



E-Z Isomerism in Alkenes and Dienes Multiple Choice Questions

- Which of the following is true for E-Z isomerism?
 - a) It occurs due to free rotation around a single bond.
 - b) It occurs due to restricted rotation around a double bond.
 - c) It only occurs in cyclic compounds.
 - d) It only occurs in compounds with chiral centers.
- Which of the following is the correct E/Z notation for the compound with the structure $\text{CH}_3\text{CH}=\text{CHCH}_3$ where the two largest groups on each carbon are on opposite sides?
 - a) Z-2-Butene
 - b) E-2-Butene
 - c) Cis-2-Butene
 - d) Trans-2-Butene
- What determines the priority of groups in E-Z isomerism?
 - a) The number of atoms.
 - b) The size of the groups.
 - c) The atomic number of the atoms directly attached to the double bond.
 - d) The electronegativity of the atoms.
- Which of the following compounds can exhibit E-Z isomerism?
 - a) 1-Butene
 - b) 2-Butene
 - c) Propene
 - d) Ethene
- What is the correct E/Z notation for the compound $\text{CH}_3\text{CH}=\text{CHCl}$ where the highest priority groups on each carbon of the double bond are on the same side?
 - a) E-1-Chloropropene
 - b) Z-1-Chloropropene
 - c) E-2-Chloropropene
 - d) Z-2-Chloropropene
- Which of the following compounds exhibits E-Z isomerism?
 - a) 1-Butene
 - b) 2-Methylpropene
 - c) 1,2-Dichloroethene
 - d) Propene
- What is the correct E/Z notation for the compound $\text{CH}_3\text{CH}=\text{CHBr}$ where the highest priority groups on each carbon of the double bond are on opposite sides?
 - a) E-1-Bromopropene
 - b) Z-1-Bromopropene
 - c) E-2-Bromopropene
 - d) Z-2-Bromopropene
- Which of the following dienes can exhibit E-Z isomerism?
 - a) 1,3-Butadiene
 - b) 1,2-Butadiene

- c) 1,4-Hexadiene
 - d) 2,3-Hexadiene
9. What is the correct E/Z notation for 1,2-dichloro-2-butene where the chlorine atoms are on the same side?
- a) E-1,2-Dichloro-2-butene
 - b) Z-1,2-Dichloro-2-butene
 - c) E-3,4-Dichloro-2-butene
 - d) Z-3,4-Dichloro-2-butene
10. Which of the following statements is true about E-Z isomers?
- a) They have identical physical and chemical properties.
 - b) They have different physical properties but identical chemical properties.
 - c) They have identical physical properties but different chemical properties.
 - d) They have different physical and chemical properties.
11. In E-Z isomerism, the higher priority group on each carbon is determined by:
- a) The molecular weight of the group.
 - b) The number of atoms in the group.
 - c) The atomic number of the atoms directly attached to the double bond.
 - d) The type of bonding in the group.
12. Which of the following compounds does not exhibit E-Z isomerism?
- a) 1-Butene
 - b) 2-Butene
 - c) 1,2-Dichloroethene
 - d) 1,2-Dibromoethene
13. Which of the following is true about the E isomer?
- a) The highest priority groups are on the same side.
 - b) The highest priority groups are on opposite sides.
 - c) It is always more stable than the Z isomer.
 - d) It does not exist.
14. Which compound has an E isomer where the substituents with the highest priority are on opposite sides of the double bond?
- a) E-2-Butene
 - b) Z-2-Butene
 - c) E-1-Butene
 - d) Z-1-Butene
15. For a diene to exhibit E-Z isomerism, what is required?
- a) Free rotation around all double bonds.
 - b) Restricted rotation around at least one double bond.
 - c) Presence of a chiral center.
 - d) No substituents on the double bonds.

- 9. b) Z-1,2-Dichloro-2-butene
- 10. d) They have different physical and chemical properties.
- 11. c) The atomic number of the atoms directly attached to the double bond.
- 12. a) 1-Butene
- 13. b) The highest priority groups are on opposite sides.
- 14. a) E-2-Butene
- 15. b) Restricted rotation around at least one double bond.

Answer Key

- 1. b) It occurs due to restricted rotation around a double bond.
- 2. b) E-2-Butene
- 3. c) The atomic number of the atoms directly attached to the double bond.
- 4. b) 2-Butene
- 5. b) Z-1-Chloropropene
- 6. c) 1,2-Dichloroethene
- 7. a) E-1-Bromopropene
- 8. d) 2,3-Hexadiene