QUESTIONS Page 98

Question 1

1. Atoms 2. Nucleons 3. Protons 4. Element
5. Nucleus 6. Electrons 7. Neutrons 8. Groups
9. Atomic Number 10. Periods [10]

Question 2

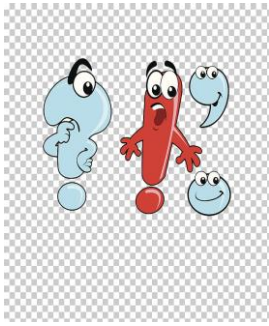
1. (a) Oxygen (b) Bromine (c) Sulphur (d) Calcium (e) Lithium
(f) Chlorine (g) Zinc (h) Hydrogen [8]

2. (a) F (b) Fe (c) I (d) Ne (e) Au (f) Hg (g) Ag (h) Mn [8]

Question 3

1. (a) Copper (b) Helium (c) Sodium (d) Carbon
(e) Magnesium [5]

2. (a) O (b) Ca (c) K (d) Li (e) Al [5]



Question 4

1. (a) MgO (b) CO (c) HNO_3 (d) CO_2 (e) $NaHCO_3$
   (f) Li_2O (g) $Ca(OH)_2$ (h) H_2SO_4 (i) $ZnCl_2$ (j) Fe_2O_3 **[10]**

2. (a) petrol (b) table salt (c) plaster-of-paris
   (d) baking powder (bicarb.) (e) stink-bomb
   (f) laughing gas (g) water (h) epsom salts **[8]**

3. When two (or more) elements join. **[1]**

4. (a) H_2O (b) CH_4 (c) SO_2 (d) CO_2 (e) $NaCl$
   (f) Li_2O (g) $NaOH$ (h) $AgNO_3$ (i) $MgCl_2$ (j) KBr **[10]**

5. (a) copper carbonate (b) zinc oxide
   (c) sodium hydrogen carbonate (d) octane
   (e) nitrous oxide (f) sodium sulphide
   (g) copper sulfate (h) hydrogen sulfide **[8]**

Question 5

1. **Carbon** 2. 12

3. 6 protons + 6 neutrons = **12** 4. **6**

5. (a) **Nitrogen** (b) **Silicon** [6]

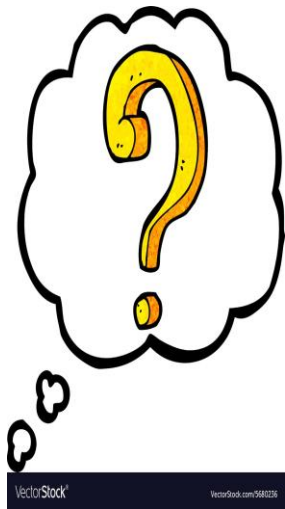
Question 6

1. Oxygen 2. Non-metal 3. Base 4. Acid 5. Water
   6. Acid . . . Carbon dioxide [7]

Question 7

$Na_2CO_3 + \mathbf{2}HCl \rightarrow \mathbf{2}NaCl + H_2O + CO_2$

1. sodium carbonate + hydrochloric acid → sodium chloride + water + carbon dioxide [5]
2. sodium carbonate + hydrochloric acid
3. sodium chloride + water + carbon dioxide [3]
4. (a) 2 (b) 1 (c) 2 [3]
5. (a) 2 (b) 2 (c) 2 [3]



Question 8

1. Hydrogen & Oxygen [2] 2. Water [1]

3. (a) **2** (H_2) (b) **2** (O_2) (c) **6** ($2H_2O$) [3]

Question 9

4 Fe + **3**O_2 → **2**Fe_2O_3 [3]

Question 10

(1.) **2**Mg + O_2 → **2**MgO [3] (2.) **4**Al +**3**O_2 → **2**Al_2O_3 [3]

Question 11

1. (a) Tastes sour. Rough. pH < 7. Starts with H. Blue litmus → red.
   (b) Tastes bitter. Ends with OH. pH > 7. Red litmus → blue. [6]
2. potential of Hydrogen (pH) tells the level of acidity. [2]
3. (a) 8 to 14 (b) 0 to 6 (c) 7 [3]

(*Still*) Question 11

4. Acetic acid (vinegar) & citric acid (in citrus fruits). [2]
   Sodium hydroxide (drain cleaner) & sodium bicarbonate. [2]
5. Indicates to us if it is acid, base, or neutral. [2]
6. (a) Universal paper. Litmus paper. [2]
   (b) Red cabbage juice. Black tea. [2]
7. (a) Red (b) Red (c) Red (d) Blue [5]

Question 12

1 (a) Calcium Hydroxide is poured into river to neutralise acid. [2]

(b) Bee stings are acid, so can neutralise with zinc carbonate (calamine lotion). [3]

(c) Bluebottle sting is base – use acid vinegar to neutralise it. [3]

Question 13

1. Sulphur dioxide. [1]
2. Kills plants & animals. [2]
3. Makes them (statues, tin roofs) weaker, so are destroyed quicker. [2]
4. Nitrogen Oxide (NO_2). Carbon Dioxide (CO_2). [2]

Question 14

1. (a) potassium hydroxide + hydrochloric acid → potassium chloride + water [4]

   (b) zinc oxide + sulphuric acid → zinc sulphate + water [4]

2. (a) $\mathbf{4}Fe + \mathbf{3}O_2 \rightarrow \mathbf{2}Fe_2O_3$ [4]

   (b) $H_2SO_4 + Mg(OH)_2 \rightarrow MgSO_4 + \mathbf{2}H_2O$ [4]

Question 15

1. (a) hydrochloric acid + magnesium oxide → magnesium chloride + water [4]

   (b) Hydrochloric acid + zinc → zinc chloride + hydrogen [4]

(2.) $\mathbf{2}HCl + CaCO_3 \rightarrow CaCl_2 + CO_2 + H_2O$ [4]