ || \\ \text{C} \end{array}$$

16. (D)  
**Sol.** Dipole moment increases with electron withdrawing nature (-I) of groups.

17. (B)  
**Sol.** Due to presence of conjugated system.

18. (A)  
**Sol.** (A)  $\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3$  only hyper conjugation



19. (D)  
**Sol.** 7 including the given structure in which every C will receive a positive charge.

20. (A)  
**Sol.** a is least stable since charge separation is done and +ve charge is towards -m group. d is most stable due to no charge separation and more linearly conjugation.

21. (A)  
**Sol.**  $\text{CH}_2 = \text{CH} - \ddot{\text{Cl}} : \longleftrightarrow \overset{\ominus}{\text{C}}\text{H}_2 - \text{CH} = \overset{\oplus}{\text{C}}\text{Cl} : \longleftrightarrow$   

$$\overset{\oplus}{\text{C}}\text{H}_2 - \text{CH} = \overset{\ominus}{\text{C}}\text{Cl} :$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 8e^- & 8e^- & 8e^- \\ & \text{(I)} & \end{array}$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 8e^- & 8e^- & 8e^- \\ & \text{(II)} & \end{array}$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 6e^- & 8e^- & 10e^- \\ & \text{(III)} & \end{array}$$
 (I > II > III)

22. (C)  
**Sol.**  $-\text{NO}_2 > -\text{CN} > -\text{CHO} > -\text{COOH}$ .

23. (B)  
**Sol.** For showing hyperconjugation there must be minimum of 1  $\alpha$ -hydrogen atom to  $sp^2$  hybridized carbon in  
 Which is only possible in toluene.

24. (B)  
**Sol.** Heat of hydrogenation  $\propto$   

$$\frac{1}{\text{stability of alkene}}$$
 (III & IV have both resonance and hyperconjugation where as I and II have only hyperconjugation.)

25. (B)  
**Sol.** Here the lone pair present over nitrogen atom is involved in conjugation thus is  $sp^2$  hybridized.

26. (B)  
**Sol.** contain 10  $\pi$  electrons.  
 Azulene is a dipolar ion and has both rings aromatic in its ionic form.

27. (D)  
**Sol.** More electronegative atom release  $\text{H}^+$  ion easily.

28. (C)  
**Sol.** The geometry of a methyl carbocation and methyl carbanion is likely to be respectively planar & tetrahedral

29. (A)  
Sol. Carbocation stability is depends upon +I effect and hyperconjugation.

30. (C)  
Sol. Aromatic carbocation is more stable than resonance stabilised carbocation and generally simple carbocation is less stable than resonance stabilised carbocation.

31. (D)  
Sol.   
destabilising factor for carbanion [+M > +I]

32. (D)  
Sol.   
 $\alpha$ -H atom is present which undergo enolisation.

33. (A)  
Sol.   
Acetone (ketoform)   
Enol form   
9  $\sigma$  bonds; 1  $\pi$  bonds and 2 lonepairs.

34. (D)  
Sol.  $\text{PhSO}_3\text{H} > \text{PhCO}_2\text{H} > \text{PhOH} > \text{PhCH}_2\text{OH}$ .

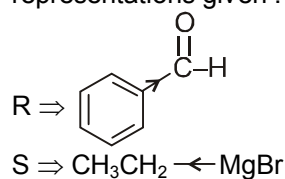
35. (A)  
Sol. Due to ortho effect ortho substituted benzoic acid is stronger acid than its other isomers as well as benzoic acid.

### SECTION-B

36. (B)  
Sol. (i) Not feasible  
(ii) Feasible  
(iii) Not Feasible  
(iv) Not Feasible

37. (A)  
Sol.  $(\text{CH}_3)_3\text{N} > (\text{CH}_3)_2\text{NH} > \text{CH}_3\text{NH}_2 > \text{NH}_3$   
In gas phase only I effect (electronic effect) operates.

38. (D)  
Sol. Correct representation for incorrect representations given :



39. (D)  
Sol. More electronegative atom having -ve charge and more electropositive having +ve charge.

40. (C)  
Sol.  $-\text{CHO} \rightarrow -I ; -m$   
 $-\text{NO}_2 \rightarrow -I ; -m$   
 $-\text{Cl} \rightarrow -I ; +m$   
 $-\text{CH}_3 \rightarrow +I ; \text{hyperconjugation}$ .

41. (C)  
Sol. Conjugate base of maleic acid is stabilised by intramolecular H-bonding. No intramolecular H-bonding in conjugate base of fumaric acid.

42. (B)  
Sol. Due to + M effect of - OH group and hyperconjugation of - CH<sub>3</sub> group

43. (A)  
Sol. Bond length is internuclear distance between two covalently bonded atom in a molecule.

44. (A)  
Sol. Acetyl acetone is liquid and exist mainly as III due to intramolecular H-bonding and the correct answer is III > II > I. However in aqueous medium, the correct answer is II > III > I.

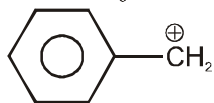
45. (D)  
Sol. 18  $\sigma$  and 2 $\pi$  bonds in both keto and enol form of ethyl acetoacetate.

46. (B)  
Sol. Hyperconjugation possible in   
due to presence of  $\alpha$ -H

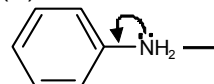
47. (B)  
Sol.  $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_2-\text{Cl}$   
 $\longrightarrow \text{CH}_3-\text{CH}=\text{CH}-\overset{\oplus}{\text{C}}\text{H}_2$   
 $\longrightarrow \overset{\oplus}{\text{C}}\text{H}_3-\text{CH}=\text{CH}_2$

48. (B)

Sol.  $\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{CH}_3}{\text{C}}^{\oplus}}$  is less stable than



49. (B)

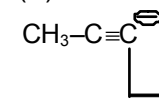
Sol.  → Delocalised lone pair

of nitrogen atom with Benzene ring in aryl amine aryl amine

$\overset{\cdot\cdot}{\text{R}}\text{NH}_2$  → lone pair of electrons of nitrogen atom are not delocalized in alkyl amine.

(Alkyl amine)

50. (A)

Sol.  → sp hybridisation

Steric Number ( $1\sigma + 1 -ve$  charge) → sp

PE