

Based on Latest  
**NCERT | NEET** Syllabus &  
**NTA** Guidelines



For  
**NEET**  
**2025**

CHAPTERWISE - TOPICWISE

# DPP

**DAILY PRACTICE PAPERS**

with Separate Solution Booklet

# NEET CHEMISTRY

CLASS XI & XII



Scoring Grid	DAILY PRACTICE PROBLEM DPP CHAPTERWISE CCO4 -CHEMISTRY			
	Total Questions	45	Total Marks	180
	Attempted		Correct	
	Incorrect		Net Score	
	Cut-off Score	45	Qualifying Score	60
	Success Gap = Net Score – Qualifying Score			
	Net Score = (Correct × 4) – (Incorrect × 1)			



# Contents

Class  
XI

1. Some Basic Concepts of Chemistry
2. Structure of Atom
3. Classification of Elements and Periodicity in Properties
4. Chemical Bonding and Molecular Structure
5. Thermodynamics
6. Equilibrium
7. Redox Reactions
8. Organic Chemistry - Some Basic Principles and Techniques
9. Hydrocarbons

# Contents

Class  
XII

1. Solutions
  2. Electrochemistry
  3. Chemical Kinetics.
  4. The d-and f-Block Elements.
  5. Coordination Compounds
  6. Haloalkanes and Haloarenes
  7. Alcohols, Phenols and Ethers
  8. Aldehydes, Ketones and Carboxylic Acids
  9. Amines
  10. Biomolecules
- "B. Principles Related to Practical Chemistry

# DPP - Daily Practice Problems

## Chapter-wise Sheets

Date :  Start Time :  End Time :

# CHEMISTRY (CC04)

SYLLABUS : Chemical bonding and Molecular Structure

Max. Marks : 180

Marking Scheme : + 4 for correct & (-1) for incorrect

Time : 60 min.

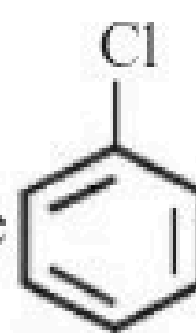
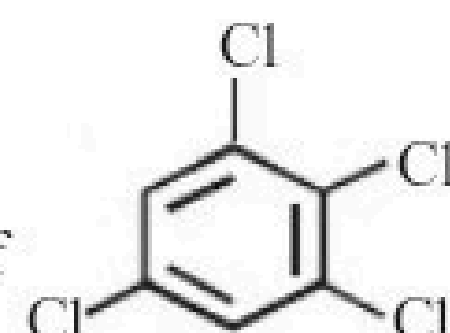
**INSTRUCTIONS** : This Daily Practice Problem Sheet contains 45 MCQ's. For each question only one option is correct. Darken the correct circle/ bubble in the Response Grid provided on each page.

- The electronic configuration of metal M is  $1s^2 2s^2 2p^6 3s^1$ . The formula of its oxide will be  
(a) MO (b)  $M_2O$   
(c)  $SO_3$  (d) All of these
- Which of the following does not contain coordinate bond ?  
(a)  $BH_4^-$  (b)  $NH_4^+$   
(c)  $CO_3^{2-}$  (d)  $H_3O^+$
- Which of the following statements is incorrect ?  
(a) The formation of ionic compounds depend upon the ease of formation of the positive and negative ions from the respective neutral atoms.  
(b) Formation of ionic compounds depend upon arrangement of the positive and negative ions in the solid.  
(c) Formation of positive ion involves addition of electron(s) while that of negative ion involves removal of electron(s).  
(d) None of these
- Hybridisation of the underline atom changes in:  
(a)  $\underline{A}lH_3$  changes to  $AlH_4^-$   
(b)  $H_2\underline{O}$  changes to  $H_3O^+$   
(c)  $\underline{N}H_3$  changes to  $NH_4^+$   
(d) in all cases
- The decreasing values of bond angles from  $NH_3$  ( $106^\circ$ ) to  $SbH_3$  ( $101^\circ$ ) down group-15 of the periodic table is due to  
(a) decreasing lp-bp repulsion  
(b) decreasing electronegativity  
(c) increasing bp-bp repulsion  
(d) increasing p-orbital character in  $sp^3$
- In  $PO_4^{3-}$ , the formal charge on each oxygen atom and the P - O bond order respectively are  
(a) -0.75, 0.6 (b) -0.75, 1.0  
(c) -0.75, 1.25 (d) -3, 1.25
- KF combines with HF to form  $KHF_2$ . The compound contains the species  
(a)  $K^+$ ,  $F^-$  and  $H^+$  (b)  $K^+$ ,  $F^-$  and HF  
(c)  $K^+$ , and  $[HF_2]^-$  (b)  $[KHF]^+$  and  $F_2$

RESPONSE  
GRID

1. (a) (b) (c) (d) 2. (a) (b) (c) (d) 3. (a) (b) (c) (d) 4. (a) (b) (c) (d) 5. (a) (b) (c) (d)  
6. (a) (b) (c) (d) 7. (a) (b) (c) (d)

Space for Rough Work

8. An ether is more volatile than an alcohol having the same molecular formula. This is due to  
 (a) dipolar character of ethers  
 (b) alcohols having resonance structures  
 (c) inter-molecular hydrogen bonding in ethers  
 (d) inter-molecular hydrogen bonding in alcohols
9. In which of the following ionization processes, the bond order has increased and the magnetic behaviour has changed?  
 (a)  $N_2 \rightarrow N_2^+$  (b)  $C_2 \rightarrow C_2^+$   
 (c)  $NO \rightarrow NO^+$  (d)  $O_2 \rightarrow O_2^+$
10. The maximum number of  $90^\circ$  angles between bond pair-bond pair of electrons is observed in  
 (a)  $dsp^2$  hybridization (b)  $sp^3d$  hybridization  
 (c)  $dsp^3$  hybridization (d)  $sp^3d^2$  hybridization
11. Two ice cubes are pressed over each other until they unite to form one block. Which one of the following forces dominate for holding them together?  
 (a) Dipole-dipole interaction  
 (b) Van der waals' forces  
 (c) Hydrogen bond formation  
 (d) Covalent attraction
12. In  $XeF_2$ ,  $XeF_4$  and  $XeF_6$ , the number of lone pairs on Xe are respectively  
 (a) 2, 3, 1 (b) 1, 2, 3  
 (c) 4, 1, 2 (d) 3, 2, 1
13. The hybridization of atomic orbitals of nitrogen in  $NO_2^+$ ,  $NO_2^-$  and  $NH_4^+$  are  
 (a)  $sp^2$ ,  $sp^3$  and  $sp^2$  respectively  
 (b)  $sp$ ,  $sp^2$  and  $sp^3$  respectively  
 (c)  $sp^2$ ,  $sp$  and  $sp^3$  respectively  
 (d)  $sp^2$ ,  $sp^3$  and  $sp$  respectively
14. Match Column-I with Column-II and Column-III and choose the correct option from the given codes.
- | Column-I<br>Molecule | Column-II<br>(No. of lone pairs and bond pairs) | Column-III<br>(Shape of molecule) |
|----------------------|---|-----------------------------------|
| (A) $NH_3$           | (i) 1, 2  | (p) Bent                          |
| (B) $SO_2$           | (ii) 1, 4                                       | (q) Trigonal pyramidal            |
| (C) $SF_4$           | (iii) 2, 3                                      | (r) T-shape                       |
| (D) $ClF_3$          | (iv) 1, 3                                       | (s) See-Saw                       |
- (a) A – (iv, q); B – (ii, p); C – (i, r); D – (iii, s)  
 (b) A – (iv, q); B – (i, p); C – (ii, s); D – (iii, r)  
 (c) A – (i, p); B – (iii, s); C – (iv, r); D – (ii, q)  
 (d) A – (iv, p); B – (i, r); C – (iii, q); D – (ii, s)
15. Which of the following statements is/are not correct for combination of atomic orbitals?  
 (i) The combining atomic orbitals must have the same or nearly the same energy.  
 (ii) Greater the extent of overlap, the greater will be the electron density between the nuclei of a molecular orbital.  
 (iii)  $2p_z$  orbital of one atom can combine with either of  $2p_x$ ,  $2p_y$  or  $2p_z$  orbital of other atom as these orbitals have same energy.  
 (a) (i) and (ii) (b) (iii) only  
 (c) (i) only (d) (ii) and (iii)
16. Which of the following is the correct increasing order of lone pair of electrons on the central atom?  
 (a)  $IF_7 < IF_5 < ClF_3 < XeF_2$   
 (b)  $IF_7 < XeF_2 < ClF_2 < IF_5$   
 (c)  $IF_7 < ClF_3 < XeF_2 < IF_5$   
 (d)  $IF_7 < XeF_2 < IF_5 < ClF_3$
17. The dipole moment of chlorobenzene  is 1.5 D.
- The dipole moment of  is  
 (a) 2.86 D (b) 2.25 D  
 (c) 1.5 D (d) 0 D
18. In compounds of type  $ECl_3$ , where E = B, P, As or Bi, the angles Cl - E - Cl for different E are in the order.  
 (a)  $B > P = As = Bi$  (b)  $B > P > As > Bi$   
 (c)  $B < P = As = Bi$  (d)  $B < P < As < Bi$
19. Which of the following substances has the greatest ionic character?  
 (a)  $Cl_2O$  (b)  $NCl_3$   
 (c)  $PbCl_2$  (d)  $BaCl_2$

**RESPONSE  
GRID**

- |                     |                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| 8. (a) (b) (c) (d)  | 9. (a) (b) (c) (d)  | 10. (a) (b) (c) (d) | 11. (a) (b) (c) (d) | 12. (a) (b) (c) (d) |
| 13. (a) (b) (c) (d) | 14. (a) (b) (c) (d) | 15. (a) (b) (c) (d) | 16. (a) (b) (c) (d) | 17. (a) (b) (c) (d) |
| 18. (a) (b) (c) (d) | 19. (a) (b) (c) (d) |                     |                     |                     |

Space for Rough Work

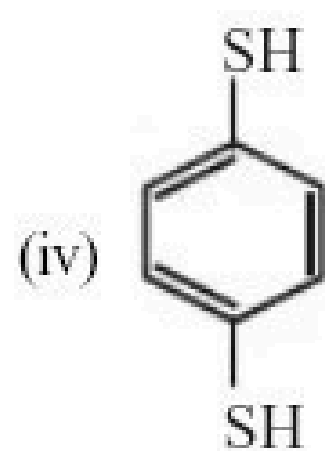
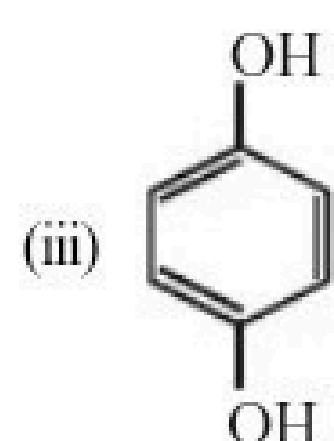
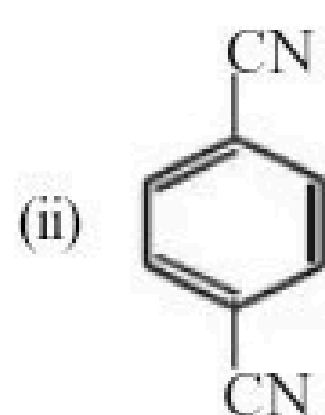
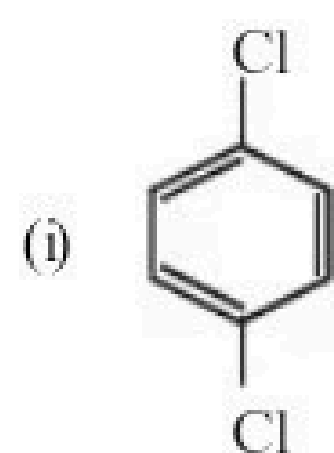
20. If an organic compound contain 92.3% C and 7.7% H, then number of  $sp^3$ ,  $sp^2$  and  $sp$  hybridized carbon atoms in all possible structures of compound respectively are (molecular mass = 52 g/mol)  
 (a) 1, 2, 5 (b) 0, 4, 4  
 (c) 0, 8, 4 (d) None of these
21. Which of the following are isoelectronic and isostructural?  
 $NO_3^-$ ,  $CO_3^{2-}$ ,  $ClO_3^-$ ,  $SO_3$   
 (a)  $NO_3^-$ ,  $CO_3^{2-}$  (b)  $SO_3$ ,  $NO_3^-$   
 (c)  $ClO_3^-$ ,  $CO_3^{2-}$  (d)  $CO_3^{2-}$ ,  $SO_3$
22. Consider the chemical species  $NO_3^-$ ,  $NO_2^+$  and  $NO_2^-$  and point out the correct statement given below  
 (a) The hybrid state of N in  $NO_2^+$  is  $sp^2$   
 (b) The hybrid state of N in all the species is the same  
 (c) The shape of both  $NO_2^+$  and  $NO_2^-$  is bent while  $NO_3^-$  is planar  
 (d) The hybrid state of N in  $NO_3^-$  and  $NO_2^-$  is the same
23. Bond order normally gives idea of stability of a molecular species. All the molecules viz.  $H_2$ ,  $Li_2$  and  $B_2$  have the same bond order yet they are not equally stable. Their stability order is  
 (a)  $H_2 > B_2 > Li_2$  (b)  $Li_2 > H_2 > B_2$   
 (c)  $Li_2 > B_2 > H_2$  (d)  $H_2 > Li_2 > B_2$
24.  ${}_1H^2 + {}_1H^2 \longrightarrow {}_2He^3 + {}_0n^1$   
 The above nuclear reaction is called  
 (a) nuclear fission  
 (b) nuclear fusion  
 (c) artificial transmutation  
 (d) spontaneous disintegration
25. Hydrogen chloride molecule contains  
 (a) polar covalent bond (b) double bond  
 (c) co-ordinate bond (d) electrovalent bond
26. Among the following species, identify the isostructural pairs  
 $NF_3$ ,  $NO_3^-$ ,  $BF_3$ ,  $H_3O^+$ ,  $HN_3$   
 (a)  $[NF_3, NO_3^-]$  and  $[BF_3, H_3O^+]$   
 (b)  $[NF_3, HN_3]$  and  $[NO_3^-, BF_3]$   
 (c)  $[NF_3, H_3O^+]$  and  $[NO_3^-, BF_3]$   
 (d)  $[NF_3, H_3O^+]$  and  $[HN_3, BF_3]$
27. In the anion  $HCOO^-$  the two carbon - oxygen bonds are found to be of equal length. What is the reason for it?  
 (a) Electronic orbitals of carbon atom are hybridised  
 (b) The C=O bond is weaker than the C-O bond  
 (c) The anion  $HCOO^-$  has two resonating structures  
 (d) The anion is obtained by removal of a proton from the acid molecule
28. Which of the following is/are not essential condition(s) for hybridisation?  
 (i) The orbitals present in the valence shell of the atom are hybridised.  
 (ii) The orbitals undergoing hybridisation should have almost equal energy.  
 (iii) Promotion of electron is essential prior to hybridisation  
 (iv) Only half filled orbitals participate in hybridisation.  
 (a) (i) only (b) (iii) only  
 (c) (iv) only (d) (iii) and (iv)
29. The molecule  $XY_2$  contains two  $\sigma$  and two  $\pi$  bonds and one lone pair of electrons in valence shell of X. The arrangement of lone pair and bond pairs is  
 (a) linear (b) trigonal planar  
 (c) square pyramidal (d) unpredictable
30. The molecules  $BF_3$  and  $NF_3$  are both covalent compounds, but  $BF_3$  is non polar whereas  $NF_3$  is polar. The reason for this is  
 (a) atomic size of boron is larger than nitrogen  
 (b) Boron is metal while nitrogen is gas  
 (c) B-F bonds are non-polar while N-F bonds are polar  
 (d)  $BF_3$  is planar but  $NF_3$  is pyramidal
31. Amongst  $LiCl$ ,  $RbCl$ ,  $BeCl_2$  and  $MgCl_2$  the compounds with the greatest and the least ionic character, respectively are:  
 (a)  $LiCl$  and  $RbCl$  (b)  $RbCl$  and  $BeCl_2$   
 (c)  $MgCl_2$  and  $BeCl_2$  (d)  $RbCl$  and  $MgCl_2$
32. Which of the following is the wrong statement?  
 (a)  $ONCl$  and  $ONO^-$  are not isoelectronic.  
 (b)  $O_3$  molecule is bent  
 (c) Ozone is violet-black in solid state  
 (d) Ozone is paramagnetic gas.

**RESPONSE  
GRID**

20. (a) (b) (c) (d)	21. (a) (b) (c) (d)	22. (a) (b) (c) (d)	23. (a) (b) (c) (d)	24. (a) (b) (c) (d)
25. (a) (b) (c) (d)	26. (a) (b) (c) (d)	27. (a) (b) (c) (d)	28. (a) (b) (c) (d)	29. (a) (b) (c) (d)
30. (a) (b) (c) (d)	31. (a) (b) (c) (d)	32. (a) (b) (c) (d)		

Space for Rough Work

33. For which of the following molecule significant  $\mu \neq 0$ ?



- (a) Only (i) (b) (i) and (ii)  
(c) Only (iii) (d) (iii) and (iv)

34. The bond dissociation energy of B – F in  $\text{BF}_3$  is  $646 \text{ kJ mol}^{-1}$  whereas that of C – F in  $\text{CF}_4$  is  $515 \text{ kJ mol}^{-1}$ . The correct reason for higher B – F bond dissociation energy as compared to that of C – F is

- (a) stronger  $\sigma$  bond between B and F in  $\text{BF}_3$  as compared to that between C and F in  $\text{CF}_4$ .  
(b) significant  $p\pi-p\pi$  interaction between B and F in  $\text{BF}_3$  whereas there is no possibility of such interaction between C and F in  $\text{CF}_4$ .  
(c) lower degree of  $p\pi-p\pi$  interaction between B and F in  $\text{BF}_3$  than that between C and F in  $\text{CF}_4$ .  
(d) smaller size of B-atom as compared to that of C-atom.

35. Dipole-induced dipole interactions are present in which of the following pairs :

- (a)  $\text{Cl}_2$  and  $\text{CCl}_4$  (b) HCl and He atoms  
(c)  $\text{SiF}_4$  and He atoms (d)  $\text{H}_2\text{O}$  and alcohol

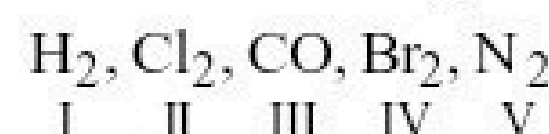
36. The number and type of bonds in  $\text{C}_2^{2-}$  ion in  $\text{CaC}_2$  are:

- (a) One  $\sigma$  bond and one  $\pi$ -bond  
(b) One  $\sigma$  bond and two  $\pi$ -bond  
(c) Two  $\sigma$  bond and two  $\pi$ -bond  
(d) Two  $\sigma$  bond and one  $\pi$ -bond

37. Which of the following methods is used for measuring bond length ?

- (a) X-ray diffraction  
(b) Electron-diffraction  
(c) Spectroscopic techniques  
(d) All of these

38. Which of the following molecules have same bond order ?



Choose the correct option.

- (a) I, II and IV have same bond order  
(b) III and V have same bond order  
(c) Both (a) and (b) are correct  
(d) None of the above

39. Which of the following is/are misconception(s) associated with resonance ?

- (i) The molecule exists for a certain fraction of time in one canonical form and for other fractions of time in other canonical forms.  
(ii) The canonical forms have no real existence.  
(iii) There is no such equilibrium between the canonical forms.  
(a) (i) only (b) (ii) and (iii)  
(c) (i) and (iii) (d) (iii) only.

40. A neutral molecule  $\text{XF}_3$  has a zero dipole moment. The element X is most likely

- (a) chlorine (b) boron  
(c) nitrogen (d) carbon

41. The species having pyramidal shape is :

- (a)  $\text{SO}_3$  (b)  $\text{BrF}_3$  (c)  $\text{SiO}_3^{2-}$  (d)  $\text{OSF}_2$

42. Bond order of 1.5 is shown by :

- (a)  $\text{O}_2^+$  (b)  $\text{O}_2^-$  (c)  $\text{O}_2^{2-}$  (d)  $\text{O}_2$

43. Which one of the following properties is **not** shown by NO?

- (a) It is diamagnetic in gaseous state  
(b) It is neutral oxide  
(c) It combines with oxygen to form nitrogen dioxide  
(d) Its bond order is 2.5

44. The charge/size ratio of a cation determines its polarizing power. Which one of the following sequences represents the increasing order of the polarizing power of the cationic species,  $\text{K}^+$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Be}^{2+}$ ?

- (a)  $\text{Ca}^{2+} < \text{Mg}^{2+} < \text{Be}^{2+} < \text{K}^+$   
(b)  $\text{Mg}^{2+} < \text{Be}^{2+} < \text{K}^+ < \text{Ca}^{2+}$   
(c)  $\text{Be}^{2+} < \text{K}^+ < \text{Ca}^{2+} < \text{Mg}^{2+}$   
(d)  $\text{K}^+ < \text{Ca}^{2+} < \text{Mg}^{2+} < \text{Be}^{2+}$ .

45. In which of the following pairs of molecules/ions, both the species are not likely to exist ?

- (a)  $\text{H}_2^+$ ,  $\text{He}_2^{2-}$  (b)  $\text{H}_2^-$ ,  $\text{He}_2^{2-}$   
(c)  $\text{H}_2^{2+}$ ,  $\text{He}_2$  (d)  $\text{H}_2^-$ ,  $\text{He}_2^{2+}$

**RESPONSE  
GRID**

33. (a) (b) (c) (d)  
38. (a) (b) (c) (d)  
43. (a) (b) (c) (d)

34. (a) (b) (c) (d)  
39. (a) (b) (c) (d)  
44. (a) (b) (c) (d)

35. (a) (b) (c) (d)  
40. (a) (b) (c) (d)  
45. (a) (b) (c) (d)

36. (a) (b) (c) (d)  
41. (a) (b) (c) (d)

37. (a) (b) (c) (d)  
42. (a) (b) (c) (d)

Space for Rough Work