**CHEMISTRY PP1 MARKING SCHEME**

1. (a) Hydro-Carbon (1mk)

(b) fractional distillation (1mk)

(c) Used as a fuel (1mk

1. Dissolve KCL in water to form KCL solution. Then react KCL with Pb(NO3)(aq), the salt will react to form PbCL2 and KNO3. Filter to collect PbCL2 as a residue and KNO3 as filtrate. Dry the residue between two filter paper. (3mks)
2. (i) Magnesium Nitrate (Mg3N2) (1mk)

(ii) Ammonia (NH3) (1mk)

1. (a) magnetite, haematite, (1m)

(b) CaO(s)  + SiO2(s) CaSiO3(s)

( c) Making steel, making alloys.

1. Anode
2. 2CL- (aq) + 2e- CL2(g) (1mk)
3. Q = IT

 = 0.5 × 5 × 3600

 = 9000 colu (1mk)

1 mole 96,500C

 ? 9,000C

1 × 9000 = 0.093Mole (½ mk)

 96,500

Mass = 0.093 × 207

 = 19.3g (½ mk)

1. (a) Nuclear fussion – Splitting up of heavy nucleid to form small nucleid with absorption of energy. (1mk)

Nuclear fission – Joining of simple nucleid to form a heavy nucleid with a release of energy. (1mk)

(b) Helium particle $$ (1mk)

1. R.A.M. = (36 × y) + (40 × 4) (1mk)

 y + 4

37.25(y + 4) = 36y + 160

37.25y = 36y + 160 – 149

37.25 – 36 =160-149

1.25y = 11 (1mk)

Y = 11/1.25

≈ 8.8

≈ 9 (1mk)

1. (i) T has a layer atomic radius compared to Y since Y has a greater nucleus pull hence small atomic radius. It has more protons than T. (1mk)

(ii) E2+ + Z-1 E1Z2 or

 Mg(s) + CL2(g) MgCL2(s)

(iii) Element S

1. (a) The rate of diffusion of a gas is inversely proportional to the square root of its density at constant temperature and pressure.
2. V1 – 120cm3 V2 – 240cm3

T1 – 40Sec T2 - ?

N2 – 28 CO2 – 44

 $\frac{R1}{R2}\sqrt{\frac{MMR2}{MMR1}}$

 $\frac{\frac{120}{40}}{\frac{240}{T2}}=\sqrt{\frac{44}{28}}$

 $\frac{\frac{B}{240}}{T2}= \sqrt{1.57}$

 $\frac{\frac{B}{240}}{T2}$ = 1.25

 3 = 1.25 × 240

 T2 = 1.25 × 240

 3

 T2 = 100.24Sec

1. (i) KClO3 (1mk)

 30 – 12 = 18g (1mk)

(ii) Fraction crystallization (1mk)

(iii) Na2CO3 (1mk)

1. (i) Sulphur (s)

(ii) Iron (II) Iodide solution

(iii) PbCL2/Lead (II) Chloride

1. (a) The time taken for a radio-active substance to disintegrate to half its original mass.

(b) 45 days

1. Element C H O

%mass 24.27 4.08 71.65

R.A.M 12 1 16

No. of moles 24.27 4.08 71.65

 12 1 16

 2.02 4.08 4.4

Mole ratio 2.02 4.08 4.4

 2.02 2.02 2.02

 1 2 2

E.F.: C1H2O2 E.F.M. = 46

M.F. = 99 (M.F.M

 46 (E.F.M)

 = 2

M.F. = 2(CH2O2)

 = C2H4O4

1. (a) Na2SO3 – Sodium Sulphite

(b) Denser than air

(c) Does not react with liquid S

(d)

* Catalyst (V2O5)
* Temp. 450ºC
* Pressure 2-3 atm

Any

1. (a) Solution D (1mk)

(b) Turns to pink; Solution A is strong base (2mks)

1. (a) They have mobile electrons (1mk)

(b) – Light (1mk)

 - Does not react with Weather conditions++

17). i) 300C

 ii) Particles gain energy as temperature rises. The energy absorbed is used to weaken the forces holding the particles together.

18). i) Platinium-rhodiun

 ii) Pale blue solution form, the deep blue solution

19). i) CO2 +C(g)→2CO(g)

ii) Conc. NaOH/ sodium hydroxide.

20). a) Zn(s) + 2HCl(aq) →Zncl2(aq) +H2(g)

b) Conc. H2SO4/Conc. Sulphuric(vi) acid.

c) Copper does not react with dilute acids.

21) 1000→0.1 moles

 26.8→?

 = $\frac{0.1×26.8}{1000}$

 =0.00268

Equation K2CO3 +2HCl(aq)→KCl(aq)+CO2(g)+H2O(l)

2mol. →1mol K2CO3

Therefore 0.00268→? =$\frac{1×0.00268}{2}$

 =0.00134moles

Thus 0.00134 moles →25.0cm3

 ? ←1000cm3

=$\frac{0.00134×1000}{25 }$

 =0.0536M

22) (i) Equilibrium shifts to the left ie more of pale yellow decomposed to form brown.

 ii) Equilibrium will shift to the right ie more of brown to form pale-yellow ie (N2O4)

23 a) A white ppt is formed . This is due to formation of Agcl ie

AgNO3+HCL(aq) →AgCl(s) + HNO3(aq)

b) Ag+ (aq) +Cl- (aq) →AgCl(s)

24 a) (i) propylethanoate

 ii) Acidified KMnO4/Acidified K2Cr2O7

b) i)CH3CH2CH2COOH→ butanoic acid

ii) CH3CH2OH → Ethanol

25. In A the glowing splint relight

B the splint did not relight

Because : In B the Oxygen had already excaped due to its density.

 H H H H H H H

26. H-C=C-C-C-H(g) +H−H (g) → H− C-C-C-C-H(g)

 *H H H H H H H*

27.a) Alkali metals. They have one electron in their outer energy level.

b) It has only 2 energy levels thus its electrons are close to the nucleus to remove great amount of energy is required.