

# Work sheet

## Molecular orbitals

1. The combining atomic orbitals must have same \_\_\_\_\_ and same \_\_\_\_\_.
2. For a bonding molecular orbital the electron density is \_\_\_\_\_ the nuclei of bonded atoms.
3. The energy of  $\sigma_{2p_z}$  molecular orbital is \_\_\_\_\_ in energy than  $\pi_{2p_x}$  and  $\pi_{2p_y}$ .
4. One half the difference between the number of electrons present in the bonding and antibonding orbitals is called \_\_\_\_\_.

5. Helium molecule is unstable and does not exist because bond order is \_\_\_\_\_.

Symmetry energy between

Higher bond order Zero