NAME_____

Year 11 Chemistry Chemical Calculations Assignment 2 Concentration

1.			12
	(a) Use a diagram to show the difference between a concentrated and a dilute solution.(b) Explain, using an example, how two solutions with different volumes can have the sa	me	/2
	concentration.		/2
2.	Convert the following concentrations to mol L ⁻¹ .		
	(a) 57 g L ⁻¹ ammonium chloride (53.49 g mol ⁻¹)		/1
	(b) 15 g L ⁻¹ sulfuric acid		/2
	(c) 0.93 kg L^{-1} potassium chromate (194.19 g mol ⁻¹)		/2
3.	Convert the following concentrations to g L ⁻¹ .		
	(a) 2.0 mol L^{-1} nitric acid (63.01 g mol ⁻¹)		/1
	(b) 5.0×10 ⁻² mol L ⁻¹ calcium bicarbonate		/2
	(c) 1.5×10^{-3} mol mL ⁻¹ sodium hydroxide (39.997 g mol ⁻¹)		/2
4.	Suggest one problem that could occur in an experiment if the wrong units were written f	ora	
	concentration. Write an example to show how this could happen.		/2
5.	Calculate the concentration for the following:		
-	(a) 0.020 mol in 1.0 L		/2
	(b) 2.61 g in 0.500 L		, /2
	(c) 0.12 g in 100 mL		/2
	(d) 65 mg in 1.5 L		/2
6.	Describe why $C = \frac{n}{V}$ and $C = \frac{m}{V}$ cannot be used for the same things.		/2
7.			10
	(a) Calculate the concentration in mol L ¹ if 3.0 g of NaOH is dissolved in 0.10 L of water.	1	/3
	(b) Calculate the concentration in g L ² if 0.00850 mol of hydrogen chloride (36.46 g mol ²	') is dissolv	red in /3
			75
8.	Describe the method you would use to rearrange $C = \frac{solute}{1}$:		
	volume		
	(a) To calculate quantity of solute, given concentration and volume.		/2
	(b) To calculate volume, given volume and quantity of solute.		/2
9.	Calculate the volume of 22 g L^{-1} solution that would contain 5.0 g of solute.		/2
10).		
	(a) Calculate the number of moles of solute in 0.150 L of 0.100 mol L ⁻¹ solution.		/2
	(b) Hence calculate the mass of AgNO ₃ needed to make 0.150 L of 0.100 mol L^{-1} solution.		/2
11	Calculate the volume of water that would make a 3.0 mol 1^{-1} solution from 5.0 g of NaO	н	(2
	calculate the volume of watch that would make a 5.0 more solution nom 5.0 g of NaO		13
		TOTAL	/45