TD n°3

Exo1:

1. La structure de Lewis des atomes suivants:

- $_3Li$: $1s^2 2s^1$ ⇒ $_3Li$: $[_2He]\ 2s^1$. [1] — Li
- $_5B$: $1s^2 2s^2 2p^1$ ⇒ $_5Br$ $[_2He]\ 2s^2 2p^1$ [1↓] [1] [ ] [ ]

  $_5B^*$: $[_2He]\ 2s^1 2p^2$ [1] [1] [1] [ ] — B
- $_8O$: $1s^2 2s^2 2p^4$ ⇒ $_8O$: $[_2He]\ 2s^2 2p^4$ [1↓] [1↓] [1] [1] — O
- $_{12}Mg$: $1s^2 2s^2 2p^6 3s^2$ ⇒ $_{12}Mg$: $[_{10}Ne]\ 3s^2$ — Mg

2. La représentation de Lewis des molécules suivantes:

PH_3 : $_{15}P$: $[_{10}Ne]\ 3s^2 3p^3$ — $N_{ev} = 5 + 3(1) = 8/2 = 4$ doublets

$_1H = 1s^1$ [1]

$_{15}P$: $[_{10}Ne]\ 3s^2 3p^3$ [1↓] [1] [1] [1] ↕ [1] [1] [1]

H–P(H)–H ou H–P(⊖)(H)–H

CS_2 : $_6C = [_2He]\ 2s^2 2p^2$

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

$N_{ev} = 4 + 2(6) = 16/2 = 8$ d.

|S⁻ → C ← S⁻| 8 doublets

↓ la règle de l'octet.

S=C=S

$AlBr_3$: $_{13}Al = [_{10}Ne]\ 3s^2 3p^1$ [1↓] [1] [ ] [ ]

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

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

|Br⁻ – Al(□) – Br⁻|

|Br⁻|

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

$CaCl_2$: $_{20}Ca = [_{18}Ar]\ 4s^2$ — Ca

$_{17}Cl = [_{10}Ne]\ 3s^2 3p^5$ — Cl

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

Ca^* : Ca. ⇒ |Cl⁻ – Ca – Cl⁻|