**PAPER 2**

**CHEMISTRY**

Form 4

Paper 2

**MARKING SCHEME**

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1. Noble gases
2. K and W
3. Q, it has lowest nuclear charge hence electrons in the energy level are least pulled towards the nucleus
4. Q3M2 or Mg3N2
5. Used for making sufuria /cooking pan

Property – good conductor of heat

1. Used for making overhead cables

Property – not easily corroded / good conductor of electricity (**penalize electrical cables**)



1. It has molecular structure with weak van der waals forces of attraction between the molecules which require little energy to break.
2. Butanoic acid
3. 2,5 \_ dibromo -4-methylpent-1,3-diene
4. Enthyl propanoate
5. P-soapy detergent

Q – soaplesss detergent

1. Q – does not form scum with hard water or it lathers easily
2. It is biodegradable
3. It is non-biodegradable hence pollutes the environment
4. Ethene
5. Ethanol and concentrated sulphuric (VI) acid
6. Top pan balance
7. Electronic balance
8. Beam balance
	* 1. Due to incomplete combustion, it produces white hot carbon particles that emittes a lot of light
		2. It produces soot that makes apparatus dirty
		3. It does not produce much heat
9. Nitrogen and oxygen
10. It can be separated by physical means

Components of air are not chemically combined

1. Pass air through lime water (Ca(OH)2) the lime water forms white precipitate indicating presence of carbon(IV)oxide
2. Frasch process
3. A – hot compressed air

C – super heated water

1. It has low boiling point

It is insoluble in water

1. Sulphur (IV)oxide
2. Catalytic chamber
3. Concentrated sulphuric (VI)acid
4. Water
5. H2S2O7(l) + H2O(l) H2SO4(l)
6. To remove impurities which may poison the catalyst
7. Manufacture of fertilizer
8. Manufacture of detergent
9. Manufacture of dyes and paints
10. Used in lead acid accumulators

(**any one correct**)

1. Zinc blende (penalize zinc sulphide )
2. ZnO
3. Reduction using carbon or carbon (II) oxide
4. It is converted to zinc sulphate and electrolyzed

{b}

* Sulphur {IV} oxides/SO2
* Carbon {IV} oxide /CO2

{c}

* Sulphur {IV} oxide leads to formation of acid rain
* Carbon oxide causes global warming

{d}

* Zinc is used to galvanise iron to prevent it form rusting
* To make brass an alloy of copper and zinc {any one correct}
1. {a}
* Electrolysis is the chemical decomposition of an electrolyte using electrical energy

{b}

* Complete the circuit by making contact between the two solutions
* Maintains balance of charges in electrolytes by providing ions to replace those that are used up or those that are formed

{c} {i} M – it has the most negative $E^{θ}$ value

 {ii} M and N

 {iii} E$φ$ =E$φ$ R-h-s

 +0.52 – [-2.69]

 =+3.21v

{ii} Q = 1 t

 =0.25 x 130x60

 =1950C

{iii} 1950C deposits 0.9g

 84g

 84x1950

 0.9

 =182,000C

1 F 96,500C

 182,000C

182000x1

 96500

 1.88 =2F

Charges is 2+

1. [a]
* Add magnesium oxide to HNO3/HCL/H2SO4 till in excess
* -Filter to obtain the filtrate
* -Add Na2CO3[any soluble carbonate] solution
* -Filter to obtain insoluble magnesium carbonate
* -Rinse and dry between filter papers

{b}

{i} NaHSO4 /KHSO4

{ii} Solid A – NaNO2/Sodium nitrate

 Gas B – O2/oxygen

{iii} Mixed with helium is used by mountain climbers and deep sea divers

* Air enriched with oxygen is used in hospitals by patients with breathing difficulties

{c}

* Availability
* Cost of fuel
* Heating value

{any two correct}