

Organic (2022 VCE)

1. Which one of the following is the percentage atom economy of the reaction that converts propene to propane?

- A. 91%
- B. 93%
- C. 95%
- D. 100%

Solution will appear here

Solution

2. The correct IUPAC name for $\text{CH}_3\text{CH}_2\text{CHClCHOHCH}_3$ is

- A. 3-chloropentan-4-ol
- B. 3-chloropentan-2-ol
- C. 2,3-chloro-pentanol
- D. 3,2-chloro-pentanol

Solution

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3. Which one of the following chemical compounds contains a chiral carbon centre?

- A. glycine
- B. glycerol
- C. butan-2-ol
- D. 1,1-dichloropropane

Solution

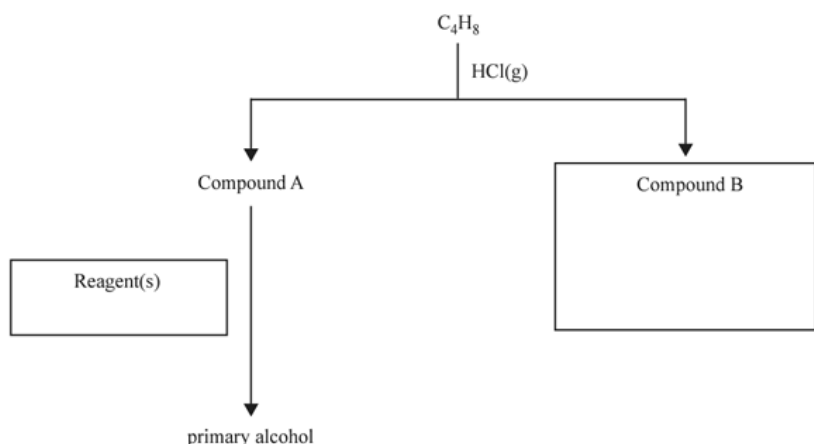
4. Which one of the following reactions has the highest atom economy in the production of an organic molecule?

- A. complete combustion of propyne, C_3H_4
- B. reaction of iodine, I_2 , with propane, C_3H_8
- C. reaction of bromine, Br_2 , and propene, C_3H_6
- D. formation of a dipeptide from alanine, $\text{C}_3\text{H}_7\text{NO}_2$

Solution will appear here

Solution

5. A reaction pathway to produce a primary alcohol is shown below.



Solution will appear here

a. C_4H_8 reacts with HCl(g) to form two unbranched isomers – Compound A and Compound B. Only Compound A can react to produce a primary alcohol. a. Identify the type of reaction that converts C_4H_8 into Compound A. 1 mark

b. Write the semi-structural formula for Compound B in the box provided. 1 mark

c. State the reagent(s) required to convert Compound A into a primary alcohol in the box provided. 1 mark

[Solution](#)

d. Propan-1-ol can react with methanoic acid to produce an organic molecule.

i. Identify the catalyst for this reaction. 1 mark

ii. Write a balanced chemical equation for the reaction. 2 marks

iii. Write the systematic IUPAC name for the organic molecule produced. 1 mark

Solution will appear here

[Solution](#)