

91165



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Level 2 Chemistry, 2019

91165 Demonstrate understanding of the properties of selected organic compounds

2.00 p.m. Monday 11 November 2019
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of the properties of selected organic compounds.	Demonstrate in-depth understanding of the properties of selected organic compounds.	Demonstrate comprehensive understanding of the properties of selected organic compounds.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

A periodic table is provided in the Resource Booklet L2–CHEMR.

If you need more room for any answer, use the extra space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

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The examination continues on the following page.**

QUESTION ONE

(a) Complete the following table.

Compound	IUPAC (systematic name)
$ \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{C} \\ \quad \quad // \\ \text{H} \quad \text{H} \quad \text{O} \\ \quad \quad \quad \backslash \\ \quad \quad \quad \text{OH} \end{array} $	
	propan-2-amine
$ \begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ \quad \quad \quad \quad \\ \text{H}-\text{C}=\text{C}-\text{C}-\text{C}-\text{C}-\text{Cl} \\ \quad \quad \quad \quad \\ \quad \quad \text{H} \quad \text{H} \quad \text{H} \end{array} $	
	2,3-dimethylbutane

(b) Draw four structural (constitutional) isomers of $\text{C}_4\text{H}_{10}\text{O}$ that are alcohols.

Classify the alcohols as either primary, secondary or tertiary.

1.	2.
Type of alcohol:	Type of alcohol:
3.	4.
Type of alcohol:	Type of alcohol:

- (iii) Explain how acidified potassium permanganate solution, $\text{KMnO}_4/\text{H}^+(\text{aq})$, can be used to distinguish between compounds **A** and **B**.

In your answer you should:

- identify the type of reaction
- describe any relevant observations.

- (iv) Compounds **A** and **B** will both react with bromine water, $\text{Br}_2(\text{aq})$.

Compare and contrast these reactions by referring to the conditions required, the observations, the products formed, and the type of reaction.

- (c) Compare and contrast the reaction that forms compound **B** to the reverse reaction that forms propene, C_3H_6 , from compound **B**.

**Extra paper if required.
Write the question number(s) if applicable.**

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QUESTION
NUMBER

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