CBSE TEST PAPER-01

CLASS - XI CHEMISTRY (Basic Concepts of Chemistry)

General Instruction:

- All questions are compulsory.
- Marks are given alongwith their questions.

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1. What is chemistry?

2. How has chemistry contributed towards nation's development?

3. Differentiate solids, liquids & gases in terms of volume & shapes.

4. Name the different methods that can be used for separation of components of a mixture.

5. Classify following as pure substances and mixtures – Air, glucose, gold, sodium and milk.

6. What is the difference between molecules and compounds? Give examples of each.

7. How can we separate the components of a compound?

8. How can we say that sugar is solid and water is liquid?

9. How is matter classified at macroscopic level?

10. Classify following substances as element, compounds and mixtures – water, tea, silver, steel, carbondioxide and platinum.

CBSE TEST PAPER-01

CLASS - XI CHEMISTRY (Basic Concepts of Chemistry)

[ANSWERS]

Ans 1. Chemistry is the branch of science that studies the composition, properties and interaction of matter.

Ans 2. Chemical principles are important in diverse areas such as weather patterns, functioning of brain, operation of a computer, chemical industries, manufacturing , fertilizers, alkalis, acids, salts, dyes, polymers, drugs, soaps, detergents, metals, alloys, contribute in a big way to national economy.

Ans 3.

Property	Solids	Liquids	Gases
1. Volume	Definite	Definite	Not definite
2. Shape	Fixed	Not fixed, take the shape of container,	Not fixed, takes the shape of the container

Ans 4. The components of a mixture can be separated by physical methods like handpicking, filtrations, crystallization, distillation etc.

Ans 5.

Pure Substances	Mixtures
Glucose	Air
Gold	Milk
Sodium	dfg

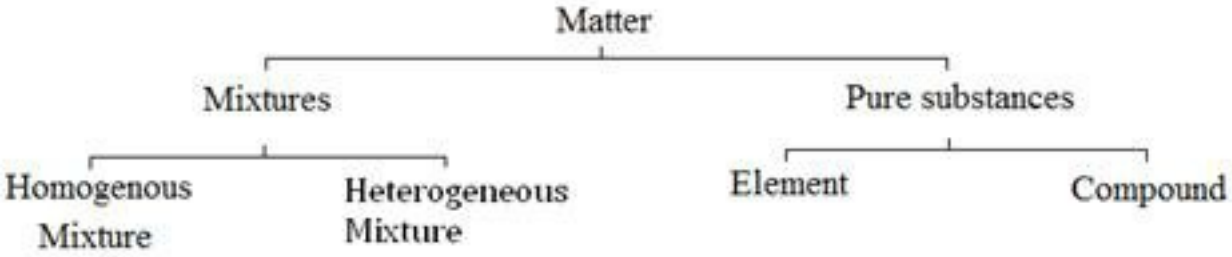
Ans 6. Molecules consist of different atoms or same atoms. e.g. molecule of hydrogen contains two atoms of hydrogen where as molecule of water contain two atoms of hydrogen and one of oxygen.

Compound is formed when two or more than two different atoms combine in fire propo e.g. water –rtion carbondioxide, sugar etc.

Ans 7. The constituents of a compound can not be separated by physical methods. They can only be separate by chemical methods.

Ans 8. Sugar has close packing of constituent particles, have its own volume and shape therefore, it can be said to be solid whereas in water the constituent particles are not as closely packed as in solid. It has definite volume but not definite shape. Therefore it is a liquid.

Ans 9. Macroscopic classification of matter –



Ans 10.

Compounds	Elements	Mixtures
Water	Silver	Tea
Carbondioxide	Platinum	Steel

CBSE TEST PAPER-03

CLASS - XI CHEMISTRY (Basic Concepts of Chemistry)

General Instruction:

- All questions are compulsory.
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1. What is the difference between precision and accuracy?

2. What do you understand by significant figures?

3. State law of definite proportions.

4. State Avogadro's law.

5. Define one atomic mass unit (amu).

6. What is formula mass?

7. How many significant figures are present in

(a) 4.01×10^2

(b) 8.256

(c) 100

8. Explain law of multiple proportions with an example.

9. Write Postulates of Dalton's atomic theory.

10. Calculate molecular mass of –

C_2H_6, $C_{12}H_{22}O_{11}$, H_2SO_4, H_3PO_4

CBSE TEST PAPER-03

CLASS - XI CHEMISTRY [ANSWERS]

Ans 1. Precision means the closeness of various measurements for the same quantity. Accuracy is the agreement of a particular value to the true value of the result.

Accuracy	Precision
Definition	
The degree of conformity and correctness of something when compared to a true or absolute value.	A state of strict exactness — how often something is strictly exact.
Measurements	
Single factor or measurement	Multiple measurements or factors are needed
Relationship	
Something can be accurate on occasion as a fluke. For something to be consistently and reliably accurate, it must also be precise.	Results can be precise without being accurate. Alternatively, results can be precise AND accurate.

Ans 2. Significant figures are meaningful digits which are known with certainty. The uncertainty in experimental or the calculated value is indicated by mentioning the number of significant figures.

Ans 3. Law of definite proportions states that a given compound always contains exactly the same proportion of elements by weight.

Ans 4. According to Avogadro's law, equal volumes of gases at the same temperature and pressure should contain equal number of molecules.

Ans 5. One atomic mass unit (amu) is defined as a mass exactly equal to one – twelfth the mass of one carbon – 12 atom.

Ans 6. When a substance does not contain discrete molecules as their constituent units and have a three dimensional structure, formula mass is used to calculate molecular mass which is sum of all the atomic masses of atom present in the formula.

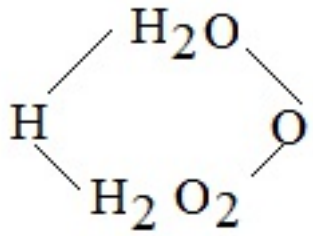
Ans 7. (a) 4.01×10^2 – Three

(b) 8.256 – Four

(c) 100 – One

Ans 8. The law of multiple proportions rays that if two elements can combine to form more than one compound, the masses of one element that combine with a fixed mass of other element are in a ratio of small whole numbers. e.g. hydrogen and oxygen can combine to form water as well as hydrogen peroxide.

Here, the masses of oxygen (16g & 32g) which combine with a fixed mass of hydrogen (2g) bear a simple ratio i.e., 16:32 = 1:2.



Ans 9. Postulates of Dalton's atomic theory –

1. Matter consists of indivisible atoms.

2. All the atoms of a given element have identical properties including atomic mass. Atoms of different element differ in mass.

3. Compounds are formed when atoms of different elements combine in a fixed ratio.

4. Chemical reaction involves reorganization of atoms. These are neither created nor destroyed

Ans 10. $C_2H_6 = (2 \times 12) + (6 \times 1) = 30$

$C_{12}H_{22}O_{11} = (12 \times 12) + (22 \times 1) + (11 \times 16) = 342$

$H_2SO_4 = (2 \times 1) + 32 + (4 \times 16) = 98$

$H_3PO_4 = (1 \times 3) + 31 + (4 \times 16) = 98$

CBSE TEST PAPER-02

CLASS - XI CHEMISTRY (Basic Concepts of Chemistry)

General Instruction:

- All questions are compulsory.
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1. How are physical properties different from chemical properties?

2. What are the two different system of measurement?

3. What is the SI unit of density?

4. What are the reference points in thermometer with Celsius scale?

5. What is the SI unit of volume? What is the other common unit which in not an SI unit of volume.

6. Write seven fundamental quantities & their units.

7. What is the difference between mass & weight? How is mass measured in laboratory?

8. How is volume measured in laboratory? Convent 0.5L into ml and $30cm^3$ to dm^3

9. Convert 35^0C to ^oF & K.

10. What does the following prefixes stand for –

(a) pico (b) nano (c) centi (d) deci

CBSE TEST PAPER-02

CLASS - XI CHEMISTRY [ANSWERS]

Ans 1. Physical properties are those properties which can be measured or observed without changing the identity or the composition of the substance whereas the measurement of chemical properties require a chemical change to occur e.g. colour, odour etc are physical properties and combustion, basicity etc are chemical properties.

Ans 2. The different system of measurement are English system and the metric system.

Ans 3. The SI Unit of density is Kg m^{-3} or kg/m^3

Ans 4. The thermometers with Celsius scale are calibrated form 0^o to 100^o where there two temperatures are the freezing and boiling of water.

Ans 5. The SI unit of volume is m^3 whereas litre (L) is the common unit which is not an SI unit.

Ans 6.

Physical Quantity	SI unit
1. Length (l)	Metre (m)
2. Mass (m)	Kilogram (kg)
3. Time (t)	Second (s)
4. Electric Current (I)	Ampere (A)
5. Thermodynamic Temperature (T)	Kelvin (K)
6. Amount of substance (n)	Mole (mol)
7. Luminous Intensity (I v)	Candela (Cd)

Ans 7. Mass of a substance is the amount of matter present in it while weight is the force exerted by gravity on an object the mass of a substance is determined with the help of an analytical balance in laboratory.

Ans 8. In the laboratory volume of a liquid can be measured by using graduated cylinder, burette, pipette etc.

1 L = 1000 ml

0.5 L = 500 ml

$1000cm3 = 1dm^3$

$30cm^3 = \frac{1}{100\cancel{0}} \times 3\cancel{0} dm^3$

$= 0.03dm^3$

Ans 9.

°F	K
$^\circ F = \frac{9}{5}(^\circ C) + 32$	$K = ^\circ C + 273.15$
$^\circ F = \frac{9}{\cancel{5}}(\cancel{35}) + 32$	$= 35 + 273.15$
$= 63 + 32 = 95^\circ F$	$= 308.15K$

Ans 10. Pico = 10^{-12}

nano = 10^{-9}

centi = 10^{-2}

deci = 10^{-1}