

CALCULATING VOLUME

1 A teacher heated 18.8 g of copper(II) nitrate.

(i) Calculate the number of moles of copper(II) nitrate present in the 18.8 g.

..... mol [2]

(ii) Calculate the maximum number of moles of oxygen that can be made by heating 18.8 g of copper(II) nitrate.

..... mol [1]

(iii) Calculate the maximum volume of oxygen at room temperature and pressure, in cm^3 , that can be made by heating 18.8 g of copper(II) nitrate.

..... cm^3 [1]

MARKING SCHEME:

(i)	M1 188 M2 $(18.8 / 188) = 0.1(00)$	2
(ii)	0.05	1
(iii)	1200	1

2

Dilute sulfuric acid reacts with aqueous sodium hydrogencarbonate in a neutralisation reaction.



In a titration, 0.200 mol/dm^3 aqueous sodium hydrogencarbonate was used to neutralise 20.0 cm^3 of dilute sulfuric acid of concentration 0.150 mol/dm^3 .

(i) Calculate the number of moles of dilute sulfuric acid used in the titration.

..... mol [1]

(ii) Calculate the number of moles of sodium hydrogencarbonate needed to neutralise the dilute sulfuric acid.

..... mol [1]

(iii) Calculate the volume, in cm^3 , of 0.200 mol/dm^3 aqueous sodium hydrogencarbonate needed to neutralise the dilute sulfuric acid.

..... cm^3 [1]

MARKING SCHEME:

(i)	0.003	1
(ii)	0.006	1
(iii)	30	1

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