

### Exercise Electronic configuration of Manganese

- 1) Write the electronic configuration of Manganese at its ground state:

$^{25}\text{Mn} : 1s \overset{\square}{2s} \overset{\square}{\underset{\sim}{2p}} \overset{\square}{3s} \overset{\square}{3p} \overset{\square}{4s} \overset{\square}{3d} \square$

- 2) How many valence e belong to the **Manganese**:  
3) Determine the outermost orbital in **Manganese**:  
4) Write the electronic configuration of Mn ion after 2 e are donated:

$^{25}\text{Mn} : 1s \overset{\square}{2s} \overset{\square}{\underset{\sim}{2p}} \overset{\square}{3s} \overset{\square}{3p} \overset{\square}{4s} \overset{\square}{3d} \square$

- 5) Write the electronic configuration of Mn ion after 4 e are donated:

$^{25}\text{Mn} : 1s \overset{\square}{2s} \overset{\square}{\underset{\sim}{2p}} \overset{\square}{3s} \overset{\square}{3p} \overset{\square}{4s} \overset{\square}{3d} \square$

Give a set of quantum numbers for the e in the lowest energy orbital:

1st e:  $n = \square$ ,  $l = \square$ ,  $m = \square$ ,  $s = \square$

or

2nd e:  $n = \square$ ,  $l = \square$ ,  $m = \square$ ,  $s = \square$

