1. Choose the wrong statement according to the valence bond theory:

   A. A σ-bond is stronger than a π-bond

   B. p-orbitals always have only sideways overlapping

   C. s-orbitals never form π-bonds

   D. There can be only one sigma bond between two atoms

2. Which of the following statements is not correct for sigma and pi bond formed between two carbon atoms?

   A. Free rotation of atoms about a sigma bond is allowed but not in the case of pi - bond

   B. Sigma bond determines the direction between carbon atoms but a pi bond has no primary effect in this regard

   C. Sigma bond is stronger than a pi bond

   D. Bond energies of sigma and pi bonds are of the order of 264 kJ/mol and 347 kJ/mol respectively

3. Which of the following statements are correct for the formation of a stable bond according to the valence bond theory?

   A. The electrons should have opposite spins

   B. The two atoms should be close to each other

   C. Higher overlapping of the electron clouds

   D. All are correct

4. The strength of sigma bonds formed by the overlapping of atomic orbitals is in the order:

A. $s-s<s-p<p-p$

B. $s-s<p-p<s-p$

C. $s-p<s-s<p-p$

D. $p-p<s-s<s-p$

5. Which of the following is not correct?

A. A sigma (σ) bond is weaker than a π bond

B. The extent of overlapping of orbitals in sigma bonds (σ) is more than that in pi (π) bonds

C. A double bond is stronger than a single bond

D. The bond dissociation energy of a sigma bond is more than that of a pi bond