**SET 7**

**CHEMISTRY PAPER TWO**

**MARKING SCHEME**

1. A)
2. K (1 mark)
3. PL2 (1 mark)
4. …. (1 mark)
5. O (1 mark)

B)

1. (2 marks)

T = 20

Q = 9

1. W , X (1mark)
2. R, V (2 marks)

C)

* 1. (2 marks)
* It looses an electron. Remaining electrons are attracted strongly by the nuclear charge.

1. (2 marks)

* Good conductor die to through delocalized electrons
* Forms a layer of oxide
* High melting point

1. a)
2. Pent-2-ne (1 mark)
3. Butaneic acid (1 mark)

b) (1 mark)

1. Substitution
2. Addition
3. 2C4H10(g) +13O2(g)

c)

2C4H10(g) + 13O2(g)  3 CO2(g) + 10H2O

1. Carbon (iv) oxide produced dissolves in water farming acid solution

d)

1. Process where monomers combine to form a large molecule (polymer)(1 mark)
2. .
3. (2 marks)

* Cheap
* Readily available
* Corrosion resistant
* Moulded into various shapes.

e) .

1. Propy/ethanoate (1 mark)
2. Esterification (1 mark)
3. A.
4. G- it has the highest reduction potential. (1 ½ mark)
5. G and N (1 mark)
6. It can’t displace “M” is below N in the reactivity series. The E Ø value is negative -2.92 – (-0.44) = -1.42v.

B.

4OH- (aq) O2(g) + 2 H2O(l) + 4e-

1. Insert burning splint in a gas jar. It is extinguished with a pop sound
2. (i) Hydrogen is monoralent an oxygen is divalent. (1 mark)

Two volumes of H2 are produced and one volume of oxygen

(ii) Bulb is less bright because ethanoic acid is a weak acid hence ionizes partially

C)

= It 0.5 x 2 x 3600

= 3600 c

2 x 96500 c 207 g

3600 ?

3600 x 207

2 x 96500

= 3.8611

1. a)
2. Graphite or titanium – they do not react with chlorine. (2 marks)
3. A steel diagram is suspended between the electrodes. (1 mark)
4. 2 Cl(aq) Cl2(g) + 2e-

b)

1. Calcium chloride. (1 mark)
2. It is economical – reduces cost of production (1 mark)

c)

* Hydrogen I preferentially discharged instead of sodium. If the anode hydroxyl ions will be preferentially discharged. (2 marks)

d)

* Na2O (2 marks)
* Na2O2

e)

1. Sodium cyanide used in extraction of gold (2 marks)
2. Alloy of lead and Na and K used as coolant in nuclear reactants
3. a)

* The heat change that occurs when are mole of a substance is formed from its constituent gaseous atoms. (1 mark)

b) (i)

* Enthalpy of combustion of hydrogen. (2 marks)
* Enthalpy of formation of water

(ii)

C2H6 (g) +7/3 O(aq)

-1560KJ/mol

2Co2(g) +3H2o(l)

(iii) (2 mark)

2 x (- 894) + 3(-286) – (-1560)

788 – 858 + 1560 = 86KJ/mol

(iv) (2 marks)

500 x 21.5 x 42

1000

= 451.5

45.15 x 30

1560

= 0.868 g

1. a) (2 marks)

* Maximum mass of a solute that dissolves in 100g of water at a fixed temperature.

1. (3 marks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 50 | 44.44 | 40 | 36.36 | 13.33 | 30.77 |

1. Plotting the graph (3 marks)
2. (1 mark)

42.5 g ± 0.1

70-C 10-C 48.3-31.8

48.3 31.8

= 16.4 g ±0.1

Moles = 42.5

74.5

= 0.5705

0.5705 100

? 1000

= 5.705

c)

1. Ion exchange (1 mark)
2. Adding concentrated sodium chloride. (1 mark)
3. Strong bones (1 mark)

Manufactur e of beer

1. Copper pyrites. (1 mark)

Galena

Zinc sulphide

1. Carbon (iv) oxide (1 mark)

Dust particles

1. To prevent poisoning of catalyst. (1 mark)

C. i.

* 1. Less SO3  will be produced (backward reaction will be favored ) (1 mark)
  2. Less SO2 will be produced (backward reaction will be favored) (1 mark)

ii). Vanadium (v) oxide

* it is cheap
* Not easily poisoned

iii). It causes acidic rain which corrodes the metallic structure