

Name:

A-Level Chemistry · Unit 16 revision

Revision Sheet

A-Level Chemistry · Unit 16 Hydroxy compounds

6 vocabulary items · 7 marks of exam questions (7 questions)

Part 1 · Vocabulary review (6 items). The terms this unit is examined on most. Mark it yourself from the answer key.

Section A · Chinese to English

Write the English word.

- | | | |
|----|-------|-----|
| 1. | <hr/> | [1] |
| 2. | <hr/> | [1] |
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| 5. | <hr/> | [1] |
| 6. | <hr/> | [1] |

Part 2 · Exam questions (7 marks, 7 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

Name:

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7 Which reaction will distinguish between propan-1-ol and propan-2-ol?

- ☐ **A** warming with acidified KMnO_4
- B** warming with acidified $\text{K}_2\text{Cr}_2\text{O}_7$
- C** dehydration, followed by reaction with $\text{Br}_2(\text{aq})$
- D** mild oxidation, followed by reaction with Fehling's reagent

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8 The general formula for a non-cyclic alcohol is $\text{C}_n\text{H}_{2n+1}\text{OH}$.

☐ How many different structural isomers are there for $n = 3$ and $n = 4$?

	$n = 3$	$n = 4$
A	2	2
B	2	4
C	3	4
D	3	8

9 X, Y and Z are three isomeric alcohols.

- ☐ X $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- Y $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$
- Z $(\text{CH}_3)_2\text{C}(\text{OH})\text{CH}_2\text{CH}_3$

Separate samples of each alcohol are warmed with a mild oxidising agent and the results noted.

One of these alcohols, when dehydrated, will give a pair of cis-trans isomers with molecular formula C_5H_{10} .

Which row is correct?

	reacts with mild oxidising reagents	gives cis/trans isomers
A	X, Y and Z	Y only
B	X, Y and Z	Z only
C	X and Y only	Y only
D	X and Y only	Z only

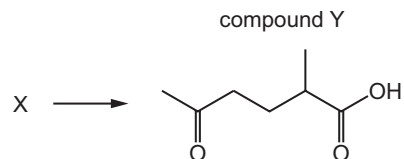
- 10** Primary alcohols can be oxidised to aldehydes using either acidified potassium dichromate(VI) or acidified potassium manganate(VII). The reaction mixtures change colour as the oxidising agent is reduced.

☐

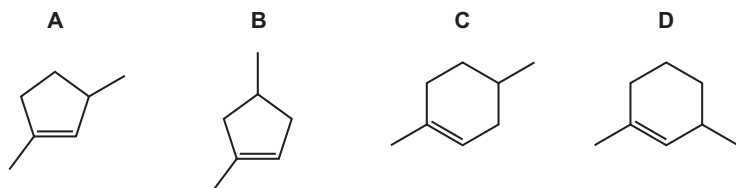
What are the colour changes seen?

	acidified potassium dichromate(VI)		acidified potassium manganate(VII)	
	before	after	before	after
A	green	orange	purple	colourless
B	orange	green	colourless	purple
C	orange	green	purple	colourless
D	purple	colourless	orange	green

- 11** Compound X can be converted into compound Y in a single step.

☐

What could be the identity of X?



- 12** Alcohol X reacts with concentrated sulfuric acid to produce a mixture of products.

☐

Two of the products are structural isomers of each other.

What could be X?

- A** hexan-2-ol
B pentan-1-ol
C pentan-3-ol
D propan-2-ol

- 13** Which alcohols can be oxidised to form an organic compound which will give coloured precipitates with both 2,4-dinitrophenylhydrazine reagent and alkaline aqueous iodine?

☐