

Exercise 9.52 – Synthesis SL

Q952-01 Which reaction occurs at room temperature?

- A. $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2 + \text{OH}^- \longrightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} + \text{NH}_2^-$
 - B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_3 + \text{CN}^- \longrightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OCN} + \text{CH}_3^-$
 - C. $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br} + \text{OH}^- \longrightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} + \text{Br}^-$
 - D. $(\text{CH}_3)_3\text{COH} + \text{Cl}^- \longrightarrow (\text{CH}_3)_3\text{CCl} + \text{OH}^-$
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Q952-02 Which of the compounds below is/are most likely to undergo substitution rather than addition reactions?

- I - CH_3CHCH_2
- II - $(\text{CH}_3)_3\text{CCl}$
- III - C_6H_6

- A. I only
 - B. II only
 - C. I and III only
 - D. II and III only
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Q952-03 For which of the following transformations does the reactive carbon undergo a change in geometry?

- A. Alkane to chloroalkane
 - B. Acid to alkanal
 - C. Acid to ester
 - D. Alkanol to acid
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Q952-04 Which can be made in one step from a primary alcohol?

- I - an aldehyde
- II - an alkene
- III - a ketone

- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
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Q952-05 Which pair of compounds can be used to prepare $\text{CH}_3\text{COOCH}_3$?

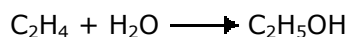
- A. Ethanol and methanoic acid
 - B. Ethanol and ethanoic acid
 - C. Methanol and methanoic acid
 - D. Methanol and ethanoic acid
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Q952-06 Which type of compound can be made from one step from a secondary alcohol?

- A. An aldehyde
 - B. An alkane
 - C. A carboxylic acid
 - D. A ketone
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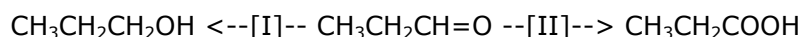
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Q952-07 What is the correct description of the following reaction?



- A. Addition
 - B. Condensation
 - C. Dehydration
 - D. Hydrogenation
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Q952-08 Consider the following reaction scheme:



What are reagents I and II respectively?

- A. $\text{H}^+ / \text{Cr}_2\text{O}_7^{2-}(\text{aq})$, LiAlH_4
 - B. H_2/Ni , LiAlH_4
 - C. LiAlH_4 , $\text{H}^+ / \text{Cr}_2\text{O}_7^{2-}(\text{aq})$
 - D. $\text{H}^+ / \text{MnO}_4^-(\text{aq})$, $\text{H}^+ / \text{Cr}_2\text{O}_7^{2-}(\text{aq})$
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Q952-09 An organic liquid, I, has a relative molecular mass of 46. On heating with concentrated sulphuric acid at 170°C a colourless gas is evolved that decolourises $\text{Br}_2(\text{aq})$. What is the organic liquid I?

Q952-10 Which is the main product when ethanol reacts with excess concentrated phosphoric acid?

- A. Ethene
 - B. Methoxymethane
 - C. Ethanoic acid
 - D. Ethanal
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