**FORM ONE CHEMISTRY**

**END OF TERM 3 YEAR 2023**

**MARKING SCHEME**

1. (a) If hydrogen gas is allowed to accumulate in the room; it can cause explosion. √1

 (b) Reduction reaction. √1

 (c ) - Used in making oxy-hydrogen flame √1

 - Used in hydrogenation of oils - Reject hardeny: Any one √1

 - Used in manufacture of ammonia.

(i) PbO(s) + H2(g) Pb(s) + H2O(l) ✓ 1( in word)

(ii) Reducing property

(iii) No reaction✓ ½, sodium metal is more reactive than hydrogen, hence hydrogen cannot reduce oxide to element sodium.

2. (a) (i) Addiction and dependency √ ½

 (ii) Stress / depression √ ½

 (iii) Hallucination √ ½

 (b) (i) Glass does not rust. √ ½

 (ii) Glass is transparent. √ ½

 (iii)Glass can withstand heating. √ ½

 (c ) (i) A – Pale blue zone √ ½

 B – Green blue zone √ ½

 C – Almost colourless zone √ ½

 (ii) The pale blue zone

 (iii) - It’s the hottest √ ½

 - It’s a clean flame √ ½

 (d) (i) The luminous flame.

 (ii) When the air hole is closed.

 (e) Non-luminous flame is clear √ ½ such that its difficult to be seen. Thus its adjusted to the luminous flame which is visible due to its brightness √ ½ // saves on fuel

3(a) P and S

 (b) Q

4 i conc sodium hydroxide//KOH ✓ 1 mark

ii Cooled to -25oc and turns to ice ✓ 1 mark

iii -200 oc ✓ 1 mark

iv N2, Ar, O2 ✓ 1 mark

5, (i) Between (100 and 108)0C. ✓1

 (ii) Impure water ✓ (½ Mark)

 It boils over a temperature range √ (½ Mark)

 (iii) It raises the boiling point of the water. ✓1

6. (i) CaCO3 (s) + H2SO4 (aq) CaSO4 (s) + H2O(l) + CO2 (g) ✓ 1 (in words)

7 (a) It reacts with the oxygen ✓ ½ present there and also with nitrogen ✓ ½ gas present there.

 (b) 2Mg (s) + O2 (g) 2MgO (s) ✓ 1 Mark

 3Mg(s) + N2 (g) Mg3N2(s) ✓ 1 Mark

8. (i) - downward delivery of gas method//upward displacement of air

ii NO 1Mark

 - The gas is less dense than air (✓ ½ Mark) hence can’t be collected by downward delivery.

 (iii) Concentrated sulphuric (VI) acid (✓ 1 Mark) *reject if “concentrated” is missing.*

 (iv) - It’s colourless ✓

 - Odourless ✓

 - Less dense than air ✓

 *Any two for (½ mk) each*

9. lead (II) nitrate lead (II) oxide + nitrogen (IV) oxide +Oxygen gas

Colourless

Oduorless

Slightly soluble in water

Slightly denser than air

 - Oxyacetylene flame for welding ✓ ½ mark

 - In hospitals for patients with breathing difficulties ✓ ½ mark

 - In respiration ✓ ½ mark

 - When mixed helium it is used by deep sea divers and mountain climbers ✓ ½ mark

10.i Pipette

iiVolumetric flask

Measuring cylinder

Syringe

Burette (any three)

11. (a) Red ✓ ½ and blue ✓ ½

(b) By solvent extraction

(c) -Unequal solubilities

 - Different absorption abilities

13. i fractional distillation

ii Separating funnel

iii sublimation

(14) ***It acts as an impurity in the ice hence lowering its melting point. ✓ 1***

 ***(b) Salt accelerates the rate of rusting of the iron parts of the motor vehicles. ✓ 1***

***15.*** (a)

 Name ***Desiccator*** Name Evaporating dish

 Use ***Drying or keeping substances from moisture***

 Use ***Evaporating liquids to obtain crystals***

16.

* All the oxygen was used up

1000-800=200;

(200/1000)x100=20%

It can be separated by physical means

The components are not chemically combined