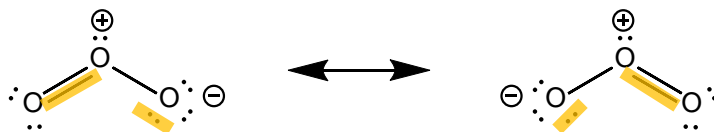


## Answers to Exercise 4.5

### Pi Molecular Orbital Energy Level Diagrams: Lone Pairs

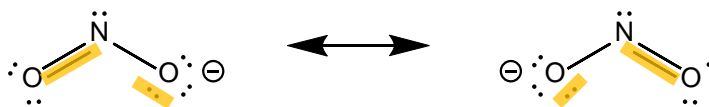
1.



The highlighted four electrons are in  $\pi$  MOs.

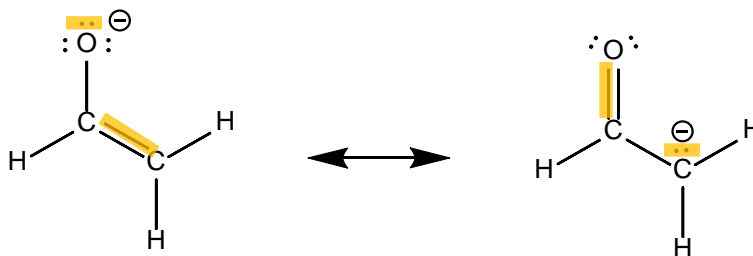
2.

(a)



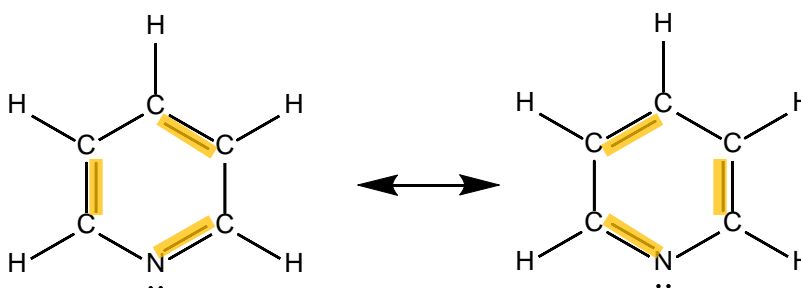
There are four electrons in the pi system.

(b)



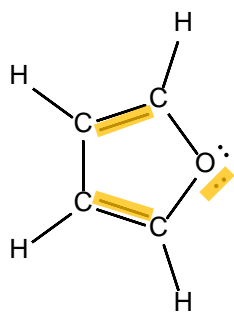
There are four electrons in the pi system.

(c)



There are six electrons in the pi system.

(d)



There are six electrons in the pi system.