

Suggested Answers on Note (Chapter 6) P.2

Name of Compound	Formula	Name of Compound	Formula
Hydrochloric acid	HCl(aq)	Water / Steam	H₂O(l) / H₂O(g)
Nitric acid	HNO₃(aq)	Ammonia	NH₃(g)
Sulphuric acid	H₂SO₄(aq)	Methane	CH₄(g)

Relative Atomic Masses (R.A.M.) of Some Elements

Element	R.A.M.	Element	R.A.M.	Element	R.A.M.
Aluminium	27.0	Fluorine	19.0	Nitrogen	14.0
Argon	40.0	Helium	4.0	Oxygen	16.0
Barium	137.3	Hydrogen	1.0	Phosphorus	31.0
Beryllium	9.0	Iodine	126.9	Platinum	195.1
Boron	10.8	Iron	55.8	Potassium	39.1
Bromine	79.9	Lead	207.2	Silicon	28.1
Calcium	40.1	Lithium	6.9	Silver	107.9
Carbon	12.0	Magnesium	24.3	Sodium	23.0
Chlorine	35.5	Manganese	54.9	Sulphur	32.1
Chromium	52.0	Mercury	200.6	Tin	118.7
Cobalt	58.9	Neon	20.2	Zinc	65.4
Copper	63.5	Nickel	58.7		

Suggested Answers on Note (Chapter 6) P.3

Formula	Term to describe its mass	Molecular or Formula mass
H ₂ O	Molecular / Formula	$(1) \times 2 + (16) \times 1 = 18$
Ca(OH) ₂	Formula	$(40) \times 1 + [(16) + (1)] \times 2 = 74$
H ₂ SO ₄	Molecular / Formula	$(1) \times 2 + (32) \times 1 + (16) \times 4 = 98$
Na ₂ CO ₃ •10H ₂ O	Formula	$(23) \times 2 + (12) \times 1 + (16) \times 3 + (1 \times 2 + 16) \times 10 = 286$

Formula	Element	R.F.M.	Formula	Element	R.F.M.
KOH	1 K, 1 O and 1 H	$39.1 + 16.0 + 1.0 = 56$	C ₁₂ H ₂₂ O ₁₁	12 C, 22 H and 11 O	342.0
HNO ₃	1 H, 1 N and 3 O	63.0	Al(NO ₃) ₃	1 Al, 3 N and 9 O	213.0
PbSO ₄	1 Pb, 1 S and 4 O	303.3	NH ₄ HSO ₄	1 N, 5 H, 1 S and 4 O	115.1
H ₂ SO ₄	2 H, 1 S and 4 O	98.1	H ₂ S ₂ O ₇	2 H, 2 S and 7 O	178.2
Al ₂ O ₃	2 Al and 3 O	102.0	CuSO ₄ •5H ₂ O	1 Cu, 1 S, 9 O and 10 H	249.6
(NH ₄) ₃ PO ₄	3 N, 12 H, 1 P and 4 O	149.0	K ₃ [Fe(CN) ₆]	3 K, 1 Fe, 6 C and 6 N	329.1

Name	Formula	R.F.M.	Name	Formula	R.F.M.
ammonium chloride	NH ₄ Cl	$14.0 + 4.0 + 35.5 = 53.5$	calcium nitrate	Ca(NO ₃) ₂	164.1
copper(II) sulphate	CuSO ₄	159.6	lead(II) hydroxide	Pb(OH) ₂	241.2
barium carbonate	BaCO ₃	197.3	magnesium nitrite	Mg(NO ₂) ₂	116.3
aluminium sulphite	Al ₂ (SO ₃) ₃	294.3	carbon monoxide	CO	28.0
nickel(II) chloride	NiCl ₂	129.7	nitrogen monoxide	NO	30.0
cobalt(II) bromide	CoBr ₂	218.7	nitrogen dioxide	NO ₂	46.0
manganese dioxide	MnO ₂	86.9	sulphur dioxide	SO ₂	64.1
potassium dichromate	K ₂ Cr ₂ O ₇	294.2	sulphur trioxide	SO ₃	80.0
sodium permanganate	NaMnO ₄	141.9	carbon disulphide	CS ₂	76.2

Suggested Answers on Note (Chapter 6) P.4

State Symbols

State	State symbol
Solid	(s)
Liquid	(l)
Gas	(g)
Aqueous	(aq)

Equation

Reactants \longrightarrow **Products**

Suggested Answers on Note (Chapter 6) P.5 – 6

- $2\text{Hg}(\text{l}) + \text{O}_2(\text{g}) \longrightarrow 2\text{HgO}(\text{s})$
- $\text{CuO}(\text{s}) + \text{CO}(\text{g}) \longrightarrow \text{Cu}(\text{s}) + \text{CO}_2(\text{g})$
- $\text{Zn}(\text{s}) + \text{SnCl}_2(\text{aq}) \longrightarrow \text{ZnCl}_2(\text{aq}) + \text{Sn}(\text{s})$
- $\text{H}_2\text{SO}_4(\text{aq}) + 2\text{NaOH}(\text{aq}) \longrightarrow \text{Na}_2\text{SO}_4(\text{aq}) + 2\text{H}_2\text{O}(\text{l})$
- $\text{NH}_4\text{NO}_2(\text{s}) \longrightarrow \text{N}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l})$
- $2\text{KI}(\text{aq}) + \text{Br}_2(\text{aq}) \longrightarrow 2\text{KBr}(\text{aq}) + \text{I}_2(\text{aq})$
- $\text{Cu}(\text{OH})_2(\text{s}) \longrightarrow \text{CuO}(\text{s}) + \text{H}_2\text{O}(\text{g})$
- $2\text{AgI}(\text{s}) \longrightarrow 2\text{Ag}(\text{s}) + \text{I}_2(\text{g})$
- $\text{SnO}(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{SnSO}_4(\text{aq}) + \text{H}_2\text{O}(\text{l})$
- $2\text{K}(\text{s}) + 2\text{HCl}(\text{aq}) \longrightarrow 2\text{KCl}(\text{aq}) + \text{H}_2(\text{g})$
- $\text{FeBr}_3(\text{aq}) + 3\text{KOH}(\text{aq}) \longrightarrow \text{Fe}(\text{OH})_3(\text{s}) + 3\text{KBr}(\text{aq})$
- $\text{C}(\text{s}) + 2\text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{CO}_2(\text{g}) + 2\text{SO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l})$
- $2\text{AgNO}_3(\text{aq}) + 2\text{NaOH}(\text{aq}) \longrightarrow \text{Ag}_2\text{O}(\text{s}) + 2\text{NaNO}_3(\text{aq}) + \text{H}_2\text{O}(\text{l})$
- $\text{Mg}(\text{s}) + 2\text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{MgSO}_4(\text{aq}) + \text{SO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l})$
- $\text{C}(\text{s}) + 4\text{HNO}_3(\text{aq}) \longrightarrow \text{CO}_2(\text{g}) + 4\text{NO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l})$