

Title: Praktis Hebat Chemistry Form 5 (2021)

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ERRATA

Page number	Section / Part	Error	Correction
A1	PRACTICE 1 Paper 2 Section A 3. (a)(i), (ii), (iii) 3. (b)(i), (ii) 3. (c)(i), (ii)	Numbering	3. (a)(i) $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+} + \text{e}^{-}$ 3. (a)(ii) Green colour of iron(II) nitrate solution turns brown. <i>Warna hijau larutan ferum(II) nitrat bertukar menjadi perang.</i> 3. (a)(iii) 1. A few drops of sodium hydroxide solution are added into the solution. <i>Beberapa titis larutan natrium hidroksida ditambah ke dalam larutan tersebut.</i> 2. A brown precipitate is formed. <i>Mendakan perang terbentuk.</i> 3. (b)(i) $\text{MnO}_4^{-} + 8\text{H}^{+} + 5\text{e}^{-} \rightarrow \text{Mn}^{2+} + 4\text{H}_2\text{O}$ 3. (b)(ii) <i>Decreases from +7 to +2</i> <i>Berkurang daripada +7 kepada +2</i> 3. (c)(i) <i>Oxidising agent</i> <i>Agen pengoksidaan</i> 3. (c)(ii) <i>Increases from -1 to 0</i> <i>Meningkat daripada -1 kepada 0</i>
A11	PRACTICE 1 Paper 2 Section C 9. (a)(i), (ii) 9. (b) 9. (c)	Missing answers	9. (a)(i) Alcohol P = Propanol <i>Alkohol P = Propanol</i> Alcohol Q = Butanol <i>Alkohol Q = Butanol</i> 9. (a)(ii) 1. The value of heat of combustion of alcohol Q is higher than alcohol P. <i>Nilai haba pembakaran bagi alkohol Q lebih tinggi berbanding alkohol P.</i> 2. The number of atoms for carbon and hydrogen per molecule

			<p>in alcohol Q is higher than alcohol P. <i>Bilangan atom karbon dan atom hidrogen per molekul dalam alkohol Q lebih tinggi berbanding dengan alkohol P.</i></p> <p>3. The number of water molecules and carbon dioxide molecules produced from the combustion of alcohol Q is higher than alcohol P. <i>Bilangan molekul air dan molekul karbon dioksida yang terhasil daripada pembakaran alkohol Q lebih tinggi daripada alkohol P.</i></p> <p>4. More chemical bonds are formed between atoms in the carbon dioxide and water molecules for alcohol Q compared to alcohol P. Hence, more heat is released. <i>Lebih banyak ikatan kimia terbentuk antara atom dalam molekul karbon dioksida dan air bagi alkohol Q berbanding P. Maka, lebih banyak haba yang terbebas.</i></p> <p>9. (b) $\text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$</p> <p>Number of moles of ethanol = $\frac{126 \text{ kJ}}{504 \text{ kJ mol}^{-1}}$ <i>Bilangan mol etanol</i> = 0.25 mol</p> <p>Mass of ethanol = 0.25 mol $\times [(2 \times 12) + (5 \times 1) + 16 + 1]$ <i>Jisim etanol</i> = 11.5 g</p> <p>9. (c) Procedure of experiment: <i>Prosedur eksperimen:</i></p> <ol style="list-style-type: none"> 100 cm³ of water is measured and poured into a copper can and the copper can is placed on the tripod stand. <i>100 cm³ air disukat dan dituang ke dalam tin kuprum dan tin kuprum tersebut diletakkan di atas tungku kaki tiga.</i> The initial temperature of water, T_1 is measured and recorded. <i>Suhu awal air, T_1 disukat dan direkodkan.</i> A spirit lamp with ethanol is weighed and its initial mass, m_1 is recorded. <i>Lampu pelita dengan etanol ditimbang dan jisim awalnya, m_1 direkodkan.</i> The spirit lamp is then placed under the copper can and the wick of the lamp is lighted up immediately. <i>Lampu pelita kemudiannya diletakkan di bawah tin kuprum dan sumbu pelita dinyalakan dengan segera.</i> The water in the copper can is stirred continuously until the temperature of the water increases by about 30 °C. <i>Air di dalam tin kuprum dikacau berterusan sehingga suhu air meningkat kira-kira 30 °C.</i> The flame is put off and the highest temperature of water,
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T_2 is recorded.

Nyalaan api dipadamkan dan suhu tertinggi air, T_2 direkodkan.

7. The spirit lamp with ethanol is weighed and the mass, m_2 is recorded.

Lampu pelita dengan etanol ditimbang dan jisimnya, m_2 direkodkan.

Result / Keputusan:

The initial temperature of water (°C) <i>Suhu awal air (°C)</i>	T_1
The highest temperature of water (°C) <i>Suhu tertinggi air (°C)</i>	T_2
Change in temperature (°C) <i>Perubahan suhu (°C)</i>	$T_2 - T_1 = T_3$
Mass of spirit lamp before burning (g) <i>Jisim lampu pelita sebelum pembakaran (g)</i>	m_1
Mass of spirit lamp after burning (g) <i>Jisim lampu pelita selepas pembakaran (g)</i>	m_2
Mass of ethanol burnt (g) <i>Jisim etanol terbakar (g)</i>	$m_1 - m_2 = m_3$

Calculation / Penghitungan:

$$\text{Number of moles of ethanol} = \frac{m_3}{46} = n \text{ mol}$$

Bilangan mol etanol

The heat energy released during the combustion of ethanol

= The heat energy absorbed by the water

Tenaga haba yang dibebaskan semasa pembakaran etanol

= *Tenaga haba yang diserap oleh air*

$$= 100 \text{ g} \times 4.2 \text{ J g}^{-1} \text{ } ^\circ\text{C}^{-1} \times T_3 \text{ } ^\circ\text{C} = Q \text{ J}$$

The heat of combustion of ethanol

Haba pembakaran etanol

$$= - \frac{Q \text{ J}}{n \text{ mol}}$$

$$= - R \text{ J mol}^{-1} \text{ or / atau } - \frac{R}{1000} \text{ kJ mol}^{-1}$$