Answer sheet

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IG Teaching Hubs Chemistry Worksheets

Lesson 45 – Worksheet 1

**1 a** 0.0300

**b** 200

**c** 0.250

**d** 0.0200

**e** 500

**2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| B | → | E | → | C | → | A | → | D |

**B** 2 dm3 containing 0.2 moles concentration = 0.2 ÷ 2 = 0.1 mol/dm3

**E** 7 dm3 containing 3.5 moles concentration = 3.5 ÷ 7 = 0.5 mol/dm3

**C** 2 dm3 containing 5 moles concentration = 5 ÷ 2 = 2.5 mol/dm3

**A** 3 dm3 containing 9 moles concentration = 9 ÷ 3 = 3.0 mol/dm3

**D** 1 dm3 containing 4 moles concentration = 4 ÷ 1 = 4.0 mol/dm3

**3** **a** 0.5 ÷ 3 = 0.167 mol/dm3

**b** 3 ÷ 0.2 = 15.0 mol/dm3

**c** 0.25 ÷ 0.03 = 8.33 mol/dm3

**d** 4.21 ÷ 0.991 = 4.25 mol/dm3

**e** 0.08 ÷ 0.058 = 1.38 mol/dm3

Lesson 45 – Worksheet 2

**1** **i** moles of sodium hydroxide = concentration × volume = 0.3 × 0.025 = 7.5 × 10−3 mol

**ii** molar ratio is NaOH : CH3COOH which is 1 : 1 so   
moles of ethanoic acid = 7.5 × 10−3 mol

**iii** concentration of ethanoic acid = moles ÷ volume = (7.5 × 10−3) ÷ 0.0214 = 0.350 mol/dm3

**2** **i** moles of phosphoric acid = 1.5 × 0.075  0.1125 mol

**ii** molar ratio is H3PO4 : NaOH which is 1 : 3 so moles of sodium hydroxide = 0.3375 mol

**iii** volume of NaOH = moles ÷ concentration = 0.3375 ÷ 2 = 0.16875 dm3 = 168.75 cm3

Lesson 45 – Worksheet 3

**1** **a** moles = concentration × volume   


**b** Each magnesium nitrate produces 3 ions, so total number of ions

= 3 × 0.00125 × 6.02 × 1023

= 2.2575 × 1021

**2** molecules in 1 dm3

= 

= 4.816 × 1022

concentration = 

= 0.08 mol/dm3

or

moles in 25 cm3 = 

= 0.002

concentration = 

= 0.08 mol/dm3

IG Teaching Hubs Chemistry Homework sheets

Lesson 45 – Homework

**1** concentration in g/dm3 = mass in g / volume in dm3 = 0.26 / (100 ÷ 1000) = 2.6 g/dm3

**2** mass = concentration ×volume =  = 0.5 g

**3** concentration =  = 0.05 mol/dm3

**4** moles = 

**5** concentration =  = 0.02 mol/dm3

**6** concentration = 0.125 × [(2 × 23) + 12 + (3 × 16)] = 13.25 g/dm3