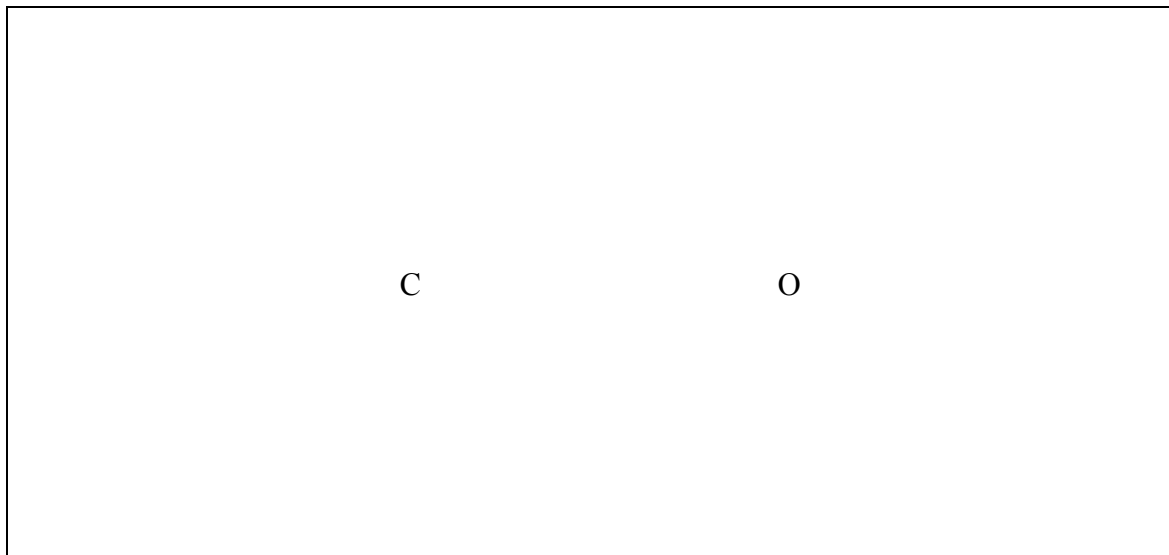


**Marks**  
**5**

- Carbon monoxide is a poisonous gas that may be obtained from incomplete combustion. Draw the Lewis structure of carbon monoxide and add the labels *lone pair*,  $\sigma$ -bond,  $\pi$ -bond as appropriate.

On the atoms below, draw and label the orbitals (atomic and/or hybridised) that give rise to the bonds and lone pairs on carbon monoxide and clearly show which orbitals overlap with each other and the type of bond that results.



**THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY.**