

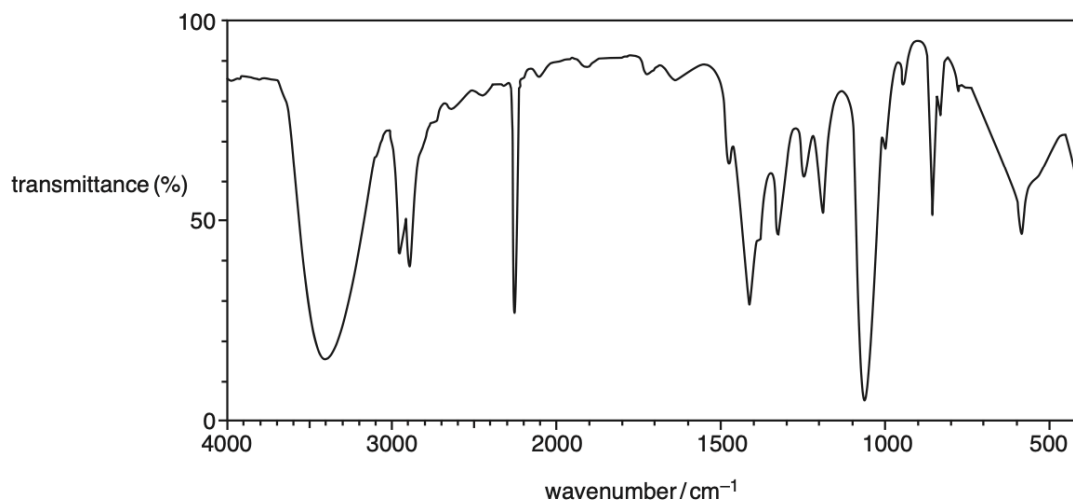
**GCE A level Chemistry A (H432)**  
**H432/02 Synthesis and analytical techniques**

**MCQ Question Set 4**  
**4.2 Alcohols, haloalkanes and analysis**

Multiple Choice Questions

1.	<p>A chemist compares the rates of hydrolysis of 1-chloropropane and 1-bromopropane in ethanol.</p> <p>Which reagent in aqueous solution should be used?</p> <p><b>A</b> Silver chloride</p> <p><b>B</b> Silver nitrate</p> <p><b>C</b> Potassium chloride</p> <p><b>D</b> Potassium nitrate</p> <p>Your answer <input type="checkbox"/></p>	[1]
2.	<p>Which compound does <b>not</b> react with nucleophiles?</p> <p><b>A</b> <math>\text{CH}_3\text{CH}_2\text{CHO}</math></p> <p><b>B</b> <math>\text{CH}_3\text{CHCH}_2</math></p> <p><b>C</b> <math>\text{CH}_3\text{CH}_2\text{COCH}_3</math></p> <p><b>D</b> <math>\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}</math></p> <p>Your answer <input type="checkbox"/></p>	[1]
3.	<p>The breakdown of ozone is catalysed by NO radicals.</p> <p>Which equation is a propagation step in the mechanism for this process?</p> <p><b>A</b> <math>\text{NO} + \text{O}_2 \rightarrow \text{N} + \text{O}_3</math></p> <p><b>B</b> <math>\text{NO} + \text{O}_2 \rightarrow \text{NO}_2 + \text{O}</math></p> <p><b>C</b> <math>\text{N} + \text{O}_3 \rightarrow \text{NO} + \text{O}_2</math></p> <p><b>D</b> <math>\text{NO}_2 + \text{O} \rightarrow \text{NO} + \text{O}_2</math></p> <p>Your answer <input type="checkbox"/></p>	[1]

4. Which compound could have produced the IR spectrum below?



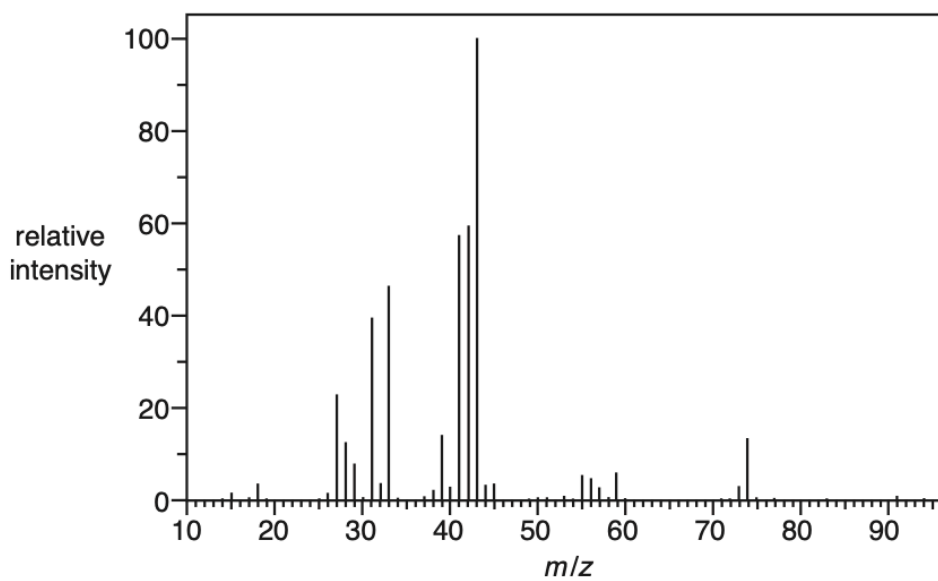
- A  $\text{CH}_3\text{CH}_2\text{OH}$
- B  $\text{CH}_3\text{CHOHCN}$
- C  $\text{CH}_3\text{COOH}$
- D  $\text{CH}_3\text{CONH}_2$

Your answer

[1]

5. The mass spectrum of  $(\text{CH}_3)_2\text{CHCH}_2\text{OH}$  is shown below.

Which ion is responsible for the peak with the greatest relative intensity?

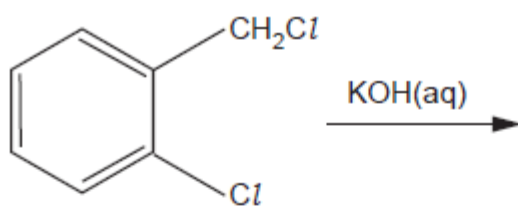


- A  $\text{CHCH}_2\text{OH}^+$
- B  $\text{CH}_3\text{CH}_2\text{CH}^+$
- C  $(\text{CH}_3)_2\text{CH}^+$
- D  $\text{CH}_3\text{CO}^+$

Your answer

[1]

6. What is the organic product of the reaction below?



<b>A</b>	<p>Structure A: A benzene ring with a <math>\text{CH}_2\text{OH}</math> group at the top position and a <math>\text{Cl}</math> atom at the ortho position (bottom-right).</p>
<b>B</b>	<p>Structure B: A benzene ring with a <math>\text{CH}_2\text{Cl}</math> group at the top position and an <math>\text{OH}</math> group at the ortho position (bottom-right).</p>
<b>C</b>	<p>Structure C: A benzene ring with a <math>\text{CH}_2\text{OH}</math> group at the top position and an <math>\text{OH}</math> group at the ortho position (bottom-right).</p>
<b>D</b>	<p>Structure D: A benzene ring with a <math>\text{HO}</math> group at the top-left position, a <math>\text{CH}_2\text{Cl}</math> group at the top-right position, and a <math>\text{Cl}</math> atom at the bottom-right position.</p>

Your answer

[1]

**Total Marks for Question Set 4: 6**

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