AP Unit 9/10 Test Review Kahoot

#3.) $E = h\nu$, $c = \lambda\nu$ $\Rightarrow E = \frac{hc}{\lambda} = \frac{(6.626E-34\ J\cdot s)(2.998E8\ m/s)}{6.4E-7\ m} = \downarrow$

$640\ nm \times \frac{1\ m}{10^9\ nm} = 6.4 \times 10^{-7}\ m$

$3.1 \times 10^{-19}\ J$

#6.)

1st	2nd	3rd	4th	5th
8	15	80	109	141

big jump! $\Rightarrow$ 2 valence e^- (easiest to remove)

$\Rightarrow$ Mg

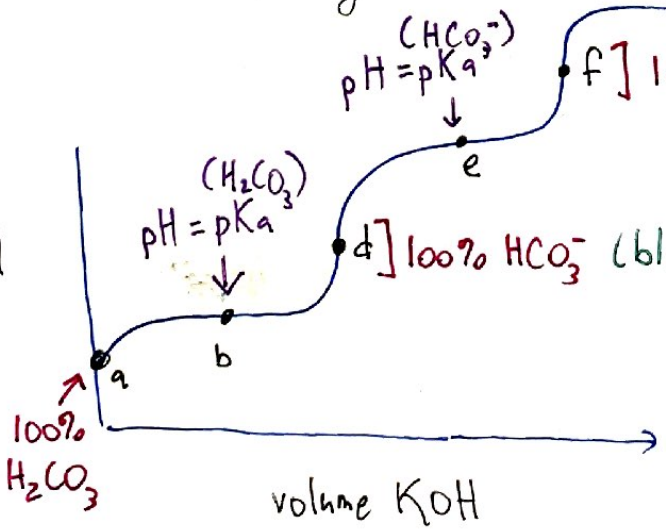
#7.) $5\ mL \times 0.10\ M = 0.5\ mmol$ (both LiOH and H_3PO_4)

$LiOH + H_3PO_4 \rightarrow Li^+ + H_2O + H_2PO_4^-$

	0.5	0.5		
	−0.5	−0.5		+0.5
	∅	∅		0.5 mmol

both completely neutralized!

#11.) H_2CO_3 / KOH



#8.) Fe: [Ar] $\underline{\uparrow\downarrow}_{4s}$ $\underline{\uparrow\downarrow}$ $\underline{\uparrow}$ $\underline{\uparrow}$ $\underline{\uparrow}$ $\underline{\uparrow}_{3d}$

Fe^{3+} ⇒ remove 3 e^- highlighted (4s before 3d)

Fe^{3+}: [Ar] $\underbrace{\underline{\uparrow}\ \underline{\uparrow}\ \underline{\uparrow}\ \underline{\uparrow}\ \underline{\uparrow}}_{\text{5 unpaired}}$

#13.) $c = \lambda\nu \Rightarrow \nu = \frac{c}{\lambda} = \frac{2.998\text{ E }8\ m/s}{6.2\times10^{-7}\ m} = \boxed{4.8\times10^{14}\ \frac{1}{s}}$

↑ 620 nm

#12.) $\underset{1s}{\boxed{\uparrow\downarrow}}$ $\underbrace{\underset{2s}{\boxed{\uparrow\downarrow}}\ \underbrace{\boxed{\uparrow}\boxed{\uparrow}\boxed{\uparrow}}_{2p}}$ ⇒ 5 val. e^-