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. _____ [1]

2. _____ [1]

3. _____ [1]

4. _____ [1]

5. _____ [1]

6. _____ [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.

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

A warming with acidified $KMnO_4$

B warming with acidified $K_2Cr_2O_7$

C dehydration, followed by reaction with $Br_2(aq)$

D mild oxidation, followed by reaction with Fehling's reagent

8 The general formula for a non-cyclic alcohol is $C_nH_{2n+1}OH$.

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 $CH_3CH_2CH_2CH_2CH_2OH$

Y $CH_3CH_2CH(OH)CH_2CH_3$

Z $(CH_3)_2C(OH)CH_2CH_3$

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?

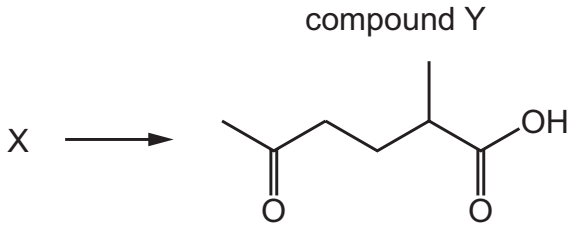
	reacts with mild oxidising reagents	gives cis/trans isomers
A	X, Y and Z	Y only
B	X, Y and Z	Z only
C	X and Y only	Y only
D	X and Y only	Z only

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?

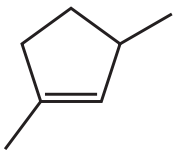
	acidified potassium dichromate(VI)		acidified potassium manganate(VII)	
	before	after	before	after
A	green	orange	purple	colourless
B	orange	green	colourless	purple
C	orange	green	purple	colourless
D	purple	colourless	orange	green

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



What could be the identity of X?

A



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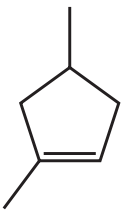

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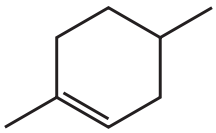

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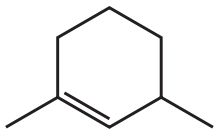


12 Alcohol X reacts with concentrated sulfuric acid to produce a mixture of products.

Two of the products are structural isomers of each other.

What could be X?

A hexan-2-ol

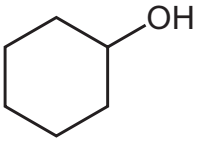
B pentan-1-ol

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?

1



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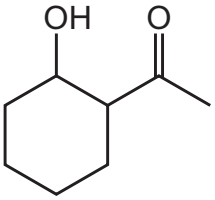
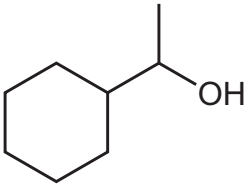
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