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| Selected & Constructed Response Items C5.8B (MME content) |
| Draw isomers of simple hydrocarbons. |
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Selected/Constructed Response Items for Introduction to Bonding

**C5.8B:** Draw isomers of simple hydrocarbons.

1. Isomer are
   1. molecules that have the same structural formula but different chemical formula.
   2. molecules that have the same chemical formula but different structural formulas.
   3. molecules that that have the same structural formula but a different number of bonds between at least one pair of carbons.
   4. molecules that have the same chemical formula but a different number of bonds between at least one pair of carbons.
2. When comparing one isomer of a given type to another,
   1. the physical properties will be the same, but the chemical properties will be different.
   2. the chemical properties will be the same, but the physical properties will be different.
   3. both the physical and chemical properties will be the same.
   4. both the physical and chemical properties will be different.
3. Draw and name the two structural isomers of the alkyne C4H6.
4. Draw all the structural isomers for C5H12 (there are three).
5. Draw and name the five structural isomers of C5H10.

Teacher Companion Notes to Selected Constructed Response Items

for Introduction to Bonding

**High School Chemistry**

**C5.8B:**

**Question 1:**

**Difficulty:** Low, all students should be able to answer this question correctly.

**Correct answer: b,** a direct statement of the definition if isomer.

Distracter a, confuses structural formula and molecular formula.

Distracter c, incorrect statement about structural formula and number of bonds.

Distracter d, incorrect statement about number of bonds.

**Question 2:**

**Difficulty:** Low, all students should be able to answer this question correctly.

**Correct answer: d**, different isomers of a given type (chemical formula) have different properties.

Distracter a, incorrect statement about physical properties.

Distracter b, incorrect statement about chemical properties.

Distracter c, incorrect statement about physical and chemical properties.

**Question 3:**

**Difficulty:** Low, all students should be able to answer this question correctly.

**Correct answer:** n-1-butyne & n-2-butyne.

**Question 4:**

**Difficulty:** Average, a well prepared student should be able to answer this question.

**Correct answer:** n-pentane, 2-methylbutane & 2,2-dimethylpropane

**Question 5:**

**Difficulty:** High, this question may challenge the above average student.

**Correct answer:** n-1-pentene, 2-methyl-1-butene, 3-methyl-1-butene, n-2-pentene & 1-metthyl-2-butene.