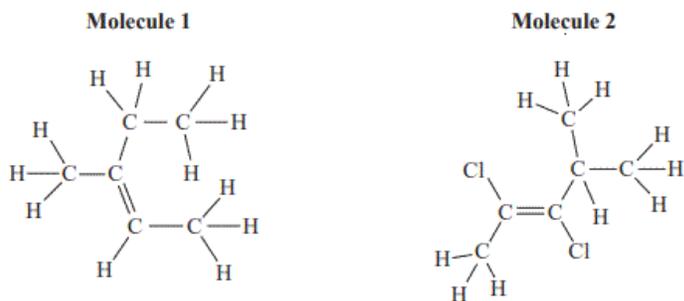


Organic (2021 VCE)

1. Consider the following molecules



Which of the following options correctly describes Molecule 1 and Molecule 2?

	Molecule 1	Molecule 2
A.	cis	cis
B.	cis	trans
C.	trans	trans
D.	trans	cis

Solution will appear here

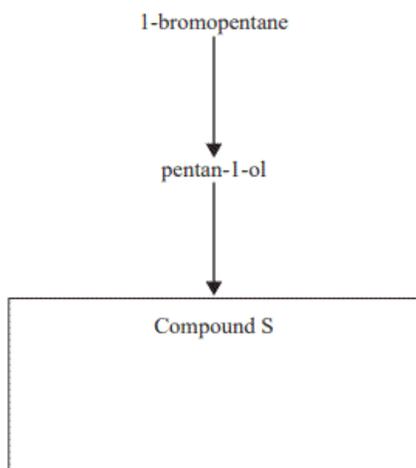
[Solution](#)

2. Which one of the following statements is correct?

- A. Pentane has a higher flashpoint than octane.
- B. The flashpoint of all the structural isomers of $C_4H_{10}O$ are equal.
- C. The higher the flashpoint of a compound, the higher its fire risk.
- D. The flashpoint of all the optical isomers of 3-methyl hexane are equal.

[Solution](#)

3. A reaction pathway beginning with 1-bromopentane is shown below.



Solution will appear here

a. Draw the structural formula for an isomer of 1-bromopentane that contains a chiral carbon and circle this chiral carbon.

[Solution](#)

b. i. Write a balanced equation for the reaction that will produce pentan-1-ol from 1-bromopentane and a sodium salt.

Solution

ii. Calculate the atom economy in the production of pentan-1-ol from 1-bromopentane and a sodium salt.

Solution

c. Pentan-1-ol is fully oxidised to Compound S. Write the IUPAC name of Compound S in the box provided.

Solution

d. In an alternative reaction pathway, pentanamide can be formed from 1-bromopentane. Draw the skeletal formula for pentanamide.

Solution