

**SAMPLE CONTENT**

**Bridge Course**



**MCQs Navigator Book**

# MHT-CET CHEMISTRY

FOR STRONG FOUNDATION

- Based on Latest Paper Pattern
- Based on complete syllabus of Std. XI
- Important Formulae & Shortcuts
- Quick Review
- Previous Years' Questions

Includes  
**Authentic  
Questions**  
from Latest  
**MHT-CET  
Examination**

**Std.XI**

**Target** Publications<sup>®</sup> Pvt. Ltd.

**MHT-CET**

**Bridge Course MCQs Navigator**

# CHEMISTRY

Scan the adjacent QR code to download Solutions to Multiple Choice Questions in PDF format.



Printed at: **Print to Print**, Mumbai

© Target Publications Pvt. Ltd.

*No part of this book may be reproduced or transmitted in any form or by any means, C.D. ROM/Audio Video Cassettes or electronic, mechanical including photocopying; recording or by any information storage and retrieval system without permission in writing from the Publisher.*

# CONTENTS

Textbook Chapter No.	Chapter Name	Page No.
1	Some Basic Concepts of Chemistry	
2	Introduction to Analytical Chemistry	
3	Some Analytical Techniques	
4	Structure of Atom	
5	Chemical Bonding	
6	Redox Reactions	
7	Modern Periodic Table	
8	Elements of Group 1 and Group 2	
9	Elements of Groups 13, 14 & 15	
10	States of Matter: Gaseous and Liquid States	
11	Adsorption and Colloids	
12	Chemical Equilibrium	
13	Nuclear Chemistry and Radioactivity	
14	Basic Principles of Organic Chemistry	
15	Hydrocarbons	
16	Chemistry in Everyday Life	
•	MHT-CET 2020 Question Paper	
•	MHT-CET 2021 Question Paper	
•	MHT-CET 2022 Question Paper	
•	MHT-CET 2023 Question Paper	
•	MHT-CET 2024 Question Paper	
•	Answer key	

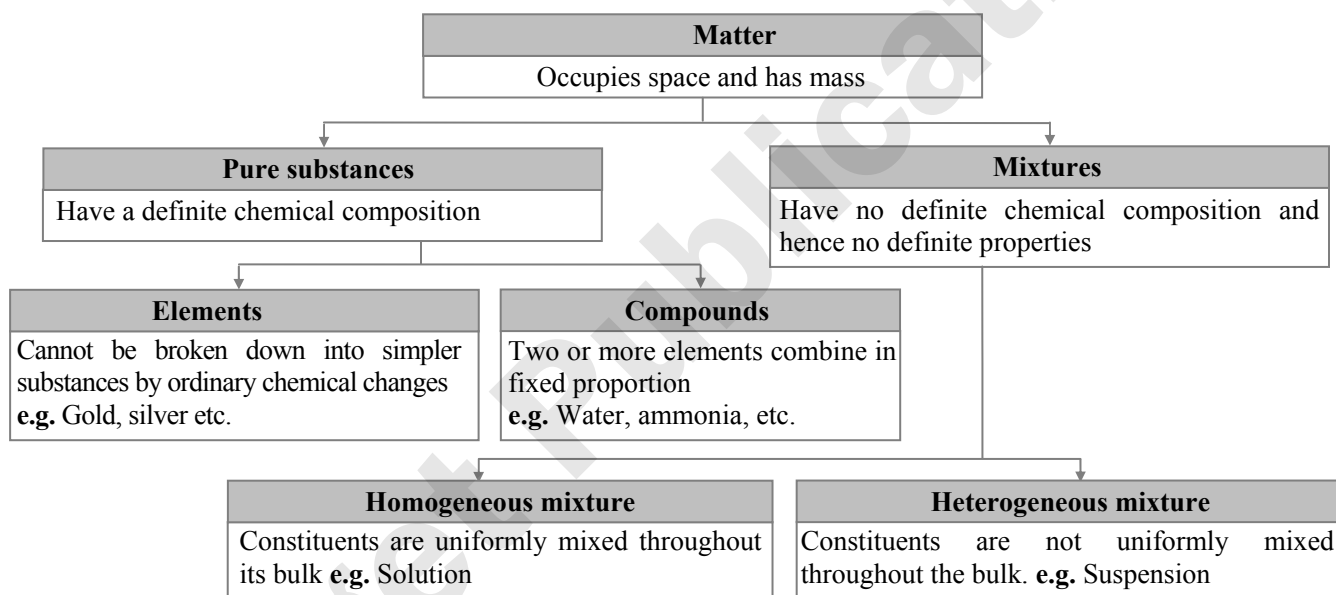
## Subtopics

- Introduction
- Nature of chemistry
- Properties of matter and their measurement
- Laws of chemical combination
- Dalton's atomic theory
- Atomic and molecular masses
- Mole concept and molar mass
- Moles and gases

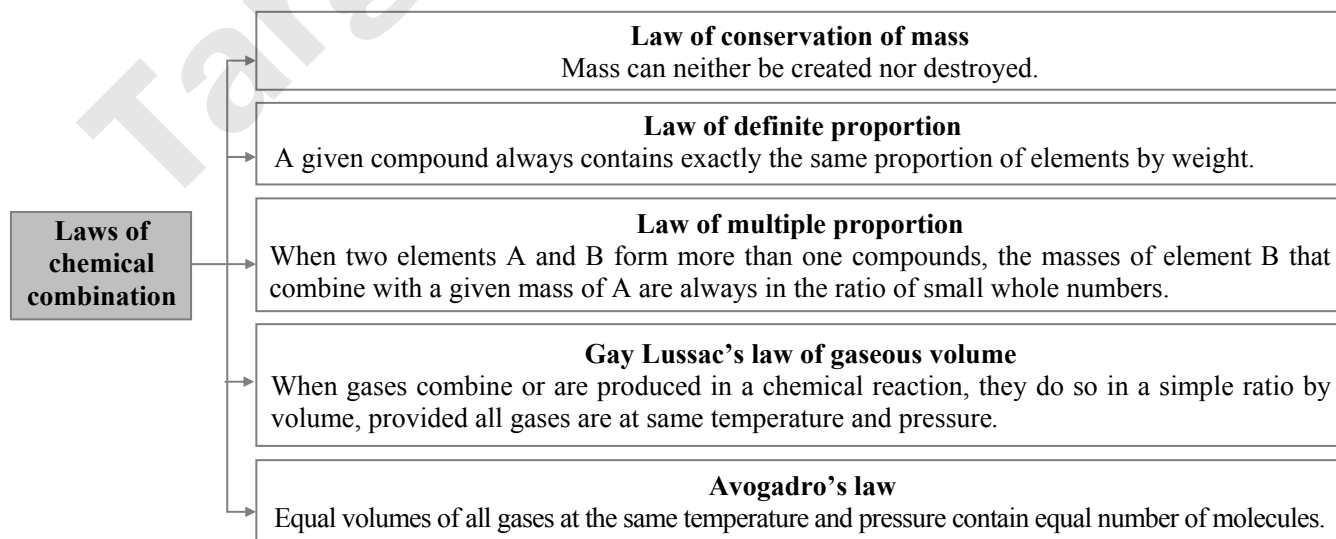


### Quick Review

#### ➤ Classification of matter (On basis of chemical composition):



#### ➤ Laws of chemical combination:





## Formulae

- Celsius to Fahrenheit:  $^{\circ}\text{F} = \frac{9}{5} (^{\circ}\text{C}) + 32$
- Celsius to Kelvin:  $\text{K} = ^{\circ}\text{C} + 273.15$
- Atomic mass unit (1 amu) =  $\frac{1}{12}$  th of a  $^{12}\text{C}$ -atom  
=  $1.66 \times 10^{-27}$  kg
- Average atomic mass  
=  $\frac{\text{Sum of (Isotopic mass} \times \% \text{ Abundance)}}{100}$
- Number of moles (n) =  $\frac{\text{Mass of a substance}}{\text{Molar mass of a substance}}$
- Number of molecules  
= Number of moles  $\times$  Avogadro number  
= Number of moles  $\times 6.022 \times 10^{23}$
- Molar volume of a gas at STP =  $22.4 \text{ dm}^3 \text{ mol}^{-1}$
- Number of moles (n) =  $\frac{\text{Volume of a gas at STP}}{\text{Molar volume of a gas}}$   
=  $\frac{\text{Volume of a gas at STP}}{22.4 \text{ dm}^3 \text{ mol}^{-1}}$

## Introduction

- Chemistry involves the study of \_\_\_\_\_ properties of matter.  
(A) only physical  
(B) only chemical  
(C) both physical and chemical  
(D) neither physical or nor chemical

## Nature of chemistry

- Which of the following is CORRECT for metals?  
(A) They have a shiny appearance.  
(B) They do not conduct heat and electricity.  
(C) They cannot be drawn into wire.  
(D) They are brittle.
- Which of the following is CORRECT for nonmetals?  
(A) They have no lustre.  
(B) They are poor conductors of heat and electricity.  
(C) They cannot be hammered into sheets or drawn into wire  
(D) All of these
- Which of the following statements is INCORRECT?  
(A) Pure substances have a definite chemical composition.  
(B) Composition of a mixture can be varied to any extent.

- (C) Water and table salt are examples of a compound.  
(D) The constituents of a compound can be easily separated by physical methods.

- Which of the following statements is INCORRECT?  
(A) Constituent substances in a mixture retain their separate identities.  
(B) Suspension of an insoluble solid in a liquid is an example of heterogeneous mixture.  
(C) Mixture of any two liquids is an example of homogeneous mixtures.  
(D) Mixtures can be separated into pure components by simple physical methods.
- Which of the following is INCORRECT match?  
(A) Homogeneous mixture: Solution (An aqueous solution of sugar)  
(B) Heterogeneous mixture: Suspension (of sand in water)  
(C) Element: Gold  
(D) Compound: A rusty nail
- Which of the following is(are) CORRECT match(es)?  
(A) Solid: Particles are held tightly in perfect order.  
(B) Liquid: Particles are close to each other but can move around within the liquid.  
(C) Gas: Particles are far apart as compared to that of solid and liquid.  
(D) All of these

## Properties of matter and their measurement

- The revised metric system in which units are expressed is \_\_\_\_\_.  
(A) CGS (B) MKS  
(C) FPS (D) SI
- What is the SI unit of density?  
[MHT CET 2018]  
(A)  $\text{g cm}^{-3}$  (B)  $\text{g m}^{-3}$   
(C)  $\text{kg m}^{-3}$  (D)  $\text{kg cm}^{-3}$
- Which of the following relations for expressing volume of a sample is INCORRECT?  
(A)  $1 \text{ L} = 10^3 \text{ mL}$  (B)  $1 \text{ dm}^3 = 1 \text{ L}$   
(C)  $1 \text{ L} = 10^3 \text{ m}^3$  (D)  $1 \text{ L} = 10^3 \text{ cm}^3$
- Identify the CORRECT statement.  
(A) The mass of a body varies as its position changes.  
(B) The SI unit of length is centimetre.  
(C) A burette is used to prepare a known volume of a solution.  
(D) The mass of a body is more fundamental property than its weight.



12. Convert  $40^{\circ}\text{C}$  temperature to degree Fahrenheit.  
(A)  $104^{\circ}\text{F}$  (B)  $86^{\circ}\text{F}$   
(C)  $313^{\circ}\text{F}$  (D)  $233^{\circ}\text{F}$
13. Convert  $50^{\circ}\text{F}$  temperature to degree Celsius.  
(A)  $323^{\circ}\text{C}$  (B)  $10^{\circ}\text{C}$   
(C)  $223^{\circ}\text{C}$  (D)  $-10^{\circ}\text{C}$

### • Laws of chemical combination

14. Two samples of lead oxide were separately reduced to metallic lead by heating in a current of hydrogen. The weight of lead from one oxide was half the weight of lead obtained from the other oxide. The data illustrates \_\_\_\_\_.  
(A) law of reciprocal proportions  
(B) law of constant proportions  
(C) law of multiple proportions  
(D) law of equivalent proportions
15. Hydrogen and oxygen combine to form  $\text{H}_2\text{O}_2$  and  $\text{H}_2\text{O}$  containing 5.93% and 11.29% of hydrogen respectively. The data illustrates \_\_\_\_\_.  
(A) law of conservation of mass  
(B) law of definite composition  
(C) law of reciprocal proportion  
(D) law of multiple proportion
16. Two elements, A and B, combine to form a compound in which 'a' g of A combines with 'b<sub>1</sub>' and 'b<sub>2</sub>' g of B respectively. According to law of multiple proportion, \_\_\_\_\_.  
(A)  $b_1 = b_2$   
(B)  $b_1$  and  $b_2$  bear a simple whole number ratio  
(C) a is always equal to  $b_1$   
(D) no relation exists between  $b_1$  and  $b_2$
17. The law of multiple proportions is illustrated by the compounds \_\_\_\_\_.  
(A) carbon monoxide and carbon dioxide  
(B) potassium bromide and potassium chloride  
(C) ordinary water and heavy water ( $\text{D}_2\text{O}$ )  
(D) calcium hydroxide and barium hydroxide
18. The mass of sulphur dioxide produced by burning 16 g of sulphur in excess of oxygen in contact process is \_\_\_\_\_ g. (Average atomic mass: S = 32 u, O = 16 u).  
(A) 16 (B) 32  
(C) 64 (D) 128
19. How many litres of ammonia will be formed when 2 L of  $\text{N}_2$  and 2 L of  $\text{H}_2$  are allowed to react?  
(A) 0.665 (B) 1.0  
(C) 1.33 (D) 4.00

### • Dalton's atomic theory

20. Which of the following statements is FALSE according to Dalton's atomic theory?  
(A) Chemical reactions involve only the reorganization of atoms.  
(B) Law of conservation of mass can be explained by assuming that total number of atoms in the reactants and products remain same.  
(C) During chemical reactions, atoms are neither created nor destroyed.  
(D) Atoms of the same element have different properties.

### • Atomic and molecular masses

21. Which symbol replaces the unit of atomic mass, amu? [MHT CET 2018]  
(A) u (B) A  
(C) M (D) n
22. Boron has two isotopes with atomic masses 10 and 11. If its average atomic mass is 10.81, the abundance of lighter isotope is \_\_\_\_\_. [MHT CET 2019]  
(A) 20% (B) 81%  
(C) 19% (D) 80%
23. The natural isotopic abundance of  $^{10}\text{B}$  is 19.60 % and  $^{11}\text{B}$  is 80.40 %. The exact isotopic masses are 10.13 and 11.009 u respectively. The average atomic mass of boron is \_\_\_\_\_ u.  
(A) 10.84 (B) 11.00  
(C) 10.00 (D) 10.55
24. An element, X has the following isotopic composition.  
 $^{200}\text{X} : 90\% ; ^{199}\text{X} : 8.0\% ; ^{202}\text{X} : 2.0\%$   
The weighted average atomic mass of the naturally occurring element X is close to \_\_\_\_\_.  
(A) 200 u (B) 210 u  
(C) 205 u (D) 199 u
25. The molecular mass of  $\text{C}_6\text{H}_5\text{Cl}$  in u is \_\_\_\_\_.  
(A) 112.5 u (B) 48.5 u  
(C) 78 u (D) 118.5 u
26. The mass of one molecule of  $\text{O}_2$  in grams is \_\_\_\_\_. [Given: average atomic mass of O = 16 u and  $1 \text{ u} = 1.66 \times 10^{-24} \text{ g}$ ]  
(A)  $32.0 \times 10^{-24} \text{ g}$   
(B)  $26.6 \times 10^{-24} \text{ g}$   
(C)  $16.0 \times 10^{-24} \text{ g}$   
(D)  $53.1 \times 10^{-24} \text{ g}$
27. The formula mass of KCl in u is \_\_\_\_\_. [Given : atomic mass of K = 39.1 u, Cl = 35.5 u]  
(A) 149.2 u (B) 78.2 u  
(C) 74.6 u (D) 113.7 u



### ● Mole concept and molar mass

28. The number of moles of sodium oxide in 620 g is \_\_\_\_\_.
- (A) 1 mol (B) 10 moles  
(C) 18 moles (D) 100 moles
29. 1 mol of  $\text{CH}_4$  contains \_\_\_\_\_.
- (A)  $6.02 \times 10^{23}$  atoms of C  
(B) 12 g of H  
(C)  $1.81 \times 10^{23}$  molecules of  $\text{CH}_4$   
(D) 3.0 g of carbon
30. The mass of 1 atom of hydrogen is \_\_\_\_\_.
- (A) 1 g (B) 0.5 g  
(C)  $1.6 \times 10^{-24}$  g (D)  $3.2 \times 10^{-24}$  g
31. How many moles of electrons weigh one kilogram?
- (A)  $6.022 \times 10^{23}$  (B)  $\frac{1}{9.108} \times 10^{31}$   
(C)  $\frac{6.022}{9.108} \times 10^{54}$  (D)  $\frac{1}{9.108 \times 6.022} \times 10^8$
32. The number of atoms in 4.25 g of  $\text{NH}_3$  is approximately \_\_\_\_\_.
- (A)  $1 \times 10^{23}$  (B)  $2 \times 10^{23}$   
(C)  $4 \times 10^{23}$  (D)  $6 \times 10^{23}$
33. Which of the following has maximum number of atoms?
- (A) 18 g of  $\text{H}_2\text{O}$  (B) 16 g of  $\text{O}_2$   
(C) 4.4 g of  $\text{CO}_2$  (D) 16 g of  $\text{CH}_4$
34. The number of sulphur atoms present in 0.2 moles of  $\text{S}_8$  molecules is \_\_\_\_\_.
- (A)  $4.82 \times 10^{23}$  (B)  $9.63 \times 10^{22}$   
(C)  $9.63 \times 10^{23}$  (D)  $1.20 \times 10^{23}$
35. The weight of a molecule of the compound  $\text{C}_{60}\text{H}_{122}$  is \_\_\_\_\_.
- (A)  $1.4 \times 10^{-21}$  g (B)  $1.09 \times 10^{-21}$  g  
(C)  $5.025 \times 10^{23}$  g (D)  $16.023 \times 10^{23}$  g
36. The numbers of moles of  $\text{BaCO}_3$ , which contain 1.5 moles of oxygen atoms is \_\_\_\_\_.
- (A) 0.5 (B) 1  
(C) 3 (D)  $6.02 \times 10^{23}$
37. The number of moles of oxygen in 1 L of air containing 21% oxygen by volume in standard conditions is \_\_\_\_\_.
- (A) 0.0093 mol (B) 0.186 mol  
(C) 0.21 mol (D) 2.10 mol
38. Which one of the following pairs of gases contains the same number of molecules?
- (A) 16 g of  $\text{O}_2$  and 14 g of  $\text{N}_2$   
(B) 8 g of  $\text{O}_2$  and 22 g of  $\text{CO}_2$   
(C) 28 g of  $\text{N}_2$  and 22 g of  $\text{CO}_2$   
(D) 32 g of  $\text{O}_2$  and 32 g of  $\text{N}_2$

39. The number of water molecules in 1 litre of water is \_\_\_\_\_.
- (A) 18 (B)  $18 \times 1000$   
(C)  $N_A$  (D)  $55.55 N_A$

### ● Moles and gases

40. 0.5 mole of nitrogen gas represents \_\_\_\_\_.
- (A)  $6.02 \times 10^{23}$   $\text{N}_2$  molecules  
(B) 22.4 L of  $\text{N}_2$  at S.T.P.  
(C) 11.2 L of  $\text{N}_2$  at S.T.P.  
(D) none of these
41. The volume occupied by 4.4 g of  $\text{CO}_2$  at STP is \_\_\_\_\_.
- (A) 0.1 L (B) 0.224 L  
(C) 2.24 L (D) 22.4 L
42. 11.2  $\text{cm}^3$  of oxygen gas at STP contains \_\_\_\_\_ moles of oxygen gas.
- (A) 0.0005 (B) 0.01  
(C) 0.029 (D) 0.5
43. The volume in  $\text{dm}^3$  occupied by 60.0 g of ethane at STP is \_\_\_\_\_.
- (A) 22.4 (B) 44.8  
(C) 56.0 (D) 11.2

### ● Miscellaneous

44. In which case is the number of molecules of water maximum?
- (A) 18 mL of water  
(B) 0.18 g of water  
(C) 0.00224 L of water vapours at 1 atm and 273 K  
(D)  $10^{-3}$  mol of water
45. The ratio of masses of oxygen and nitrogen in a particular gaseous mixture is 1 : 4. The ratio of number of their molecule is \_\_\_\_\_.
- (A) 1 : 4 (B) 7 : 32  
(C) 1 : 8 (D) 3 : 16
46. The most abundant elements by mass in the body of a healthy human adult are: Oxygen (61.4 %), Carbon (22.9 %), Hydrogen (10.0 %) and Nitrogen (2.6 %). The weight, which a 75 kg person would gain if all  $^1\text{H}$  atoms are replaced by  $^2\text{H}$  atoms, is \_\_\_\_\_.
- (A) 7.5 kg (B) 10 kg  
(C) 15 kg (D) 37.5 kg
47. If Avogadro number  $N_A$ , is changed from  $6.022 \times 10^{23} \text{ mol}^{-1}$  to  $6.022 \times 10^{20} \text{ mol}^{-1}$ , this would change \_\_\_\_\_.
- (A) the ratio of chemical species to each other in a balanced equation  
(B) the ratio of elements to each other in a compound  
(C) the definition of mass in units of grams  
(D) the mass of one mole of carbon





# AVAILABLE BOOKS FOR COMPETITIVE EXAMINATIONS

## ● For NEET-UG & JEE (Main) Exam

### ABSOLUTE SERIES

- Physics Vol - I & II
- Chemistry Vol - I & II
- Mathematics Vol - I & II
- Biology Vol - I & II

### CHALLENGER SERIES

- Physics Vol - I & II
- Chemistry Vol - I & II
- Mathematics Vol - I & II
- Biology Vol - I & II

### PSP SERIES (37 YEARS) (PREVIOUS SOLVED PAPERS)

- Physics
- Chemistry
- Biology

### PSP SERIES (12 YEARS) (PREVIOUS SOLVED PAPERS)

- Physics
- Chemistry
- Biology

### NEET-UG TEST SERIES

- Physics
- Chemistry
- Biology

### ADDITIONAL BOOKS

- NEET-UG 10 Mock Tests With Answer Key & Hints
- Previous 12 Years NEET Solved Papers With Solutions
- JEE MAIN Numerical Value Type Questions (NVT)

## ● For MHT-CET Exam

### STD. XI & XII TRIUMPH SERIES

- Physics
- Chemistry
- Mathematics
- Biology

### SOLUTIONS TO MCQs

- Physics Solutions to MCQs
- Chemistry Solutions to MCQs
- Mathematics Solutions to MCQs
- Biology Solutions to MCQs

### MHT-CET TEST SERIES

- Physics With Answer Key & Solutions
- Chemistry With Answer Key & Solutions
- Mathematics With Answer Key & Solutions
- Biology With Answer Key & Solutions

### PSP SERIES (26 YEARS) (PREVIOUS SOLVED PAPERS)

- Physics
- Chemistry
- Mathematics
- Biology

### ADDITIONAL BOOKS

- MHT-CET PCB Solved Papers 2024
- MHT-CET PCM Solved Papers 2024
- MHT-CET 10 Model Question Papers (Physics, Chemistry, Biology)
- MHT-CET 10 Model Question Papers (Physics, Chemistry, Mathematics)
- MHT-CET 22 Model Question Papers (Physics, Chemistry, Biology)
- MHT-CET 22 Model Question Papers (Physics, Chemistry, Mathematics)
- MHT-CET 22 Model Question Papers (Physics, Chemistry, Mathematics, Biology)

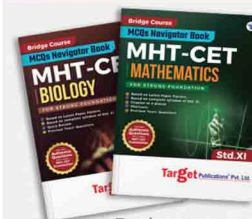
### PSP SERIES (10 YEARS) (PREVIOUS SOLVED PAPERS)

- Physics
- Chemistry
- Mathematics
- Biology

Visit Our Website

Published by:

**Target Publications® Pvt. Ltd.**  
Transforming lives through learning



Explore our range of  
Bridge Course MHT-CET Books

📍 B2, 9<sup>th</sup> Floor, Ashar, Road No. 16/Z, Wagle Industrial Estate, Thane (W)-400604 | 📞 88799 39712 / 14 | 📞 88799 39713 / 15

🌐 [www.targetpublications.org](http://www.targetpublications.org) ✉ [mail@targetpublications.org](mailto:mail@targetpublications.org)