

Covalent bonding

1) Define a covalent bond.

2) Where on the periodic table would you find elements that bond by covalent bonding?

3) Arrange the following in order of increasing carbon to carbon bond strength (weakest first), C_2H_4 , C_2H_6 , C_2H_2

4) Arrange the following in order of decreasing carbon to carbon bond length (longest first), C_2H_4 , C_2H_6 , C_2H_2

5) State the relationship between the number of electrons in a covalent bond and the length and strength of the bond.

Answers:

1) A covalent bond is the electrostatic attraction between positive nuclei and a shared pair of bonding electrons.

2) Covalent bonding occurs between non-metal elements which are found on the right side of the periodic table.

3) C_2H_6 , C_2H_4 C_2H_2

4) C_2H_6 , C_2H_4 C_2H_2

5) As the number of electrons in the bond increases (2 in a single bond, 4 in a double bond and 6 in a triple bond), the strength of the bond increases and the length of the bond decreases.