

APOLLO

Electron-pair sharing reactions

SL

Chemistry

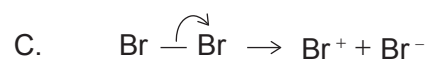
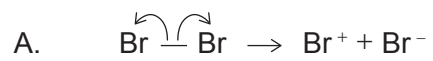
First assessment 2025

10 questions | questions

28. Which alcohol and conditions would produce the highest yield of methylpropanoic acid?

	Alcohol	Conditions
A.	2-methylpropan-2-ol	Reflux
B.	2-methylpropan-1-ol	Reflux
C.	2-methylpropan-2-ol	Distillation
D.	2-methylpropan-1-ol	Distillation

29. Which row correctly shows heterolytic fission?



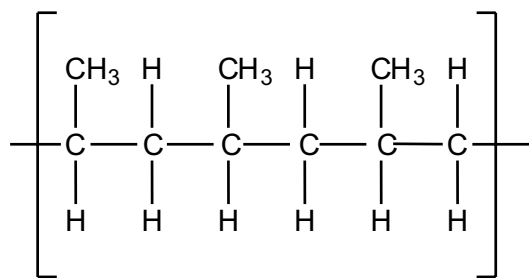
29. Which compound can be reduced to produce butanal?

- A. Butanoic acid
- B. Butan-1-ol
- C. Butanone
- D. Butan-2-ol

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11. A section of a polymer containing three repeating units is shown.



Which monomer was used to make this polymer?

- A. But-1-ene
- B. But-2-ene
- C. Methylpropene
- D. Propene

30. But-2-ene undergoes a variety of addition reactions.

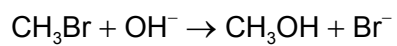
Which of the following is correct?

	Reagent added	Product
A.	H ₂	But-1-ene
B.	H ₂ O	Butan-1-ol
C.	HBr	2-bromobutane
D.	Br ₂	2,2-dibromobutane

28. Which product may be obtained by the reduction of $\text{CH}_3\text{CH}_2\text{COOH}$?

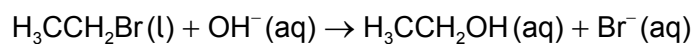
- A. $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$
- B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
- C. $\text{CH}_3\text{CH}_2\text{OCH}_3$
- D. $\text{CH}_3\text{COOCH}_3$

30. Which species is the electrophile?



- A. OH^-
 - B. Br^-
 - C. CH_3OH
 - D. CH_3Br
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4. Bromoethane can react with aqueous hydroxide ions to produce ethanol.



- (a) State the type of reaction.

[1]

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- (b) Sketch the mechanism of the reaction, showing structural formulas and using curly arrows to represent the movement of electron pairs.

[3]

- (c) Determine the standard enthalpy change of the reaction, in kJ mol^{-1} . Use section 12 of the data booklet. Ignore interactions between ions and the solvent.

[2]

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28. What is the organic product of the reaction of 1-chloropentane with aqueous sodium hydroxide?

- A. pentan-1-ol
- B. 1-chloropentan-1-ol
- C. 1-chloropent-1-ene
- D. 1-chloropent-2-ene

30. Which species can act as an electrophile?

- A. CH_4
 - B. Cl_2
 - C. Cl^-
 - D. OH^-
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