**MWAKICAN JOINT EXAM**

**FORM ONE TERM II 2017**

**CHEMISTRY MARKING SCHEME**

1a) i) N (1mk)

ii) L (1mk)

iii) M (1mk)

b) L – Pink/red (1mk)

K – pink (1mk)

2a) Chemical (1mk)

b) Physical (1mk)

c) physical (1mk)

3a) Sodium peroxide (1mk)

b) Insoluble in water (1mk)

c) The gas is mixed with air which was originally in the flask (1mk)

4a) Non –luminous flame (1mk)

(1mk)

b) A – it is the hottest part because the gases are completely burnt (1mk)

c) It is very hot (1mk)

Does not produce soot (1mk)

5a) Hydrated iron (III) oxide (1mk)

b)i) They form a coat on top of Iron hence preventing entry of air (1mk)

ii) Presence of salty water or higher temperature which speeds rusting

(1mk) (1mk)

6i) X – residue (1mk)

ii) Y – Filtrate (1mk)

7a) A black solid is formed

b) Place the mixture on a flat surface

Pass a magnet on top of the mixture (1mk)

Iron is attracted leaving sulphur (1mk)

8a) i) Cooling curve (1mk)

ii) B –C (1mk)

iii) Pure- it has sharp freezing point (1mk)

b) Solid (1mk)

9a) Solvent extraction (1mk)

b) Chromatography (1mk)

c) Sublimation (1mk)

d) Simple distillation

10a) To prevent water from flowing back into the hot boiling tube which would break it (1mk)

b) A white solid or colourless droplets (1mk)

c) Water (1mk)

d) To condense the water vapour formed (1mk)

11a) Mortar and pestle (1mk)

b) Reagent bottle (1mk)

c) Dropper / Teat pipette (1mk)

12a) To allow one to see through them when carrying out experiments because glass is transparent

Glass does not react with most of the reagents used in the laboratory

Glass is easy to clean.

Glass doesn’t easily burn. (Any two – 1mk each)

b) Volumetric flask, syringe, pipette, Burette, measuring cylinder. (1mk each for any two)

13a) Hydrogen peroxide (1mk)

Manganese (IV) Oxide (1mk)

Manganese (iv) oxide

b) Hydrogen peroxide oxygen + water (1mk)

c) i) To ensure all the oxygen in the syringes is used up (1mk)

ii) The oxygen in the air reacted with copper (1mk)

iii) A black solid is formed or the colour changes from brown to black. (1mk)

iv) Copper + Oxygen copper (II) oxide

v) Volume of oxygen used = 120cm3 – 95.5cm3  1/2

= 24.5cm3 1/2

Percentage of oxygen used = 24.5 x 100 1/2

120

= 20.4167% 1/2

vi) In hospitals by patients with breathing difficulties

- By mountain climbers and deep sea divers (2mks for any two)

- To burn fuels for propelling rockets

- Mixed with acetylene / ethyne to produce a hot flame for welding

- To remove impurities during steel making

14i) A – Kerosene (1mk)

B – Water (1mk)

ii) Kerosene and water are immiscible (1mk)

iii) A separating funnel (1mk)

15. These gases are poisonous when inhaled (1mk)

They dissolve in rain water to cause acid rain which has harmful effects (1mk)

16i) N (1mk)

ii) M (1mk)

iii) O (1mk)

(1mk) (1mk)

17a) A – Fractionating column – to allow the vapour to condense and flow back into the flask

(1mk) (1mk)

B- Liebig condenser – To allow condensation

(1mk) (1mk)

b) The components of the mixture have small different boiling points (1mk)

(1mk)

18i) A brown solid in the boiling tube and white precipitate in lime water (1mk)

ii) Extraction of metals such as copper and zinc from their oxide ores. (1mk)

19.

|  |  |  |
| --- | --- | --- |
| Element | Latin Name | Symbol |
| Lead  Copper  Potassium | Plumbum  Cuprum  kalium | Pb  Cu  K |

20a) A -Base

C- Air hole

D- Collar

F – Chimney

b) C – allows air to enter and mix with laboratory gas

E – allows the laboratory gas into the chimney (1mk)

21a) measuring time (1mk)

b) Measuring mass (1mk)

22. P – Sublimation (1mk)

R – Freezing (1mk)

Q – Condensation (1mk)

23a) The constant temperature at which a solid changes to a liquid on heating

(1mk)

b) In solid state, the particles are **closely packed together** and can only vibrate within fixed positions

while in liquid state particles **are not as close together** and can move from one position to another

within the liquid (1mk)

24a) Substance particle

Water molecules

Copper atoms

b) i) Sodium, Oxygen, hydrogen ½ mk for each atom

ii) Calcium, nitrogen, oxygen

25. a) Effervescence / colourless gas produced. (1mk)

b) Calcium carbonate + Dilute Hydrochloric acid Calcium chloride + carbon (iv) oxide + water

(1mk)