

TD n° 3

Ex 01:

1. la structure de Lewis des atomes suivants:

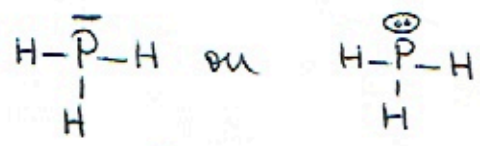
- ${}_{3}\text{Li} : 1s^2 2s^1 \Rightarrow {}_{3}\text{Li} = [{}_{2}\text{He}] 2s^1$  1  $\text{Li}^{\bullet}$
- ${}_{5}\text{B} : 1s^2 2s^2 2p^1 \Rightarrow {}_{5}\text{B} = [{}_{2}\text{He}] 2s^2 2p^1$   
1 1      $\text{B}^{\bullet}$
- ${}_{5}\text{B}^* : [{}_{2}\text{He}] 2s^1 2p^2$   
1 1 1    $\text{B}^{\bullet}$
- ${}_{8}\text{O} : 1s^2 2s^2 2p^4 \Rightarrow {}_{8}\text{O} = [{}_{2}\text{He}] 2s^2 2p^4$   
1 1 1 1  $\text{O}^{\bullet}$
- ${}_{12}\text{Mg} : 1s^2 2s^2 2p^6 3s^2 \Rightarrow {}_{12}\text{Mg} = [{}_{10}\text{Ne}] 3s^2$   $\text{Mg}$

2. la représentation de Lewis des molécules suivantes:

$\text{PH}_3 : {}_{15}\text{P} = [{}_{10}\text{Ne}] 3s^2 3p^3$   $N_{ev} = 5 + 3(1) = 8/2 = 4$  doublets

${}_{1}\text{H} = 1s^1$  1

${}_{15}\text{P} = [{}_{10}\text{Ne}] 3s^2 3p^3$   
1 1 1  
1 1 1



$N_{ev} = 4 + 2(1) = 10/2 = 5$  d.

$\text{CS}_2 : {}_{6}\text{C} = [{}_{2}\text{He}] 2s^2 2p^2$

${}_{16}\text{S} = [{}_{10}\text{Ne}] 3s^2 3p^4$

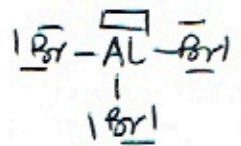
$|\underline{\text{S}} \uparrow \text{C} \downarrow \underline{\text{S}}|$  8 doublets  
 ↓ la règle de l'octet.  
 $(\text{S}=\text{C}=\text{S})$

$\text{AlBr}_3 : {}_{13}\text{Al} = [{}_{10}\text{Ne}] 3s^2 3p^1$

${}_{13}\text{Al}^* : [{}_{10}\text{Ne}] 3s^1 3p^2$

$[\text{Al}]^{\bullet}$

${}_{35}\text{Br} = [{}_{18}\text{Ar}] 4s^2 3d^{10} 4p^5$   
 $\text{Br}^{\bullet}$



$N_{ev} = 3 + 3(7) = 24/2 = 12$  d.

$\text{CaCl}_2 : {}_{20}\text{Ca} = [{}_{18}\text{Ar}] 4s^2$   $\text{Ca}$

${}_{17}\text{Cl} = [{}_{10}\text{Ne}] 3s^2 3p^5$   $\text{Cl}^{\bullet}$

$N_{ev} = 2 + 2(7) = 16/2 = 8$  d.

