# Yakeen NEET 2.0 2026

## Practice Sheet

## Physical Chemistry By Amit Mahajan Sir

# Some Basic Concept of Chemistry

**Q1** Which of the following contains the highest number of molecules?
(A) 2.8 g of CO
(B) 3.2 g of $CH_4$
(C) 1.7 g of $NH_3$
(D) 3.2 g of $SO_2$

**Q2** An element, $X$ has the following isotopic composition:
$^{200}X : 90\%, \quad ^{199}X : 8.0\%, \quad ^{202}X : 2.0\%.$
The weighted average atomic mass of the naturally occurring element $X$ is closest to:
(A) 201 amu (B) 202 amu
(C) 199 amu (D) 200 amu

**Q3** Percentage of Se in peroxidase anhydrous enzyme is $0.5\%$ by weight (At.wt. = 78.4). Then, minimum gram molecular weight of peroxidase anhydrous enzyme is:
(A) $1.568 \times 10^4$
(B) $1.568 \times 10^3$
(C) $15.68$
(D) $3.136 \times 10^4$

**Q4** 12 L of $H_2$ and 11.2 L of $Cl_2$ are mixed and exploded. The composition by volume of mixture is;
(A) 24 L HCl(g)
(B) 0.8 L $Cl_2(g)$ and 20.8 L HCl(g)
(C) 0.8 L $H_2(g)$ and 22.4 L HCl(g)
(D) 22.4 L HCl(g)

**Q5** The total number of protons, electrons and neutrons in 12 g of $_6C^{12}$ is:
(A) $1.084 \times 10^{25}$
(B) $6.022 \times 10^{23}$
(C) $6.022 \times 10^{22}$
(D) 18

**Q6** How many molecules are present in one gram of hydrogen gas?
(A) $6 \times 10^{23}$
(B) $3 \times 10^{23}$
(C) $2.5 \times 10^{23}$
(D) $1.5 \times 10^{23}$

**Q7** If 1/2 moles of oxygen ($O_2$) combine with aluminium to form $\frac{1}{3}$moles of $Al_2O_3$, then weight of aluminium metal used in the reaction is: (Atomic mass of Al = 27 g/mol)
$4Al(s) + 3O_2(g) \rightarrow 2Al_2O_3(s)$
(A) 27 g (B) 18 g
(C) 54 g (D) 40.5 g

**Q8** Which of the following reactions is **incorrect** according to the law of conservation of mass?
(A) $2\,Mg(s) + O_2(g) \longrightarrow 2\,MgO(s)$
(B) $C_3H_8(g) + O_2(g) \longrightarrow CO_2(g) + H_2O(g)$
(C) $P_4(s) + 5O_2(g) \longrightarrow P_4O_{10}(s)$
(D) $CH_4(g) + 2O_2(g) \longrightarrow CO_2(g) + 2H_2O(g)$

**Q9**

If the concentration of glucose $(C_6H_{12}O_6)$ in blood is $0.9\ g\ L^{-1}$, what will be the molarity of glucose in blood?

(A) $5\ M$ (B) $50\ M$

(C) $0.005\ M$ (D) $0.5\ M$

**Q10** The number of moles of methane required to produce 11g $CO_2$(g) after complete combustion is: (Given molar mass of methane in $g\ mol^{-1}$ : 16)

(A) 0.75 (B) 0.5

(C) 0.35 (D) 0.25

**Q11** The simplest formula of a compound containing $50\%$ of element $X$ (atomic mass $10$ ) and $50\%$ of element $Y$ ( atomic mass $20$ ) is:

(A) $XY$

(B) $X_2Y$

(C) $XY_3$

(D) $X_2Y_3$

**Q12** The molarity of a solution obtained by mixing $750\ mL$ of $0.5\ M\ HCl$ with $250\ mL$ of $2\ M\ HCl$ will be:

(A) $0.875\ M$

(B) $1.00\ M$

(C) $1.75\ M$

(D) $0.0975\ M$

**Q13** Given below are two statement: one is labelled as Assertion (A) and the other is labelled as Reason (R).

**Assertion (A):** The reactant which is present in lesser amount limits the amount of product formed is called limiting reagent.

**Reason (R):** Amount of product formed does not depend upon the amount of reactants taken.

In the light of the above statements, choose the **correct** answer from the options given below.

(A) Both **Assertion (A)** and **Reason (R)** are true and **Reason (R)** is the correct explanation of **Assertion (A)**.

(B) Both **Assertion (A)** and **Reason (R)** are true but **Reason (R)** is not the correct explanation of **Assertion (A)**.

(C) **Assertion (A)** is true and **Reason (R)** is false.

(D) **Assertion (A)** is false and **Reason (R)** is true.

**Q14** 10 g of hydrogen ($H_2$) and 64 g of oxygen ($O_2$) were filled in a steel vessel and exploded. Amount of water ($H_2O$) produced in this reaction would be;

(A) 3 moles (B) 4 moles

(C) 1 mole (D) 2 mol

**Q15** The volume occupied by 10 g of unknown gas having vapour density 2.24 at STP is;

(A) 2.5 L (B) 25 L

(C) 50 L (D) 5 L

**Q16** Significant figures in 0.00051 are

(A) 5 (B) 3

(C) 2 (D) 4

**Q17** Match the mass of elements given in **List-I** with the number of moles given in **List-II** and mark the appropriate choice.

| | List-I | | List-II |
|---|---|---|---|
| A. | 28 g of He | I. | 2 moles |
| B. | 46 g of Na | II. | 7 moles |
| C. | 60 g of Ca | III. | 1 mole |
| D. | 27 g of Al | IV | 1.5 moles |

(A) A-IV, B-III, C-II, D-I

(B) A-I, B-III, C-II, D-IV

(C) A-III, B-II, C-I, D-IV

(D) A-II, B-I, C-IV, D-III

**Q18** Number of gm of oxygen in $32.2\ g\ Na_2SO_4 \cdot 10H_2O$ is

(A) 20.8 (B) 22.4

(C) 2.24 (D) 2.08

**Q19** The number of hydrogen atoms presents in $25.6\ g$ of sucrose $(C_{12}H_{22}O_{11})$ which has a molar mass of $342.3\ g$ is
(A) $22 \times 10^{23}$
(B) $9.91 \times 10^{23}$
(C) $11 \times 10^{23}$
(D) $44 \times 10^{23}$

**Q20** If 40 g of $CaCO_3$ is treated with 40 g of HCl, which of the following reactants will act as limiting reagent?
(A) $CaCO_3$
(B) HCl
(C) Both $CaCO_3$ and HCl
(D) Neither $CaCO_3$ nor HCl

**Q21** Which of the following compounds has maximum percentage of carbon?
(A) $CH_4$ (B) $C_3H_6$
(C) $C_2H_2$ (D) $C_2H_4$

**Q22** $3.011 \times 10^{22}$ molecules are removed from 4000 mg of $CO_2$, then the moles of $CO_2$ left are;
(A) 0.02 (B) 0.04
(C) 0.4 (D) 0.2

**Q23** The normality of a 1 M solution of $H_3PO_4$ is;
(A) 0.5 N (B) 1.0 N
(C) 2.0 N (D) 3.0 N

**Q24** For the given reaction, the moles of CaO required to neutralize 1.42 kg $P_4O_{10}$ is;
$6\ CaO + P_4O_{10} \rightarrow 2\ Ca_3\ (PO_4)_2$
(Molar mass of $P_4O_{10}$ = 284 g/mol)
(A) 24 moles (B) 30 moles
(C) 18 moles (D) 36 moles

**Q25** Which of the following has the maximum number of atoms of oxygen?
(A) 10 mL of $H_2O$(L)
(B) 0.1 moles of $V_2O_5$
(C) 12 g $O_3$(g)
(D) $12.044 \times 10^{23}$ molecules of $CO_2$

**Q26** Given below are two statements:
**Statement I:** One atomic mass unit is defined as 1/12 of the mass of one carbon-12 atom.
**Statement II:** Carbon-12 isotope is the most abundant isotope of carbon and has been chosen as standard.
In the light of the above statements, choose the most appropriate answer from the options given below:
(A) Statement I and Statement II both are correct.
(B) Statement I is correct, but Statement II is incorrect.
(C) Statement I is incorrect, but Statement II is correct.
(D) Statement I and Statement II both are incorrect.

**Q27** Equal masses of $O_2$, $H_2$ and $CH_4$ are taken in identical conditions, the ratio of the molar volumes of the gases is;
(A) 16 : 1 : 8 (B) 1 : 16 : 2
(C) 1 : 16 : 8 (D) 2 : 16 : 1

**Q28** Number of molecules in 100 mL of each of $O_2$, $NH_3$ and $CO_2$ at STP are;
(A) in the order $CO_2 < O_2 < NH_3$
(B) in the order $NH_3 < O_2 < CO_2$
(C) all have equal molecules
(D) $NH_3 = CO_2 < O_2$

**Q29** The empirical formula of a compound is $CH_2O$. Its molecular weight is 180 . The molecular formula of compound is
(A) $C_4HO_4$
(B) $C_3H_6O_3$
(C) $C_6H_{12}O_6$
(D) $C_5H_{10}O_5$

**Q30** The number of $Cl^-$ and $Ca^{2+}$ ions in 222 g of $CaCl_2$ are;

(A) 4 $N_A$, 2 $N_A$ (B) 2 $N_A$, 2 $N_A$
(C) 1 $N_A$, 2 $N_A$ (D) 2 $N_A$, 1 $N_A$

**Q31** The total number of electrons in 1.6 g of $CH_4$ to that in 1.8 g of $H_2O$

(A) Double (B) Same
(C) Triple (D) One fourth

**Q32** A gas has a vapour density 11.2. The volume occupied by 1 g of the gas at NTP is:

(A) 1 L (B) 11.2 L
(C) 22.4 L (D) 4 L

**Q33** 3 g of hydrocarbon on combustion with 11.2 g of oxygen produce 8.8 g of $CO_2$ and 5.4 g of $H_2O$. The data illustrate the law of:

(A) conservation of mass
(B) multiple proportions
(C) constant proportions
(D) reciprocal proportions

**Q34** The maximum number of molecules is present in:

(A) 15 L of $H_2$ gas at STP
(B) 5 L of $N_2$ gas at STP
(C) 0.5 g of $H_2$ gas
(D) 10 g of $O_2$ gas

**Q35** Insulin contains 3.4% sulphur. Then, the minimum molecular mass of the insulin is about:

(A) 940 amu (B) 9400 amu
(C) 3600 amu (D) 970 amu

**Q36** 25 g of $MCl_4$ contains 0.5 mol chlorine then its gram molecular mass is:

(A) 100 g $mol^{-1}$ (B) 200 g $mol^{-1}$
(C) 150 g $mol^{-1}$ (D) 400 g $mol^{-1}$

**Q37** An unknown element forms an oxide. What will be the equivalent mass of the element if the oxygen content is 20% by mass?

(A) 16 (B) 32
(C) 8 (D) 64

**Q38** A metal M of equivalent mass E forms an oxide of molecular formula $M_xO_y$. The atomic mass of the metal is given by the correct equation:

(A) 2E(y/x) (B) xyE
(C) E/y (D) y/E

**Q39** A gas mixture contains 50% helium and 50% methane by volume. What is the percentage by mass of methane in the mixture?

(A) 19.97 % (B) 20.05 %
(C) 50 % (D) 80 %

**Q40** The atomic composition of the entire universe is approximately given in the table below:

| Atom | % of total number of atoms |
|---|---|
| H | 93 |
| He | 7 |

what percentage of the universe hydrogen atoms constitute by mass?

(A) 77 % (B) 23 %
(C) 37 % (D) 73 %

**Q41** Which of the following alkanes has 75% of carbon?

(A) $C_2H_6$ (B) $CH_4$
(C) $C_3H_8$ (D) $C_4H_{10}$

**Q42** An organic compound contains 49.30% carbon, 6.84% hydrogen and its vapour density is 73. Molecular formula of the compound is:

(A) $C_3H_8O_2$ (B) $C_3H_{10}O_2$
(C) $C_6H_9O$ (D) $C_6H_{10}O_4$

**Q43** The crystalline salt $Na_2SO_4 .xH_2O$ on heating loses 55.9% of its mass. The formula of crystalline salt is:

(A) $Na_2SO_4.5H_2O$ (B) $Na_2SO_4.7H_2O$
(C) $Na_2SO_4.2H_2O$ (D) $Na_2SO_4.10H_2O$

**Q44** *x* gram of $CaCO_3$ was completely burnt in absence of air. The mass of the solid residue formed is 28 g. What is the value of 'x' in gram?
(A) 44 (B) 200
(C) 150 (D) 50

**Q45** The mass of carbon anode consumed (giving only carbon dioxide) in the production of 270 kg of Al metal from bauxite by Hall process is:
(A) 270 kg (B) 540 kg
(C) 90 kg (D) 180 kg

# Answer Key

| | |
|---|---|
| Q1 | (B) |
| Q2 | (D) |
| Q3 | (A) |
| Q4 | (C) |
| Q5 | (A) |
| Q6 | (B) |
| Q7 | (B) |
| Q8 | (B) |
| Q9 | (C) |
| Q10 | (D) |
| Q11 | (B) |
| Q12 | (A) |
| Q13 | (C) |
| Q14 | (B) |
| Q15 | (C) |
| Q16 | (C) |
| Q17 | (D) |
| Q18 | (B) |
| Q19 | (B) |
| Q20 | (A) |
| Q21 | (C) |
| Q22 | (B) |
| Q23 | (D) |
| Q24 | (B) |
| Q25 | (D) |
| Q26 | (A) |
| Q27 | (B) |
| Q28 | (C) |
| Q29 | (C) |
| Q30 | (A) |
| Q31 | (B) |
| Q32 | (A) |
| Q33 | (A) |
| Q34 | (A) |
| Q35 | (A) |
| Q36 | (B) |
| Q37 | (B) |
| Q38 | (A) |
| Q39 | (D) |
| Q40 | (A) |
| Q41 | (B) |
| Q42 | (D) |
| Q43 | (D) |
| Q44 | (D) |
| Q45 | (C) |