CHEMISTRY FORM TWO NECTA 2005

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1.

i	ii	iii	iv	v	vi	vii	viii	ix	X
D	D	D	C	B	C	B	B	C	A

2.

i	ii	iii	iv	v	vi	vii	viii	ix	x
G	I	H	B	J	C	K	E	F	O

3. (a)(i)bandage

(ii)pair of scissors

(iii)iodine tincture.

(iv)cotton wool

(b)(i)the lime water will change to milky due to formation of precipitate.

(ii)the white colour will change to blue colour

(iii)the wood will turn off because the carbon dioxide does not support combustion

4. (a)(i)1.H 2.He 8. O 11. Na 12. Mg 17. Cl

(ii) HCl

(b) 12 is metal, 17 is non metal

(ii) basic oxides.

5. (i)$Ca + H_2O \longrightarrow Ca(OH)_2$

(ii)$BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + 2HCl$

(iii)$CuSO_4.5H_2O \xrightarrow{\text{HEAT STRONGLY}} CuSO_4 + 5\ H_2O$

(iv)$ZnCO_3 + HCl \longrightarrow ZnCl_2 + HCO_3$

(v) $Al + HCl \longrightarrow$ no reaction

6. (a)Matter is any substance that has mass and can occupy space.

(b)(i)melting

(ii)vaporization

(iii)condesation

(iv)freezing

(c) (i) NO_2^-

Recall oxidation state of oxygen, and also this is the radical, hence sum of oxidation is -1

N + 2(-2) = -1

N = +3

(ii)Na**O**H

(+1) + **O** + (+1) = 0

O = -2

(iii)CO_2

C + (-2) = 0

C = +2

(iv)Na_3PO_4

3(+1) + P +4 (-2) = 0

P = +5

(v)SO_4^{2-}

THIS IS A RADICAL THEN,

S + 4(-2) = -2

S = +6

7. (a)Oxidation and reduction

oxidation	reduction
-removal of hydrogen	-removal of oxygen
-addition of hydrogen	-addition of hydrogen
-gain of electron	-lose of electrons

(b)(i)$Ba^{2+} + SO_4^{-2} \longrightarrow BaSO_4$

(ii)$Ca^{2+} + Cl^- \longrightarrow CaCl_2$

8. (a) $2H_2O_2 \xrightarrow{\text{manganese (iv) oxide}} O_2 + 2H_2O$

(b)(i)$Ca(HCO_3)_2$

(ii)Fe_2O_3

(iii)$Cu(NO_3)_2$

(iv)$Na(HCO_3)$

9. (a)Molecular formula is the formula that shows the actual number of each molecule in the compound.

(b) case 1. Divide each composition by their respective atomic mass

Carbon, 40/12 = 3.33, hydrogen 6.67/2 = 3.34, oxygen 53.3/16 = 3.33

Case2. Divide by smallest number

Carbon 3.33/3.33 = 1, hydrogen 3.34/3.33 = 1, oxygen 3.33/3.33 = 1

(i)empirical formula is CHO

(ii)take $(CHO)_x = 60$

$12x + 2x + 16x = 60$

$X = 2$

Molecular formula is $C_2H_2O_2$

10. (a)Air is the mixture because its component gases combined at varying ratio.also the separation of gases can be done physically.

(b)Points of modern atomic theory

- The atom has smallest particles protons,electrons and neutrons
- Atoms of the same element can have different atomic masses
- Atoms of the same element can be different.

- Atoms of different atoms can have the same mass

(c)(i)Flame is the burning which produces light and heat.

(ii)-luminous flame

-non luminous flame