UJIAN DIAGNOSTIK 2
CHEMISTRY 4541/2 (PP)
Kertas 2
Peraturan Pemarkahan
Sept 2020

Q1	Mark Scheme	Marks	
(a) (i)	[Able to state the function of antibiotic correctly] Sample answer:/ *Jawapan sampel:* To kill bacteria *Untuk membunuh bakteria*	1	
(ii)	[Able to give an example of antibiotic correctly] Sample answer:/ *Jawapan sampel:* Penicillin *Penisilin*	1	
(iii)	[Able to state the type of medicine for aspirin and paracetamol correctly] Answer:/ *Jawapan:* Analgesic *Analgesik*	1	
(iv)	[Able to give a reason why aspirin cannot be be given to a child correctly] Sample answer:/ *Jawapan sampel:* It can cause bleeding in the stomach *Ia boleh menyebabkan luka didalam perut*	1	**4**
(b) (i)	[Able to state the name of X correctly] Answer:/ *Jawapan:* Iron *Ferum/ Besi*	1	
(ii)	[Able to explain why steel is used in terms of its atomic arrangement correctly] Sample answer:/ *Jawapan sampel:* 1. Size of atoms in steel are not uniform/ not the same *Saiz atom didalam keluli adalah tidak seragam/ tidak sama* 2. Arrangement of atoms in steel is disrupted/ not orderly *Susunan atom didalam keluli terganggu/ tidak teratur* 3. When force is applied it is difficult for atoms to slide over one another *Apabila daya dikenakan, sukar untuk atom menggelongsor atas satu sama lain*	1 1 1	
(iii)	[Able to state the name of alloy formed correctly] Answer:/ *Jawapan:* Stainless steel *Keluli nirkarat*	1	**5**
	JUMLAH MARKAH	**9**	**9**

Q2	Mark Scheme	Marks	
2 (a) (i)	[Able to state the name of Y correctly] Answer:/ *Jawapan:* Electron shells *Petala elektron*	1	
(ii)	[Able to state the name of subatomic particles in the nucleus of atom X correctly] Answer:/ *Jawapan:* Proton, neutron	1	
(iii)	[Able to state the electron arrangement of ion X correctly] Answer:/ *Jawapan:* 2 . 8	1	**3**
(b)	[Able to predict the physical state of X at room temperature correctly] Answer:/ *Jawapan:* Gas	1	**1**
(c)	[Able to describe the arrangement and movement of particles of element X at room temperature correctly] Sample answer:/ *Jawapan sampel:* Arrangement of particles : Far apart from each other *Susunan Zarah* *Jauh antara satu sama lain* Movement of particles : Moves randomly and fast *Pergerakan zarah* *Bergerak secara rawak dan laju*	1 1	**2**
(d) (i)	[Able to determine the number of neutrons in Q correctly] Answer:/ *Jawapan:* 18	1	
(ii)	[Able to state why Q and R has the same chemical properties correctly] Sample answer:/ *Jawapan sampel:* Atoms Q and R has the same number of valence electron *Atom Q dan R mempunyai bilangan elektron valens yang sama //* Atoms Q and R have 7 valence electrons *Atom Q dan R mempunyai 7 elektron valens*	1 1	**3**
	JUMLAH MARKAH	**9**	**9**

<table>
<tr><th>Q3</th><th>Mark Scheme</th><th colspan="2">Marks</th></tr>
<tr><td>(a)</td><td>[Able to state the meaning of empirical formula correctly]

Sample answer:/ Jawapan sampel:
Formula that shows the simplest ratio of atoms for each element in a compound
Formula yang menunjukkan nisbah teringkas atom-atom unsur dalam sebatian</td><td>1</td><td>1</td></tr>
<tr><td>(b)</td><td>[Able to state one suitable metal oxide that can be used in the apparatus setup correctly]

Sample answer:/ Jawapan sampel:
Copper (II) oxide/ CuO
Kuprum (II) oksida</td><td>1</td><td>1</td></tr>
<tr><td>(c)</td><td>[Able to state why the gas emitted at A is tested correctly]

Sample answer:/ Jawapan sampel:
To ensure oxygen has been removed
Untuk memastikan oksigen telah disingkirkan</td><td>1</td><td>1</td></tr>
<tr><td>(d)</td><td>[Able to state the name of gas released when hydrochloric acid reacts with zinc correctly]

Answer:/ Jawapan:
Hydrogen
Hidrogen</td><td>1</td><td>1</td></tr>
<tr><td>(e)</td><td>[Able to determine the empirical formula of metal X oxide correctly]

1. Mass of X and oxygen
2. Number of mole of X and oxygen
3. Ratio of X to oxygen// empirical formula of metal X oxide
4. Empirical formula

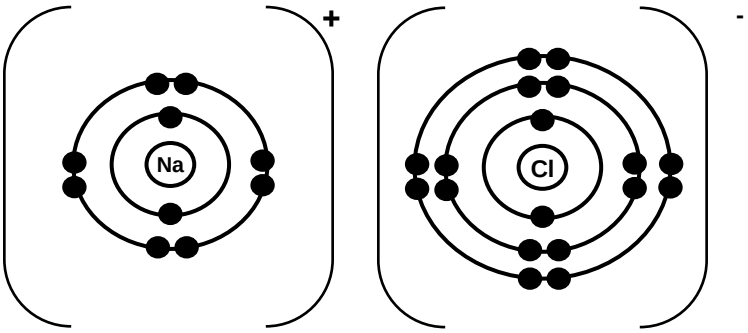
Sample answer:/ Jawapan sampel:

<table>
<tr><th>Element
Unsur</th><th>X</th><th>Oxygen/ O</th></tr>
<tr><td>Mass/ g
Jisim</td><td>(5.328 – 4.560)//
0.768</td><td>(5.520 – 5.328)//
0.192</td></tr>
<tr><td>Number of mol
Bilangan mol</td><td>(0.768 ÷ 64)//
0.012</td><td>(0.192 ÷ 16)
0.012</td></tr>
<tr><td>Ratio
Nisbah</td><td>1</td><td>1</td></tr>
</table>

Empirical formula: XO
Formula empirik</td><td>1
1
1
1</td><td>4</td></tr>
<tr><td>(f)</td><td>[Able to suggest metal Y oxide and give a reason correctly]

Sample answer:/ Jawapan sampel:
1. Magnesium oxide
Magnesium oksida
2. Because magnesium is more reactive than hydrogen
Kerana magnesium lebih reaktif dari hidrogen</td><td>1

1</td><td>2</td></tr>
<tr><td></td><td>JUMLAH MARKAH</td><td>10</td><td>10</td></tr>
</table>

Q4	Mark Scheme	Marks	
(a)	[Able to state which period the elements are placed correctly] Answer:/ *Jawapan:* 3	 1	 **1**
(b)	[Able to state the element that forms amphoteric oxide correctly] Answer:/ *Jawapan:* Aluminium/ Al	 1	 **1**
(c)	[Able to explain why the electronegativity increases across the period from left to right correctly] Sample answer:/ *Jawapan sampel:* 1. Size of atoms become smaller *Saiz atom semakin kecil* 2. Force of attraction between nucleus and electron gets stronger *Daya tarikan antara nukleus dan elektron semakin kuat* 3. It gets easier for atoms to attract electron *Atom menjadi semakin mudah menerima elektron*	 1 1 1	 **3**
(d) (i)	[Able to state which compound would not be able to conduct electricity correctly] Answer:/ *Jawapan:* Compound Y *Sebatian* Y	 1	
(ii)	[Able to write the chemical equation for the reaction in (d)(i) correctly] 1. Correct formulae of reactants and products 2. Balanced equation Answer:/ *Jawapan:* $C + 2\,Cl_2 \longrightarrow CCl_4$	 1 1	
(iii)	[Able to draw the electron arrangement of diagram for a compound that has high melting point and boiling point correctly] 1. Correct pair of atoms 2. Correct diagram of electron-nucleus shown, number of shells filled with electron, ratio of ion, charge of ion Sample answer:/ *Jawapan sampel:*  	 1 1	**5**
	JUMLAH MARKAH	**10**	**10**

<table>
<tr><th>Q5</th><th>Mark Scheme</th><th colspan="2">Marks</th></tr>
<tr><td>(a)</td><td>[Able to state the colour of sulphur correctly]

<u>Answer:/ Jawapan:</u>
Yellow
Kuning</td><td>1</td><td>1</td></tr>
<tr><td>(b) (i)</td><td>[Able to calculate the mass of sulphur formed at the end of the reaction correctly]

1. Number or mole of sodium thiosulphate
2. Mass of Sulphur with correct unit

<u>Answer:/ Jawapan:</u>
1. (50) (0.2) ÷ 1000/
0.01
2. (0.01 × 32) g/
0.32 g</td><td>1
1</td><td rowspan="2">3</td></tr>
<tr><td>(ii)</td><td>[Able to determine the rate of reaction for the experiment correctly]

<u>Answer:/ Jawapan:</u>
(0.32 ÷ 16) g s^{-1}/
0.02 g s^{-1}</td><td>1</td></tr>
<tr><td>(c) (i)</td><td>[Able to choose two changes that will increase the rate of reaction correctly]

Answer:
<table><tr><td>Initial experiment
Eksperimen asal</td><td>✓</td></tr><tr><td>✓</td><td></td></tr></table></td><td>1</td><td rowspan="3"></td></tr>
<tr><td>(ii)</td><td>[Able to state the factor that affects the rate of reaction in ONE of the answers correctly]

<u>Sample answer:/ Jawapan sampel:</u>
Temperature// concentration of solution
Suhu // Kepekatan larutan</td><td>1</td></tr>
<tr><td></td><td>[Able to explain the rate of reaction between initial experiment and one of the answers chosen in (c)(i) correctly]

<u>Sample answer:/ Jawapan sampel:</u>
1. Kinetic energy of particles increases
Tenaga kinetic zarah meningkat
2. Frequency of collisions between thiosulphate ions and H^+ ion/ particles increase
Frekuensi pelanggaran antara ion tiosulfat dan ion H^+ meningkat
3. Frequency of effective collision between particles increases
Frekuensi pelanggaran berkesan antara zarah meningkat

OR/ ATAU
1. Number of hydrogen ions per unit molecule increases // Bilangan ion hidrogen per unit molekul meningkat
2. Frequency of collisions between thiosulphate ions and H^+ ion/ particles increase
Frekuensi pelanggaran antara ion tiosulfat dan ion H^+ meningkat
3. Frequency of effective collision between particles increases
Frekuensi pelanggaran berkesan antara zarah meningkat</td><td>1

1

1</td></tr>
</table>

[*Lihat halaman sebelah*

(d)	[Able to briefly describe the test to verify whether the gas is acidic or not correctly] Sample answer:/ *Jawapan sampel:* 1. Place a moist blue litmus paper at the mouth of the conical flask *Letakkan kertas litmus biru lembap di mulut kelalang kon itu.* 2. Moist blue litmus paper turns red confirms the presence of SO_2 gas *Kertas litmus biru lembap bertukar ke merah mengesahkan kehadiran gas* SO_2	 1 1	 **2**
	JUMLAH MARKAH	**11**	**11**

Q6	**Mark Scheme**	**Marks**	
(a)	[Able to state the chemical formula for lead (II) chromate (VI) correctly] Answer:/ *Jawapan:* $PbCrO_4$	 1	 **1**
(b) (i)	[Able to state the volume of potassium chromate (VI) needed correctly] Answer:/ *Jawapan:* 5.0 cm^3	 1	
(ii)	[Able to determine the number of mole of potassium chromate (VI) used in (b)(ii) correctly] Sample answer:/ *Jawapan sampel:* (5.0 × 0.5) ÷ 1000/ 0.0025 Able to determine the number of mole of lead (II) nitrate used in the experiment correctly] Sample answer:/ *Jawapan sampel:* (5.0 × 0.5) ÷ 1000/ 0.0025	 1 1	
(iii)	[Able to construct the ionic equation for the formation of the precipitate correctly] Sample answer:/ *Jawapan sampel:* $Pb^{2+} + CrO_4^{2-} \longrightarrow PbCrO_4$	 1	**4**
(c) (i)	[Able to identify X, Y and Z correctly] Sample answer:/ *Jawapan sampel:* X : $ZnCO_3$/ Zinc carbonate *Zink karbonat* Y : Carbon dioxide *Karbon dioksida* Z : PbO/ Lead (II) oxide *Plumbum* (II) *oksida*	 1 1 1	 **3**

(ii)	[Able to describe a chemical test to identify the anion in solution P correctly] <u>Sample answer:/ *Jawapan sampel:*</u> 1. Pour solution P into a test tube *Tuang larutan* P *kedalam tabung uji* 2. Add nitric acid and silver nitrate solution into the test tube *Tambahkan asid nitric dan larutan argentum nitrat kedalam tabung uji* 3. White precipitate formed shows chloride ion is present *Mendakan putih terbentuk menunjukkan ion klorida hadir*	 1 1 1	 **3**
	JUMLAH MARKAH	**11**	**11**

Q7	Mark Scheme	Marks	
(a)	[Able to explain why the pH values of the two acids are different correctly] <u>Sample answer:/ *Jawapan sampel:*</u> 1. HCl is a strong acid HCl *ialah asid kuat* 2. HCl ionized completely in water HCl *mengion dengan lengkap didalam air* 3. HCl produces high concentration of H^+ ions HCl *menghasilkan kepekatan ion H^+ yang tinggi* 4. The higher the concentration of H^+ ions the lower the pH value *Semakin tinggi kepekatan ion hidrogen, semakin rendah nilai* pH [Accept if explanation is about ethanoic acid]	 1 1 1 1	 **4**
(b)	[Able to write the chemical equation for the reaction correctly] 1. Correct formula of reactants and products 2. Balanced chemical equation <u>Answer:/ *Jawapan:*</u> $2\,HCl + CaCO_3 \longrightarrow CaCl_2 + CO_2 + H_2O$ [Able to calculate the volume of gas released correctly] 3. Molar mass of $CaCO_3$ 4. No. of mole of $CaCO_3$ 5. Mole ratio of $CaCO_3$ to CO_2 6. Volume of CO_2 with correct unit <u>Sample answer:</u> 3. 40 + 12 + 3(16)/ 100 4. (2.5 ÷ 100)/ 0.025 5. 1 mol of $CaCO_3$ produces 1 mol of CO_2 / 0.025 mol of $CaCO_3$produces 0.025 mol mol of CO_2 2 mol of $CaCO_3$ *menghasilkan* 1 mol of CO_2 / 0.025 mol mol $CaCO_3$ *menghasilkan* 0.025 mol of CO_2 6. (0.025 x 22.4) dm^3/ 0.56 dm^3	 1 1 1 1 1 1	 **6**

(c) [Able identify solvent K and solvent L correctly]

1. Solvent : Water — 1
   Pelarut K *Air*
2. Solvent : [Any suitable organic solvent] — 1
   Pelarut L [*Mana-mana pelarut organik sesuai*]

[Able to explain the differences in the observations for both sets of experiment correctly]

Set	Glasial CH_3COOH in solvent K CH_3COOH *glasial dalam pelarut* K	Glasial CH_3COOH in solvent L CH_3COOH *glasial dalam pelarut* L	
I	Can conduct electricity *Boleh mengkonduksikan arus elektrik*	Cannot conduct electricity *Tidak boleh mengkonduksikan arus elektrik*	1
	CH_3COOH ionises in water CH_3COOH *mengion didalam air*	CH_3COOH cannot ionise in solvent L CH_3COOH *tidak boleh mengion dalam pelarut* L	1
	Has free moving ions *Terdapat ion bergerak bebas*	Exist as molecule *wujud sebagai molekul* // No free moving ions *Tiada ion-ion bebas bergerak*	1
II	Carbon dioxide gas is produced *Gas karbon dioksida terhasil*	No carbon dioxide gas is prodced *Tiada gas karbon dioksida terhasil* // No reaction occurs *Tiada tindak balas berlaku*	1
	H^+ ion is present *Ion* H^+ *hadir*	No H^+ ion is present *Ion* H^+ *hadir tidak hadir*	1
	Shows acidic properties *Menunjukkan sifat asid*	Doesn't show acidic properties *Tidak menunjukkan sifat asi*	1

[Able to write **one** chemical equation involved correctly]

3. Correct formula of reactants and products — 1
4. Balanced chemical equation — 1 — **10**

Sample answer:

$2\ CH_3COOH + CaCO_3 \longrightarrow Ca(CH_3COO)_2 + CO_2 + H_2O$

	JUMLAH MARKAH	**20**	**20**

Q8	Mark Scheme	Marks	
(a)	[Able to state the type of reaction and explain the reaction correctly] <u>Sample answer:/ *Jawapan sampel:*</u> 1. Exothermic reaction *Tindak balas eksotermik* 2. Quicklime/ CaO is dissolved in water *Kapur tohor*/ CaO *melarut dalam air* 3. Heat energy is released *Tenaga haba dibebaskan* 4. Heat is absorbed by the food/ used to heat the food *Tenaga haba diserap oleh makanan/ digunakan untuk memanaskan makanan*	 1 1 1 1	 **4**

(b)	[Able to calculate the heat of combustion of propan-1-ol correctly]
	
	1. Heat released
	2. Molar mass of propan-1-ol
	3. Number of mole of propan-1-ol
	4. Heat of combustion with correct unit
	
	<u>Sample answer:/ *Jawapan sampel:*</u>
	1. (500) × (4.2) × (50)// 105000 J
	2. 3(12) + 7(1) + 16 + 1// 60
	3. (3.12 ÷ 60)// 0.052 mol
	4. (105000 ÷ 0.052) J mol^{-1}// 2019230 J mol^{-1}// 2019 kJ mol^{-1}
	
	[Able to write the chemical equation for the combustion of propan-1-ol correctly]
	1. Correct formulae of reactants and products
	2. Balanced equation
	
	<u>Sample answer:/ *Jawapan sampel:*</u>
	
	$C_3H_7OH + 9/2\ O_2 \longrightarrow 3\ CO_2 + 4\ H_2O$
		
		1
		1
		1
		1
		
		1
		1
			
			6

(c)	[Able to calculate the value of T_1 correctly] 1. Number of mole of $CuSO_4$ 2. Heat released 3. Temperature change/ T_1 with correct unit <u>Sample answer:/ *Jawapan sampel:*</u> 1. (0.1) × (50) ÷ 1000// 0.005 2. (250 × 1000 × 0.005)// 1250 3. 1250 ÷ (50) (4.2) ^oC/ 5.95 ^oC// 6 ^oC// 34 ^oC [Able to compare and explain the difference in highest temperature reached for Set I and Set II and Set I and Set III correctly] <u>Sample answer:/ *Jawapan sampel:*</u> <u>Set I and/ *dan* Set II</u> 4. T_2 is 40 ^oC/ Change of temperature is doubled/ T_2 is higher than T_1 T_2 *ialah* 40 ^oC/ *perubahan suhu dua kali ganda meningkat*/ T_2 *lebih tinggi dari* T_1 5. Concentration of copper (II) sulphate/ copper (II) ions/ Cu^{2+} is doubled in Set II compared to Set I. *Kepekatan kuprum* (II) *sulfat/ ion kuprum* (II)/ Cu^{2+} *meningkat dua kali ganda dari Set* I 6. More heat energy is released in Set II than Set I *Lebih banyak haba yang terbebas dalam Set* II *berbanding Set* I <u>Set I and/ *dan* Set III</u> 7. T_3 is less than T_1 T_3 *kurang dari* T_1 8. Iron is less electropositive than magnesium *Ferum kurang elektropositif dari magnesium* 9. Less heat energy is released in Set III than Set I *Lebih sedikit tenaga haba terbebas dalam Set* III *berbanding Set* I. [Able to state colour change for any ONE reaction correctly] <u>Sample answer:/ *Jawapan sampel:*</u> 10. Blue solution turns colourless in Set I and II *Larutan biru menjadi tidak berwarna bagi Set* I *dan* Set II // 11. Blue solution turns green in Set III *Larutan biru bertukar hijau dalam Set* III.	 1 1 1 1 1 1 1 1 1 1	 **10**
	JUMLAH MARKAH	**20**	**20**

Q9	Mark Scheme	Marks	
(a)	[Able to arrange the metals based on ascending order of electropositivity explain correctly] Sample answer/ *Jawapan Sampel* 1. Cu, Pb, **Y**, Mg 2. In Set I, Y is less electropositive than Mg *Dalam* Set I*,* Y *kurang elektropositif dari* Mg// 3. In Set II and III, Y is more electropositive than lead and copper *Dalam* Set II *dan* Set III*,* Y *lebih elektropositif dari plumbum dan kuprum* 4. Potential difference in Set II // pairs of Cu- Zn higher than in Set III // pair of Pb-Zn. Position of copper below Pb *Beza keupayaan dalam set II/ psangan logam Cu- Zn adalah tinggi berbanding set III // pasangan logam Pb- Zn. Kedudukan kuprum di bawah plumbum.*	1 1 1 1	**4**
(b)	[Able to predict the position of metal R and S in Electrochemical Series, compare and explain the difference in observations obtained in Sets A and B correctly] Sample answer:/ *Jawapan sampel:* 1. Brown solid formed in Set I *Pepejal perang terbentuk dalam Set I* 2. R is more electropositive than copper *R elektropositif dari kuprum* 3. No change in Set II// Blue colour remains in Set II *Tiada perubahan dalam Set II // Warna biru kekal dalam Set II* 4. S is less electropositive than copper *S kurang elektropositif dari kuprum //* 5. S is lower than copper in Electrochemical Series *S lebih rendah dari kuprum dalam Siri Elektrokimia* 6. R : Magnesium/ Zinc [any suitable metal] : Magnesium/ Zink [mana-mana logam sesuai] 7. S : Silver : Argentum	1 1 1 1 1 1	**6**

	[Able to describe an experiment that you can carry out in the laboratory to electroplate the iron spoon correctly]		
	<u>Metal/ *Logam*</u> Copper // Silver *Kuprum*// *Argentum*	1	
	<u>Apparatus & Materials/ *Radas & Bahan*</u> Beaker, connecting wire, batteries, switch, silver// copper, iron spoon, copper (II) sulphate // silver nitrate // [Any suitable copper// silver salt solution] *Bikar, wayar penyambung, bateri, suis, logam kuprum* // *argentum, sudu besi, larutan kuprum(II) sulfat // argentum* nitrat// [*Mana-mana larutan garam kuprum*/*argentum yang sesuai*]	1	
	<u>Procedures/ *Prosedur*</u> 1. Pour 100 cm^3 of copper (II) sulphate // silver nitrate // any suitable solution into a beaker. *Tuang 100 cm^3 larutan kuprum (II) sulfat // argentum nitrat // larutan yang sesuai ke dalam bikar*	1	
	2. Connect iron spoon to the positive terminal of batteries and copper/ silver at negative terminal using connecting wire. *Sambungkan sudu besi pada terminal negative dan logam penyadur pada terminal positif bateri menggunakan wayar penyambung.*	1	
	3. Dip the electrode into the solution *Celupkan // masukkan elektrod ke dalam larutan*	1	
	4. Turn on the switch. *Hidupkan suis*	1	
	<u>Observations/ *Pemerhatian*</u> 5. Electrode at negative terminal become thicker // Brown solid deposited// silvery grey solid deposited *Elektrod pada terminal negative meneball*// *Enapan perang terbentuk*// *Pepejal kelabu berkilat terenap*	1	
	6. Electrode at positive terminal become thinner *Elektrod di terminal positif menipis*	1	
	<u>Half-equations/ *Setengah Persamaan*</u> 7. Anode : $Cu \rightarrow Cu^{2+} + 2e$ // $Ag \rightarrow Ag^{+} + e$ *Anod*	1	
	8. Cathode : $Cu^{2+} + 2e \rightarrow Cu$ // $Ag^{+} + e \rightarrow Ag$ *Katod*	1	**10**
	JUMLAH MARKAH	**20**	**20**

Q10	Mark Scheme	Mark	
(a)	[Able to suggest compound X correctly] Sample answer:/ *Jawapan sampel:* Ethene/ C_2H_4 [Able to state the name of Process Y, identify Gas A, compounds B, C and D correctly] Sample answer:/ *Jawapan sampel:* 1. Y : Hydration *Penghidratan* 2. A : Carbon dioxide *Karbon dioksida* 3. B : Ethanoic acid/ propanoic acid/ butanoic acid *Asid etanoik*/ *Asid propanoik*/ asid butanoik 4. C : Ethanol/ propanol/ butanol *Etanol*/ *propanol*/ *butanol* 5. D : Ethyl butanoate/ propyl butanoate / butyl butanoate *Etil butanoat / propil butanoat / butil butanoat*	1 1 1 1 1	**6**
(b)	[Able to write the chemical equation for the combustion of compound **X** in excess oxygen gas correctly] 1. Correct formulae of reactants and products 2. Balanced equation Sample answer:/ *Jawapan sampel:* $C_2H_4 + 3\ O_2 \longrightarrow 2\ CO_2 + 2\ H_2O$ [Able to calculate the volume of gas released correctly] 1. Ratio of mole 2. Volume of CO_2 with correct unit Sample answer:/ *Jawapan sampel:* 1. 1 mol of C_2H_4 produces 2 mol of CO_2/ 0.25 mol of C_2H_4 produces 0.5 mol CO_2 1 mol C_2H_4 *menghasilkan* 2 mol of CO_2/ 0.25 mol C_2H_4 *menghasilkan* 0.5 mol CO_2 2. (0.5 × 24) dm^3// 12 dm^3	1 1 1 1 	**4**

(ii)	[Able to describe the formation of compound **D** from compound **C** correctly] Sample answer/ *Jawapan sampel* Procedure/ *Prosedur* 3. Add 5 cm^3 of butanoic acid into a boiling tube *Masukkan* 5 cm^3 *asid butanoik kedalam tabung didih* 4. Add 5 cm^3 of [compound C] into the boiling tube *Masukkan* 5 cm^3 [*sebatian* C] *kedalam tabung didih* 5. Add a few drops of concentrated sulphuric acid into the boiling tube *Tambahkan beberapa titis asid sulfurik pekat kedalam tabung didih* 6. Heat the mixture *Panaskan campuran itu* 7. Pour the mixture into a beaker of water *Tuangkan campuran kedalam bikar mengandungi air* 8. Record observation *Rekodkan pemerhatian* Observation/ *Pemerhatian* 9. Fragrant smell is released *Bau wangi dibebaskan* 10. Two layers of liquid formed when poured into water *Dua lapisan cecair terbentuk apabila dituang kedalam air* Chemical equation/ *persamaan kimia* 11. Correct formulae of reactants and products 12. Balanced equation Sample answer/ *Jawapan sampel* $C_2H_5OH + C_3H_7COOH \longrightarrow C_3H_7COOC_2H_5 + H_2O$	1 1 1 1 1 1 1 1 1 1	**10**
	JUMLAH	**20**	**20**

END OF MARKING SCHEME
PERATURAN PEMARKAHAN BERAKHIR