

Marks
5

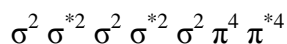
- The electronic configuration of the molecular oxygen dianion in its ground state is, in order (from left to right) of increasing energy: $\sigma^2 \sigma^{*2} \sigma^2 \sigma^{*2} \sigma^2 \pi^4 \pi^{*4}$

What is the bond order of O_2^{2-} ?

Is O_2^{2-} paramagnetic or diamagnetic? Explain your answer.

How many of the valence electrons in O_2^{2-} are in 'lone pairs' according to Lewis theory?

On the electron configuration of O_2^{2-} below, indicate by arrows the molecular orbitals that contain the electron 'lone pairs'.



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