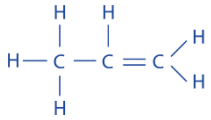
Retrieval Practice: Year 12 Number 4

Rules: Never look at your notes for retrieval practice! Do as many as you can, even if they are educated guesses. When you have tried (hard!) to answer them all, check the mark scheme and rate each question:

- Easy, remembered perfectly
- Harder – could remember part of it or was familiar when I saw the answer
- Very hard – didn't recognise the answer so need to go back over this

	Question	Rating
1	Write a balanced equation for the displacement reaction between magnesium and copper (II) sulfate	
2	Draw the displayed formula of propene	
3	Give the full electron configuration for a chloride ion	
4	Explain why group 1 metals get more reactive as you go down the group	
5	Write a balanced equation for the complete combustion of methane	
6	Determine the empirical formula for the oxide of vanadium that contains 56% vanadium	
7	Write an equation, including state symbols, for the first ionisation energy of fluorine	
8	Calculate the atom economy for the production of ethanol using fermentation: $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$	
9	Name two pieces of apparatus used in titration	
10	Give the colour of the precipitate formed when aqueous silver nitrate is added to a solution containing iodide ions	

Answers:

	Question
1	Write a balanced equation for the displacement reaction between magnesium and copper (II) sulfate *$Mg + CuSO_4 \rightarrow MgSO_4 + Cu$*
2	Draw the displayed formula of propene 
3	Give the full electron configuration for a chloride ion *$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$*
4	Explain why group 1 metals get more reactive as you go down the group • *Atomic radius/number of shells increases* • *The outer electron is further from the nucleus and there is more shielding* • *The outer electron is lost more easily/lower first ionisation energy*
5	Write a balanced equation for the complete combustion of methane *$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$*
6	Determine the empirical formula for the oxide of vanadium that contains 56% vanadium V: 56/50.1 = 1.1178 → Ratio: 1 → Ratio: 2 O: 44/16 = 2.75 → 2.46 → 5 *Formula: V_2O_5*
7	Write an equation, including state symbols, for the first ionisation energy of fluorine *$F(g) \rightarrow F^+(g) + e^-$*
8	Calculate the atom economy for the production of ethanol using fermentation: $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$ *Mass of useful product = 2 x 46 = 92* *Total mass of reactants = 180* *Atom economy = (92/180) x 100 = 51%*
9	Name two pieces of apparatus used in titration *Any two from: conical flask, burette, (volumetric) pipette, white tile, clamp/burette holder, funnel*
10	Give the colour of the precipitate formed when aqueous silver nitrate is added to a solution containing iodide ions *Yellow*