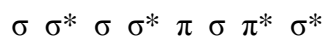


Marks
3

- The electronic energies of the molecular orbitals of homonuclear diatomics from the period starting with Li can be ordered as follows (with energy increasing from left to right):



Using this ordering by energy of the molecular orbitals, how many unpaired spins do you expect in the ground state configurations of each of B₂, C₂, N₂, O₂ and F₂?

B ₂	C ₂	N ₂	O ₂	F ₂

Consider the 15 species X₂⁻, X₂ and X₂⁺ where X is B, C, N, O or F. What is the maximum bond order found among these 15 species and which molecules or ions exhibit this bond order?

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What is the minimum bond order found among these 15 species and which molecules or ions exhibit this bond order?

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