Exo 2 (3)

1) $E_i = 21{,}8\ eV$

$E_i = E_f - E_i = E_\infty - E_1 = -\left(-\frac{13{,}6\,Z^2}{n^2}\right)$ (0,5)

$\frac{13{,}6\,Z^2}{(1)^2} = 21{,}8 \rightarrow \boxed{Z = 4} \Rightarrow \boxed{q = 3}$ (0,5)

$= {}^{4}_{4}X^{3+}$

2) $E = \frac{-13{,}6\,Z^2}{n^2}$ (0,5) Second excited state $\Rightarrow n = 3$

$E = \frac{-13{,}6\,(4)^2}{(3)^2} = \boxed{24{,}17\ eV}$ (0,5)

3) $r = \frac{0{,}53\,n^2}{Z}$ (0,5) $= \frac{0{,}53 \cdot (2)^2}{4} = \boxed{0{,}53\ \text{Å}}$ (0,5)

Exo 3

1) (a)

	Configuration	Period	Group
$_8O$	$1s^2 2s^2 2p^4$	2	A VI
$_{11}Na$	$1s^2 2s^2 2p^6 3s^1$	3	A I
$_9F$	$1s^2 2s^2 2p^5$	2	A VII
$_{16}S$	$1s^2 2s^2 2p^6 3s^2 3p^4$	3	A VI

(3)

(b) (0,5) $_{11}Na$ VS $\boxed{\frac{1}{3S}}$ $(n, l, m, s) \Rightarrow (3, 0, 0, +\frac{1}{2})$ $0 \leq l \leq n-1$ $-l \leq m \leq l$

(c) $x_F > x_O > x_S > x_{Na}$ (1)

Electronegativity