FORM 5 CHEMISTRY
Marking Scheme for Papers 1, 2 and 3
### Paper 1

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<tr>
<td>50</td>
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</tbody>
</table>
Paper 2- Section A

1. (a) 17
   1

   (b) (i) 2.7
       1

   (ii) 2.8.7
       1

   (c) (i) 2
       1

   (ii) 3
       1

   (d) 36
       1

   17 Q
       1

   (e) (i) increase
       1

   (ii) decrease
       1

   (iii) increase
       1

(f) \[2 \text{Fe} + 3 \text{Q}_2 \rightarrow 2 \text{FeQ}_3 / 2 \text{Fe} + 3 \text{Cl}_2 \rightarrow 2 \text{FeCl}_3\]

   Total 10 marks

2. (a) The formula that gives the simplest whole number ratio of atoms of each element in a compound.

   1

   (b) \(\text{H}_2\text{SO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 + \text{H}_2\) / any suitable reaction between an acid and a metal

   1

   (c) (i) mass of copper = 47.70 - 25.30 / 22.40
       mass of oxygen = 53.30 - 47.70/ 5.60

       1

   (ii) 1. \[
\frac{22.40}{64} : \frac{5.60}{16}\n\]

       2. 0.35 : 0.35

       1 : 1

       1

   (iii) CuO

       1

   (iv) \(\text{H}_2 + \text{CuO} \rightarrow \text{Cu} + \text{H}_2\text{O}\)

       1
1. Set up of apparatus complete and functional  
2. Labels correct  

Total 10 marks

3. (a) (i) L$^+$  
(ii) E$^{2-}$  

(b) 1. G  
2. Electron arrangement for G is 2.8 // outermost shell is fully occupied with electrons/ is full with electrons.  

(c) (i) ionic bond  
(ii) LJ r: JL  
(iii) [able to draw the diagram of electron arrangement correctly]  

1.[all electrons and shells shown correctly]  
2. [ atoms labeled and charges shown]  

(iv) 1.In aqueous solution // molten state  
2.Ions can move freely//free to move  

Total 10 marks
4. (a) \( \text{SO}_4^{2-}, \ \text{OH}^- \)  

(b) (i) \( \text{Cu} \rightarrow \text{Cu}^{2+} + 2\text{e}^- \)  

(ii) \( \text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu} \)  

(c) (i) Remains unchanged  

(ii) 1. The rate at which copper (II) ions produced at the anode is equal to the rate at which copper (II) ions are discharged at the cathode.  
2. So, the final concentration of the copper (II) sulphate solution remains unchanged.  

(d) (i) oxygen  

(ii) copper  

(e) 1. moles of gas = \( \frac{24}{24000} \) / 0.001  

2. number of molecules = 0.001 \( \times \) \( 6.02 \times 10^{23} \)  
\[ = 6.02 \times 10^{20} \]  

10 marks

5 (a) (i) Oxygen  

(ii) Nitrogen dioxide  

(iii) Lead (II) oxide  

r : symbol  

(b) Put a glowing wooden splinter into the test tube.  
The glowing wooden splinter is lighted up  

(c) (i) Lead (II) ion  

(ii) \( \text{Pb}^{2+} + 2\text{OH}^- \rightarrow \text{Pb(OH)}_2 \)  

(iii) Lead (II) hydroxide  

(d) (i) Yellow precipitate is formed  

(ii) Double decomposition reaction/precipitation  

Total 10 marks
6 (a) A polymer is a large long-chain molecule formed by joining together many small monomer molecules.  
1
(b) Starch / cellulose  
1
(c) (i) protein : amino acid  
1
(ii) polyethylene : ethene  
1
(d) 
\[
\begin{array}{c}
\text{n C} \\
\text{polimerization} \\
\text{H H}
\end{array}
\rightarrow
\begin{array}{c}
\text{H H} \\
\text{C C} \\
\text{H H}
\end{array}
\] 
1+1
(e) Natural rubber/ wood/ cotton/ any suitable example  
1
(f) Petroleum.  
1
(g) [Any one of the following two:]  
1
- PVC is non-biodegradable. Thus, it can cause blockage of drainage system (as such it causes flash flood)
- Burning of PVC produces hydrogen chloride gas which is poisonous and acidic.
(h) Replacement for glass, lenses and optical fibres/ any suitable use  
1
10 marks
Paper 2-Section B

7. (a)

<table>
<thead>
<tr>
<th>No</th>
<th>Refrigerator</th>
<th>Kitchen cabinet</th>
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<tbody>
<tr>
<td>1</td>
<td>Low temperature</td>
<td>High temperature / Room temperature</td>
</tr>
<tr>
<td>2</td>
<td>Bacterial activity low / Bacteria inactive</td>
<td>Bacterial activity high / Bacteria active</td>
</tr>
<tr>
<td>3</td>
<td>Bacteria produces very little toxin</td>
<td>Bacteria produces a lot of toxin</td>
</tr>
<tr>
<td>4</td>
<td>Rate of decaying of food is low</td>
<td>Rate of decaying of food is high</td>
</tr>
</tbody>
</table>

(4)

(b)(i) Average rate of reaction for Experiment I = \( \frac{50}{60} = 0.833 \text{ cm}^3 \text{ s}^{-1} \) (1+1)

(b)(ii) Between experiment I and II

1. The rate of reaction in Experiment II is higher 1
2. The temperature in Experiment II is higher 1
3. At higher temperature, the kinetic energy of the particles is higher / particles move at a greater speed. 1
4. Frequency of collision between hydrogen ions ions and zinc atoms increases. 1
5. The frequency of effective collisions increases. 1 5

Between Experiment II and III.

6. The rate of reaction in Experiment III is higher. 1
7. The size of solid zinc is smaller 1
8. The total surface area of zinc in Experiment III is larger. 1
9. The frequency of collision between hydrogen ions and zinc atoms increases. 1
10. The frequency of effective collisions increases 1 5

7. (b)(iii)

1. No. of moles of HCl = \( \frac{0.5 \times 25}{1000} = 0.0125 \) 1
2. 2 moles of HCl produce 1 mol of H₂ 1
3. No. of moles of H₂ = \( \frac{0.0125}{2} = 0.00625 \) 1
4. Volume of H₂ = \( 0.00625 \times 24 = 0.15 \text{ dm}^3 \) 1 4

TOTAL 20
8. (i) P – 2.8.2
Q - 2.4

1 2

(b) (i) Between P and R

1. Atom P has 2 valence electrons
2. Atom P loses/donates/transfers 2 electrons to achieve a stable octet structure/
   Stable electron arrangement / diagram
3. To form ion P^{2+} / P \rightarrow P^{2+} + 2e^{-}
4. Atom R has 6 valence electrons
5. Atom R gains/receives 2 electrons from atom P to achieve a stable
   octet structure/Stable electron arrangement/diagram
6. to form ion R^{2-} / R + 2e^{-} \rightarrow R^{2-}
7. The two oppositely-charged ions are bonded together by
   a strong electrostatic force to form an ionic bond

The P^{2+} ions and R^{2-} ions formed are bonded together by ionic bonds to form an ionic
compound with a formula of PR

8. (ii) Between Q and R

1. Atom Q has 4 valence electrons and atom R has 6 valence electrons.
2. Two atoms of element R will each contribute 2 electrons from the valence shell to an
   atom Q
3. for sharing so as to achieve a stable octet structure/stable electron arrangement
   respectively//diagram
4. Atoms P and Q share two pairs of electrons to form a PQ_{2} molecule through double
   covalent bonds

Molecules PQ_{2}
(c) 1. Aluminium oxide has high melting and boiling point  
2. Tetrachloromethane has low melting and boiling point  
3. The oppositely-charged aluminium ions and oxide ions in aluminium oxide are held together by strong ionic bonds (or electrostatics forces of attraction)  
4. A lot of heat energy is required to break the strong ionic bonds during melting and boiling thus it has high melting and boiling points  
5. Tetrachloromethane consists of covalent molecules held together by weak forces of attractions (Van der Waals)  
6. Only a small amount of heat energy is needed to overcome the weak forces between the molecules thus it has low melting and boiling points  

Total 20 marks
Paper 2 Section C

9  (a)  (i)  Double bonds between 2 carbon atoms 1

(ii)  C\textsubscript{5}H\textsubscript{10}, pentene 1+1

(iii)  Any three of the following isomers. 1+1+1

\[
\begin{align*}
\text{C} & \quad \text{H} \\
\text{C} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\text{C} & \quad \text{C} \\
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\text{C} & \quad \text{C} \\
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\end{align*}
\]
(b) 1. Diagram of set up of apparatus complete and functional 1
2. Labels of set up of apparatus correct 1
3. Place some glass wool in a boiling tube. 1
4. Use a dropper to add propan-1-ol to wet the glass wool. 1
5. Clamp the boiling tube horizontally and placed unglazed porcelain chips in the mid section of the boiling tube. 1

![Diagram of setup](image)

6. Heat the unglazed porcelain chips strongly. 1
7. Then heat the glass wool gently to vaporize the propanol. 1
8. [Description of the chemical test to the gas collected in the test tube.] 1
   Add 1 cm$^3$ of bromine water and shake well.
   Or,
   Add 1 cm$^3$ of acidified potassium manganate(VII) solution and shake well.

9. [Observation]: 1
   Reddish brown colour of bromine decolourised.
   Or,
   Purple colour of potassium manganate(VII) solution decolourised

10. Chemical equation: C$_3$H$_7$OH $\rightarrow$ C$_3$H$_6$ + H$_2$O 1

(ii) 1. Propane. 1
2. [Calculation of percentage of carbon by mass for propane and value] 1
3. [Calculation of percentage of carbon by mass for propene and value] 1
4. [Conclusion] Propene has a higher percentage of carbon by mass, so propene produces more soot. 1

Total 20 marks
Marking Scheme for Mid-Year Examinations 2007 Form 5 Chemistry Papers 1,2,3

10

(a) 1. Use a pipette to draw up 25 cm$^3$ of an alkali (eg: sodium hydroxide) 1
2. Transfer sodium hydroxide solution into a conical flask. 1
3. Add 2-3 drops of indicator (eg: phenolphthalein) 1
4. Fill a burette with a standard acid solution (0.1-2.0 mol/dm$^3$ hydrochloric acid) and record initial burette reading. 1
5. Add acid solution from the burette drop by drop into the alkali solution. 1
6. The mixture is continuously shaken. 1
7. Continue adding an acid solution until a permanent colour change of indicator is observed (eg: pink to colourless) 1
8. Record final burette reading. 1
9. [Result]
   Initial reading of burette = $x_1$ cm$^3$
   Final reading of burette = $x_2$ cm$^3$
   Volume of acid required = $x_2 - x_1 = x$ cm$^3$ 1
10 [Chemical equation] 1
11 $\frac{M_1V_1}{a} = \frac{M_2V_2}{b}$ 1
12 $M_1 = \frac{aM_2V_2}{bV_1}$ mol dm$^{-3}$ 1

(b) 1. Copper (II) oxide is added into a beaker filled with nitric acid solution and is heated 1
2. Stir the mixture during heating 1
3. Filter the mixture to remove excess solid 1
4. The filtrate is filled into a beaker and is added with sodium carbonate. 1
5. Stir and then filter the mixture. 1
6. Rinse the residue collected using distilled water. 1
7. Dry the residue 1
8. Chemical equations:
   CuO + 2HNO$_3$ $\rightarrow$ Cu(NO$_3$_2) + H$_2$O 1
   Cu(NO$_3$_2) + Na$_2$CO$_3$ $\rightarrow$ CuCO$_3$ + 2NaNO$_3$ 1

Max 8

TOTAL 20 MARKS

END OF MARKING SCHEME FOR PAPER 2
PAPER 3

1 (a) KK0503 – Measuring and using numbers

<table>
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<tr>
<th>Score</th>
<th>Rubric</th>
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</table>
| 3     | [ Able to state all 5 readings correctly ]
|       | Suggested answer:
|       | 43s, 26s, 19s, 15s, 12s |
| 2     | [ Able to state any 4 readings correctly ] |
| 1     | [ Able to state any 3 readings correctly ] |
| 0     | No response or wrong response |

Suggested answer:

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
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<tbody>
<tr>
<td>Time (s)</td>
<td>43</td>
<td>26</td>
<td>19</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>(\frac{1}{\text{time}}) (s(^{-1}))</td>
<td>0.023</td>
<td>0.038</td>
<td>0.053</td>
<td>0.067</td>
<td>0.083</td>
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(b) KK0506 – Communicating

<table>
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<tr>
<th>Score</th>
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</table>
| 3     | [ Able to design a table and record the temperature, time and correctly for this experiment. ]
|       | Suggested answer: |
|       | Temperature (°C) | 30 | 35 | 40 | 45 | 50 |
|       | Time (s) | 43 | 26 | 19 | 15 | 12 |
|       | \(\frac{1}{\text{time}}\) (s\(^{-1}\)) | 0.023 | 0.038 | 0.053 | 0.067 | 0.083 |
| 2     | [ Able to state any 4 readings correctly ] |
| 1     | [ Able to state any 3 readings correctly ] |
| 0     | No response or wrong response |
(c) KK0506 Communicating

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
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</table>
| 3     | [ Able to draw a graph of temperature against $\frac{1}{\text{time}}$ with all the 4 items below correctly ]  
   i) suitable scale used  
   ii) axes labelled correctly  
   iii) all points plotted correctly  
   iv) straight line of best fit drawn |
| 2     | [ Able to draw a graph of temperature against $\frac{1}{\text{time}}$ with at least 3 items correctly ] |
| 1     | [ Able to manipulate two items correctly ] |
| 0     | No response or wrong response |

(d) KK 054 – Making inference

<table>
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</table>
| 3     | [ Able to deduce the relationship between the rate of reaction and temperature correctly ]  
   i) temperature is directly proportional to $\frac{1}{\text{time}}$  
   ii) Rate of reaction is directly proportional to $\frac{1}{\text{time}}$  
   iii) So, rate of reaction is directly proportional to temperature |
| 2     | [ Able to deduce at least two relationships correctly ] |
| 1     | [ Able to state at least one relationship correctly ] |
| 0     | No response or wrong response |
### (e) KK 0505 - Predicting

<table>
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<th>Rubric</th>
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<tr>
<td>3</td>
<td>[ Able to predict the time taken for the required temperature accurately ]</td>
</tr>
<tr>
<td></td>
<td>i) Method of predicting shown on the graph</td>
</tr>
<tr>
<td></td>
<td>ii) Calculation shown</td>
</tr>
<tr>
<td></td>
<td>iii) Answer to one decimal place</td>
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</tbody>
</table>
|       | iv) Time taken = \[
|       | \frac{1}{0.064} = 15.6s \] |
| 2     | [ Able to predict the time taken for the required temperature but inaccurate answer ] |
|       | i) Method of predicting shown on the graph |
|       | ii) Calculation shown |
|       | iii) Answer inaccurate |
|       | iv) Time taken = \[
|       | \frac{1}{0.064} = 15.625s \text{ or } 15.63s \] |
| 1     | [ Not able to predict the time taken for the required temperature correctly ] |
|       | i) Method of predicting shown on the graph |
|       | ii) Calculation not shown |
|       | Time taken = 0.064s |
| 0     | No response or wrong response |
2  (a) KK0510 – Controlling variables

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<tr>
<td>3</td>
<td>[Able to give 3 correct and complete variables]</td>
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<tr>
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<td>Suggested answer:</td>
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<tr>
<td></td>
<td>Manipulated variable : The concentration of ammonia solution.</td>
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<tr>
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<td>Respond variable : pH value</td>
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<tr>
<td></td>
<td>Fixed variable : Volume of ammonia solution</td>
</tr>
<tr>
<td>2</td>
<td>Able to give 2 correct and complete variables // 3 incomplete variables</td>
</tr>
<tr>
<td>1</td>
<td>Able to give one correct and complete variable // 2 incomplete variables</td>
</tr>
<tr>
<td>0</td>
<td>No response or wrong response</td>
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</table>

(b) KK0511- Making hypothesis

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<th>Rubric</th>
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<tbody>
<tr>
<td>3</td>
<td>[Able to give correct and complete relationship]</td>
</tr>
<tr>
<td></td>
<td>Suggested answer:</td>
</tr>
<tr>
<td></td>
<td>The higher the concentration of hydroxide ions, the higher the pH value.</td>
</tr>
<tr>
<td>2</td>
<td>[Able to give incomplete relationship]</td>
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<tr>
<td></td>
<td>Suggested answer:</td>
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<tr>
<td></td>
<td>The concentration of hydroxide ions is directly proportionally to the pH value.</td>
</tr>
<tr>
<td>1</td>
<td>[Able to give an idea]</td>
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<tr>
<td></td>
<td>Suggested answer:</td>
</tr>
<tr>
<td></td>
<td>The concentration of hydroxide ions affect the pH value</td>
</tr>
<tr>
<td>0</td>
<td>No response or wrong response</td>
</tr>
</tbody>
</table>
(c) KK0509 – Operational definition

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
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</thead>
</table>
| 3     | [Able to give correct and complete operational definition]  
Suggested answer:  
Ammonia solution has a low concentration of hydroxide ions // Sodium hydroxide has a high concentration of hydroxide ions. |
| 2     | [Able to give incomplete relationship]  
Suggested answer:  
Ammonia solution partially ionises in water to produce low concentration of hydroxide ions // Sodium hydroxide completely ionises in water to produce high concentration of hydroxide ion. |
| 1     | [Able to give an idea]  
Suggested answer:  
Ammonia solution / Sodium hydroxide has pH value more than 7. |
| 0     | No response or wrong response |

(d) KK0505 – Predicting

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to predict accurate pH value].  
Suggested answer:  
Range 7.5 < pH < 8.0 |
| 2     | [Able to predict but inaccurate pH value]  
Suggested answer:  
Range 7.0 < pH < 7.5 |
| 1     | [Able to give an idea.]  
Suggested answer:  
Range 1.0 – 14.0 |
|       | No response or wrong response |
(e) KK0506 - Communicating

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to give accurate ionisation equation.]  
**Suggested answer:**  
\[ \text{NH}_4\text{OH} \rightarrow \text{NH}_4^+ + \text{OH}^- \] |
| 2     | [Able to give inaccurate ionisation equation.]  
**Suggested answer:**  
\[ \begin{align*}  
\text{H}_2\text{O} & \rightarrow \text{H}_3\text{O}^+ + \text{OH}^- \\
\text{NH}_3 & \rightarrow \text{NH}_4^+ + \text{OH}^- 
\end{align*} \] |
| 1     | [Able to give an idea.]  
**Suggested answer:**  
\[ \text{NH}_3 \rightarrow \text{NH}_4^+ + \text{OH}^- \] |
| 0     | No response or wrong response |

(f) KK0507 - Using the relationship of space and time

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to give correct and complete statement.]  
**Suggested answer:**  
The higher the concentration of acid, the lower the pH value. |
| 2     | [Able to give incomplete statement.]  
**Suggested answer:**  
The concentration of acid is directly proportional to the pH value. |
| 1     | [Able to give an idea ]  
**Suggested answer:**  
The higher the concentration of acid, the higher the pH value. |
| 0     | No response or wrong response |
3 (a) KK051201 - Problem statement

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to state the problem statement clearly and accurately]  
**Suggested answer**  
How does the reactivity of Group 1 elements change when they react with water? |
| 2     | [Able to state the problem statement slightly inaccurate]  
**Suggested answer**  
To study the reactivity of Group 1 elements. |
| 1     | [Able to provide an idea of a problem statement]  
**Suggested answer**  
The reactivity of Group 1 elements. |
| 0     | No response or wrong response |

3 (b) KK051202 – Stating all variables

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to state all the corresponding variables accurately]  
**Suggested answer**  
Manipulated variable : Type of Group 1 metals  
Responding variable : Reactivity of reaction  
Fixed variables : Water, size of metals |
| 2     | [Able to state two corresponding variables accurately]. |
| 1     | [Able to state any one corresponding variable correctly]. |
| 0     | No response or wrong response |
### List of materials and apparatus

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to list all materials and apparatus correctly]

**Suggested answer**
- **Materials**
  - A small piece of lithium, sodium, potassium and water
- **Apparatus**
  - [Suitable container], forceps, Knife, filter paper

| 2     | [Able to list the basic materials and apparatus required]

**Suggested answer**
- **Materials**
  - A small piece of lithium, sodium and potassium, water
- **Apparatus**
  - [Suitable container], forceps

| 1     | [Able to provide an idea of materials and apparatus used]

**Suggested answer**
- **Group 1 metals, water, forceps**

| 0     | No response or wrong response |
3(d) KK051204 – Experimental procedure

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to state all experimental steps correctly]  

**Suggested answer**
1. Cut a small piece of lithium using a knife and forceps.
2. Dry the oil on the surface of the lithium with filter paper.
3. Place the lithium slowly onto the water surface in a trough
4. Observe the reactivity of the reaction
5. Repeat steps 1 to 4 using sodium and potassium to replace lithium

| 2     | [Able to provide 3 steps correctly to carry out the experiment]  
Steps 3, 4 and 5 |
| 1     | [Able to provide minimum of 2 steps correctly to carry out the experiment]  
Steps 3 and 4 |
| 0     | No response or wrong response |
3 (e) KK 0501-05 – Tabulation of data

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 3     | [Able to construct a table correctly containing the following elements]  
- Columns and rows  
- Observation for each metal |

**Suggested answer**

<table>
<thead>
<tr>
<th>Metals</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
</tr>
</tbody>
</table>

| 2     | [Able to construct a tabulation of data containing the following elements]  
- Rows and columns present  
- Observation for metals |

**Suggested answer**

<table>
<thead>
<tr>
<th>Metals</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 1     | [An idea of a tabulation of data]  
- Minimum of 2 rows and columns |

|         |             |
|         |             |

| 0     | No response or wrong response |
## Marks of excellence

<table>
<thead>
<tr>
<th>Score</th>
<th>Rubric</th>
</tr>
</thead>
</table>
| 2     | Points given based on student’s written plan.  
   | a) Candidate’s display of all aspects of the planning  
   | 1 Problem statement  
   | 2 Statement of variables  
   | 3 List of materials and apparatus  
   | 4 Procedure  
   | 5 Tabulation of data  
   | b) Candidate’s display of all aspects with a minimum score of 2 for each aspect |
| 1     | Points given based on student’s written plan.  
   | a) Candidate’s display of all aspects of the planning  
   | 1 Problem statement  
   | 2 Statement of variables  
   | 3 List of materials and apparatus  
   | 4 Procedure  
   | 5 Tabulation of data  
   | b) Candidate’s display of all aspects with a minimum score of 1 for each aspect |
| 0     | No response or wrong response |

Nota utk pemeriksa*  

Markah Kertas 1 + Markah Kertas 2 + Markah Kertas 3 = Markah keseluruhan

\[
\frac{50 + 100 + 50}{2} = 100\%
\]

END OF MARKING SCHEME