

T2-Chemistry
Model Question Paper V
9th Standard

Science

Reg.No. :

I. Answer all the questions

Time : 00:30:00 Hrs

Total Marks : 45

5 x 1 = 5

Part-A

- 1) The atomic number of sodium is 11. Then the number of electrons in sodium ion is
(a) 9 (b) 10 (c) 12
- 2) Select the monoatomic anion
(a) CN (b) PO_4^{3-} (c) I^- (d) NO_2^-
- 3) Identify the anion from KClO_3 _____.
(a) Cl^- (b) O_2^- (c) ClO_3^-
- 4) Acid rain is due to the formation of _____.
(a) ozone (b) nitric acid (c) carbon dioxide
- 5) As the valencies of lead are 2,4, the charge carried by plumbic ion is
(a) +1 (b) +2 (c) +3 (d) +4

Part-B

5 x 1 = 5

- 6) The total number of atoms present in CO_3^{2-} is_____.
- 7) The valency of sulphur in sulphur hexa fluoride is _____.
- 8) An element has six electrons in its outermost shell, then its valency is_____.
- 9) The chemicals required during photosynthesis are _____.
- 10) An ion carries the charge of X^3 , then the number of electrons in its valence shell is _____.

Part-C

10 x 2 = 20

- 11) $\text{Na} \rightarrow \text{Na}^+ + \text{e}^-$
 $\text{Cl} + \text{e}^- \rightarrow \text{Cl}^-$
 a) Is sodium a metal or a non-metal?
 b) Write the name of Cl^- ion
- 12) The element 'B' is trivalent. Write the formulae of its:
 a) Oxide b) Chloride
- 13) The valency of Zn is 2. and the valency of Oxygen is also 2. Construct the formula for zinc oxide by using these hints
- 14) Correct the statements:
 i) The positive ions are written on the right and the negative ions on the left.
 ii) For a monoatomic ion, the net change of the group is its valency
- 15) Aluminium reacts with sulphuric acid to form Aluminium sulphate. Answer the following
 i) Write the molecular formula of Aluminium sulphate.
 ii) What is the charge carried by sulphate ion?
- 16) In an equation, what do the symbols "aq" and "↓" signify?
- 17) Pb^{2+} N_2 B PH_3 Ag^+
 From the list above, select two
 i) atoms ii) molecules iii) ions
 b) Name the compound formed from Pb^{2+} and I^- ions and write a formula for it.
- 18) A chemical formula of a compound is electrically neutral. Give reason
- 19) Construct the formula of the following compounds using crisscrossing valency.
 (a) Calcium hydroxide (b) Ammonium carbonate
 (c) Zinc oxide (d) Aluminium oxide
- 20) The number of atoms of the reactants and the products of various elements on both sides are equal in a balanced chemical equation. Balance the following equation
 $\text{HNO}_3 \rightarrow \text{H}_2\text{O} + \text{NO}_2 + \text{O}_2$

Part-D

5 x 3 = 15

- 21) Complete the table

Ions	Phosphate	Chlorate	Bisulphate
Na^+	_____	NaClO_3	_____
Mg^{2+}	$\text{Mg}_3(\text{PO}_4)_2$	_____	_____
Al^{3+}	AlPO_4	_____	$\text{Al}(\text{HSO}_4)_3$

- 22) Car battery contains sulphuric acid. Swati has taken this acid using a dropper and placed it in the bottle shown in the adjoining diagram. The bottle has some aluminium foil.

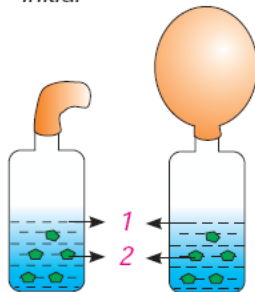
After the addition of acid, a colourless gas is evolved which is collected by placing a balloon around the mouth of the bottle

Answer the following now:

- Aluminium is a _____.
- The formula of Sulphuric acid is _____.
- The formula of Aluminium Sulphate is _____.
- The chemical reaction is given below in word

equation: Now write the same using symbols. Aluminium + Sulphuric acid → Aluminium Sulphate + Hydrogen gas

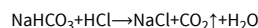
Initial After some time



1. Dilute sulphuric acid

2. Aluminium foil

- 23) Baking soda mainly contains sodium bicarbonate. When this is treated with dilute hydrochloric acid, the following reaction occurs.



Answer the questions below.

- What is the valency of the sodium ion?
- What is the valency of the bicarbonate ion?
- Is the chloride ion monovalent or divalent?
- What do the symbols → and ↑ imply in the reaction
- If one more H^+ ion is removed from bicarbonate ion gives carbonate ion. Write the formula of the carbonate radical.
- The bicarbonate ion is _____ anion. (Monoatomic / Polyatomic)
- Name the products formed in the above reaction.
- Identify the cation and the anion in the formula of Sodium chloride.
- What is the difference between sodium and sodium ion.
- State the law which must be fulfilled, while balancing the chemical equation.

- 24) From the given list of cations and anions, write atleast 10 compounds each with its formula and name

Cations	Anions
NH_4^+	ClO_3^{1-}
Pb^{2+}	SO_3^{2-}
Fe^{3+}	CrO_4^{2-}
K^+	HSO_4^{1-}

	Formula	Name
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- 25) An atom is composed of three subatomic particles namely protons, electrons and neutrons

Answer the questions based on the above information.

- The subatomic particle which remains unchanged during the chemical reaction is / are _____
- The subatomic particle which increases or decreases in an atom during the reaction is / are _____
- Generally, atoms are electrically _____.
