

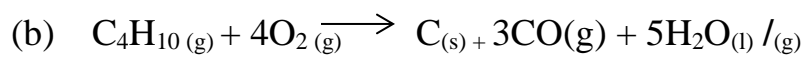
Bokake
CHEMISTRY PAPER 1
TERM 2

Marking Scheme

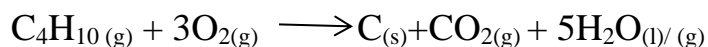
1(a) When air hole is completely/fully closed.

1Mrk

If filly/completely mentioned If not mentioned penalize fully



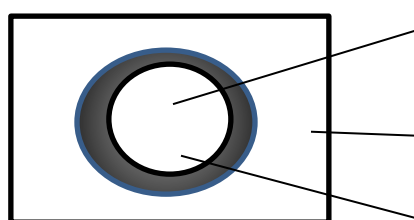
Or



1Mrk

No state penalize 1/2
 Not balanced penalize fully
 Water can be liquid or gas.

(c)



Unburnt Region
 1/2

Paper

Charmed region 1/2

1mrk

A diagram must be well labeled
 Mention burnt and not burnt region

Or

Slip a piece of paper across the middle point of the flame. Several times. Remove and observe 1/2
 The central part remains unburnt while other part burns. 1/2 Accept wooden splint

2(a) Metallic bond

1mrk

(b) Group I (1mrk) Each action contains one electron in the outermost energy level (1mrk)

2mkrs

3 (a) (i) Alpha (a)

1mrk

(b) Betta (-Ie)

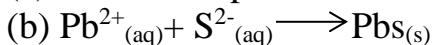
1mrk

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- (b) Cancer treatment
 - Detecting cracks in metals
 - Carbon dating of plants and animals

4(a) Black Precipitate

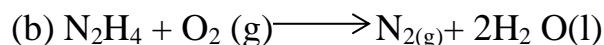
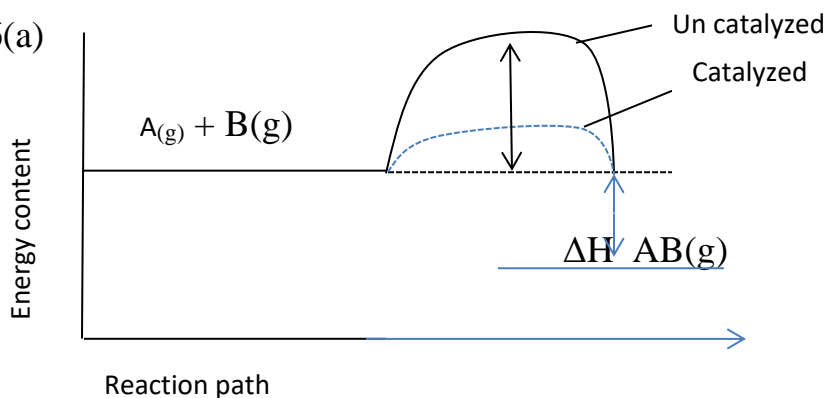


5 (a) Anhydrous calcium chloride

(b) Black CuO changes to brown solid and Colorless liquid forms on parts of the combustion tube.

(c) Hydrogen reduces CuO to copper metal
 And H_2 is oxidized to water

6(a)



Bond Breaking

$4 \times 388 = 1552$

1×163

$1 \times 496 = 496$

+2211 kJ

Bond Formation

$1 \times 944 = 944$

$4 \times 464 = 1856$

-2800 kJ

$\Delta H = -589 \text{ kJ}$

7(a) A - chlorine

B - Hydrogen

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Any
1mrk

1mrk

1mrk

1mrk

1mrk

Penalize ½ if no symbol or if they are wrong
 If not balanced penalize fully

(b) If initial and final colour is not mentioned penalize fully

Any

1mrk

1mrk

Catalyzed must be below that of un catalyzed

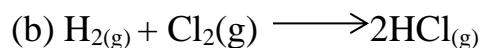
3mrks

½

½

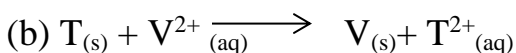
1mrk

1mrk

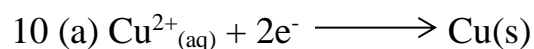


(c) To increase surface area for dissolution/ of hydrogen Chloride gas in water and to No prevent sucking back.

8(a) S, Hydrogen, V, T

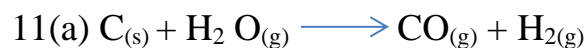


9 Crush the tablet with mortar and pistle $\frac{1}{2}$, add water stir To dissolve $\frac{1}{2}$, add the universal indicator $\frac{1}{2}$, match the Color with that of *PH* chart $\frac{1}{2}$, determine the *PH*



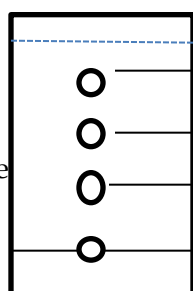
(b) 63.5g of Cu \longrightarrow (96500x2)C
 Thus 1.184g Cu = 1.184g x $\frac{193000}{63.5}$
 = 3598.66

Quantity = It \longrightarrow 3598.66
 $2t = \frac{3598.6}{2}$
 = 1799.3 Sec
 = 30 sec



(b) Reducing agent
 Together with oxygen is used as fuel

12(a)



Blue $\frac{1}{2}$

Orange $\frac{1}{2}$

Red $\frac{1}{2}$

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ge 3 of 7

2mrk

1mrk

3mrks

1mrk

1mrk

1mrk

1mrk

2mrks

1 1/2

Mark
consequentially.

Equation must
be balanced if
not penalize
fully

Award $\frac{1}{2}$ if state
is not given/
missing

[sch](#)

(b) Wash the blue spot in the chromatogram with plenty of water $\frac{1}{2}$

Evaporate the water to obtain the dye $\frac{1}{2}$

(c) Ethanol/ Propanol/acetone/ propanone

1mrk

13(a) Source of heat

2mrks

(b) The solid Pb Br_2 melts to form Pb^{2+} and Br^- $\frac{1}{2}$

These mobile ions $\frac{1}{2}$ conducts electric current $\frac{1}{2}$ Then

Bulb lights $\frac{1}{2}$

$\frac{1}{2}$

14 Mass of $\text{KClO}_3 = 16.86 - 15.86 = 1\text{g}$ $\frac{1}{2}$

Mass of water = $26.86 - 16.86 = 10\text{g}$ $\frac{1}{2}$

1g of KClO_3 saturates 10g of water at 30°C $\frac{1}{2}$

$X_{(g)}$ of K ClO_3 saturates 60g of water at $30^\circ\text{C} = \frac{60 \times 1}{10} = 6\text{g}$ $\frac{1}{2}$

Mas of saturated solution = $6 + 60$
= 66g

$\frac{1}{2}$
 $\frac{1}{2}$
 $\frac{1}{2}$ } 2

1mrk

15(a) (i) 2, 2 – dimethyl propane

1mrk

(ii) Pent – 2 – yne

1mrk

(b) Add acidified KMnO_4 solution to both separately
 $\text{CH}_3\text{C} = \text{CCH}_2 \text{CH}_3$ will change purple acidified KMnO_4

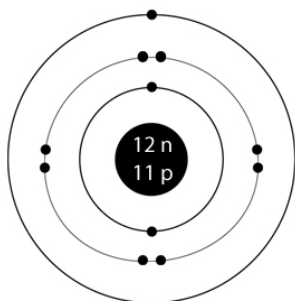
1mrk

Colourless , add bromine water changes from yellow to
colourless

1mrk

Acidified potassium dichromate (VI) changes from orange to
Green $\text{CH}_3 (\text{CH}_2)_2 \text{CH}_3$ doesn't $\frac{1}{2}$

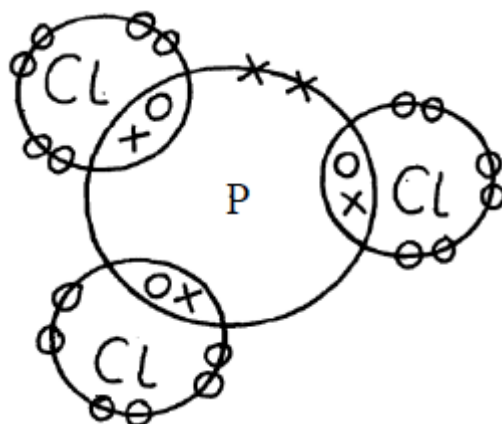
16 (a)



2Mrks

11P $\frac{1}{2}$
 12N $\frac{1}{2}$ 3 energy levels $\frac{1}{2}$
 11 electrons $\frac{1}{2}$

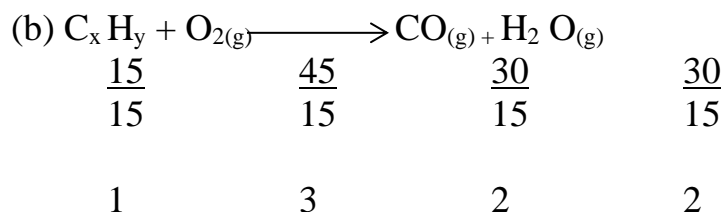
(b)



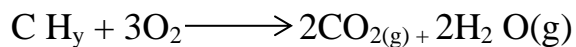
1mk

17 (a) When gases react they do so in volumes which bears Simple whole number ratio to one another and to the Volume of products if gaseous when temperature and pressure remains constant $\frac{1}{2}$

1mrk



$\frac{1}{2}$



1mrk

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$\frac{1}{2}$

[hoc](#)



18 (a) $\frac{-92.4}{2} = -46.2 \text{ kJ mol}^{-1}$ *penalize 1/2 for missing sign or wrong units* 1mrk

(b(i) Lowers the yield 1/2 forward reaction is exothermic/
Backward reaction is endothermic 1/2 2mrks

Penalize for backward reaction is favoured

(ii) No effect 1/2 catalysts have no effect on the position of
Equilibrium. 1/2

19(i) $4\text{Fe}_{(s)} + 3\text{O}_{2(g)} + n\text{H}_2\text{O} \longrightarrow 2\text{Fe}_2\text{O}_3 \cdot n\text{H}_2\text{O}$ 1mrks

(ii) 6th day 1/2, volume of air remains constant 1/2 1mrks

(iii) % of oxygen gas = $\frac{2000 - 1600}{2000} \times 100$ 1/2

=20% 1/2

1mrk

20 (i) 2. 8. 3

1mrk

2. 8. 6

1mrk

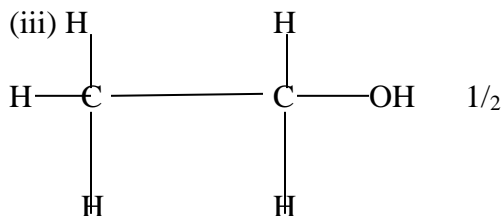
(ii) P_2Q_3

21 (i) Ethyl propanoate

1mrk

(ii) Ester/ Alky/alkanoate

1mrk



1mrk

Ethanol 1/2

2mrk

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1mrk

22 Gas m is lighter than air hence creating low pressure, water will rise to occupy space left as gas m escapes to the atmosphere. Gas N is denser than air so air enter the porous pot hence increasing the pressure hence pushing water down. 1mrk

23 (a) Nitric acid is a strong oxidizing agent and attacks rubber corks and rubber tubes.

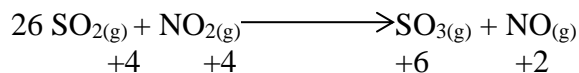
(b) Contain dissolved nitrogen (IV) oxide which reacts from decomposition of nitric (V) acid

24 Heat copper metal in air to form copper (II) oxide, 1mrk, React excess copper (II) oxide with dilute $H_2SO_{4(aq)}$ to obtain copper (II) sulphate solution. 1mrk Heat the solution to Saturation $\frac{1}{2}$ and allow it to cool to form copper (II) sulphate Crystals $\frac{1}{2}$

25 (a) Malleable material that can be hammered into sheets while ductile is the material that can be drawn into wires

(b) (i) Used in making of cooking utensils.

(ii) Used to make overhead cables



Oxidation number of sulphuric increases from +4 to +6

Oxidation of number of nitrogen decreases

(ii) Sulphur – dioxide/ SO_2

2mrks

2mrks

1mrk

1mrk

1mrk