1 Based on the following average bond enthalpies, which is more stable, a ring of eight single bonded O's, or four double bonded O2's?
O-O: 142 kJ/mol; O=O: 498.7 kJ/mol

A O8
B 4 O2
C More information needed

2 Based on the following average bond enthalpies, which is more stable, a ring of eight single bonded S's, or four double bonded S2's?
S-S: 268 kJ/mol; S=S: 352 kJ/mol

A S8
B 4 S2
C More information needed

3 Why is the O=O bond more than three times more stable than two O-O bonds, whereas the S=S bond is only half again more stable than two S-S bonds?

A O is more electronegative than S
B O is smaller than S
C S is a solid a room temperature whereas oxygen is a gas.
D None of the above

4 The enthalpy change in the hypothetical reaction

A-A + 2 B --> 2 A-B

must be ...

A Positive (endothermic)
B Negative (exothermic)
C Unable to say without further information

5 The enthalpy change in the hypothetical reaction

2 A-B --> A-A + B-B

must be ...

A Positive (endothermic)
B Negative (exothermic)
C Unable to say without further information

6 The enthalpy change in the hypothetical reaction

A=B --> A-B

must be ...

A Positive (endothermic)
B Negative (exothermic)
C Unable to say without further information

7 The enthalpy change in the hypothetical reaction

A-B --> A + B

must be ...

A Positive (endothermic)
B Negative (exothermic)
C Unable to say without further information