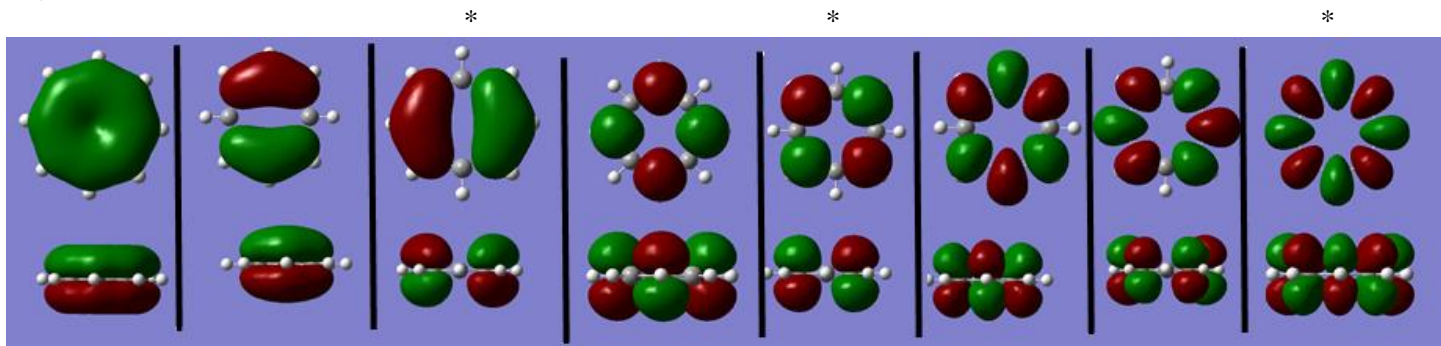


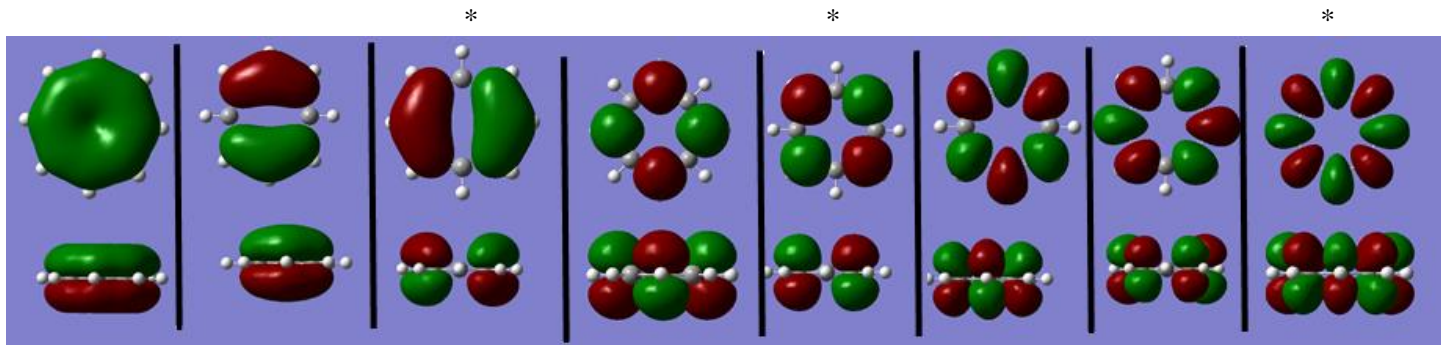
Ch112  
In class exercise  
Oct 4, 2016

The eight  $\pi$ -orbitals of cyclooctatetraene dianion ( $C_8H_8^{2-}$ ), an aromatic compound, are shown below. For each of the starred molecular orbitals (MO's 3, 5, 8), find irreducible representations corresponding to  $C_{4v}$ ,  $C_{2h}$ ,  $D_{4d}$ , and  $D_{8h}$  point groups. Assume X and Y axes to be in the plane of the molecule, oriented vertically and horizontally, respectively.

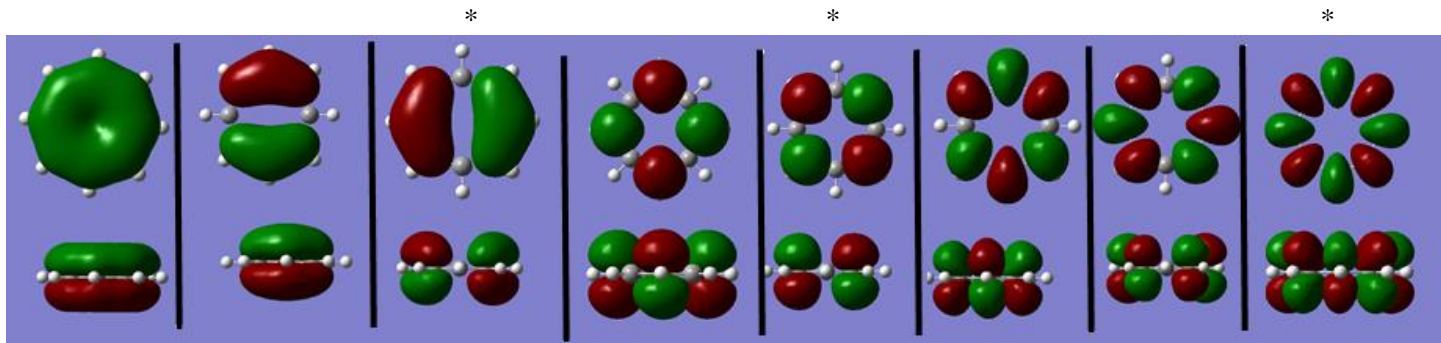
$C_{4v}$



$C_{2h}$



$D_{4d}$



$D_{8h}$

