















































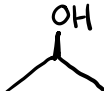


September Retrieval Practice: Year 13

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	Answer	Rating
1	Draw the skeletal formula of propan-2-ol		  
2	Write an equation, including state symbols, for the second ionisation energy of potassium		  
3	Give the electronic configuration (using s, p, d notation) for a calcium atom		  
4	Give the colour change observed when sodium dichromate acts as an oxidising agent on an alcohol		  
5	Give the oxidation state of phosphorous in H_3PO_4		  
6	Write a balanced equation for the reaction between calcium hydroxide and nitric acid		  
7	Name three pieces of apparatus used in titration		  
8	Define enthalpy change of formation		  
9	Calculate the mass of sodium hydroxide needed to make 150cm^3 of a 0.1 mol dm^{-3} solution		  
10	Name the type of reaction occurring when propene reacts with hydrogen bromide		  
11	Name the shape and state the bond angle in PF_3		  
12	Give the strongest intermolecular force between molecules of propanal, $\text{CH}_3\text{CH}_2\text{CHO}$		  
13	Describe and explain the trend in boiling points down group 7		  
14	Write a balanced half equation for the reduction of MnO_4^- to Mn^{2+}		  
15	Calculate the value of x in a hydrated salt, $\text{Ba}(\text{OH})_2 \cdot x\text{H}_2\text{O}$, if 0.631 g hydrated salt was heated to produce 0.343 g anhydrous salt		  

	Question	Answer
1	Draw the skeletal formula of propan-2-ol	
2	Write an equation, including state symbols, for the second ionisation energy of potassium	$K^+ (g) \rightarrow K^{2+} (g) + e^-$
3	Give the electronic configuration (using s, p, d notation) for a calcium atom	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
4	Give the colour change observed when sodium dichromate acts as an oxidising agent on an alcohol	Turns from orange to green
5	Give the oxidation state of phosphorous in H_3PO_4	+5
6	Write a balanced equation for the reaction between calcium hydroxide and nitric acid	$Ca(OH)_2 + 2HNO_3 \rightarrow Ca(NO_3)_2 + 2H_2O$
7	Name three pieces of apparatus used in titration	Burette, (volumetric) pipette, conical flask, white tile
8	Define enthalpy change of formation	Enthalpy change when one mole of compound is formed from its elements in their standard states/under standard conditions
9	Calculate the mass of sodium hydroxide needed to make 150cm^3 of a 0.1 mol dm^{-3} solution	Moles = $0.1 \times 0.15 = 0.015$ Mass = mol x Mr = $0.015 \times 40 = 0.6\text{ g}$
10	Name the type of reaction occurring when propene reacts with hydrogen bromide	Electrophilic addition
11	Name the shape and state the bond angle in PF_3	(trigonal) pyramidal, 107°
12	Give the strongest intermolecular force between molecules of propanal, CH_3CH_2CHO	Permanent dipole attractions
13	Describe and explain the trend in boiling points down group 7	<ul style="list-style-type: none"> - BP increases down group 7 - Larger molecules / more electrons - Therefore stronger London forces / Van der Waals - More energy needed to overcome
14	Write a balanced half equation for the reduction of MnO_4^- to Mn^{2+}	$MnO_4^- + 8H^+ + 5e^- \rightarrow Mn^{2+} + 4H_2O$
15	Calculate the value of x in a hydrated salt, $Ba(OH)_2 \cdot xH_2O$, if 0.631 g hydrated salt was heated to produce 0.343 g anhydrous salt	$0.343 / 171.3 = 0.002\text{ mol anhydrous } Ba(OH)_2$ Mass $H_2O = 0.631 - 0.343 = 0.288\text{ g}$ Moles $H_2O = 0.288 / 18 = 0.016$ Ratio = $0.002 : 0.016 = 1 : 8$ Therefore $x = 8$