

0	1
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Using the data table attached, calculate the formula mass of the following compounds:

0	1
---	---

1

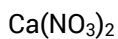


$$32 + (16 \times 3) = 80$$

[2 marks]

0	1
---	---

2

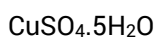


$$40 + ((14 + (16 \times 3)) \times 2) = 164$$

[2 marks]

0	1
---	---

3



$$63.5 + 32 + (16 \times 4) + (5 \times (2 + 16)) = 249.5$$

[2 marks]

Calculate the mass of the following compounds:

$\text{mass} = \text{moles} \times \text{RFM}$
--

0	1
---	---

4

0.1 moles of SO_3

$$\text{mass} = 0.1 \times 80 = 8\text{g}$$

TOP TIP : You already calculated the RFM in the earlier part of the question. If you got the first part wrong, you can still get a mark here from "error carried forward"

0	1
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5

4 moles of $\text{Ca}(\text{NO}_3)_2$

$$\text{mass} = 4 \times 164 = 656\text{g}$$

0	2
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Calculate the number moles present in:

$\text{moles} = \text{mass} \div \text{RFM}$
--

0	2
---	---

1

6g of carbon?

$$\text{moles} = 6 \div 12 = 0.5 \text{ moles}$$

[2 marks]

0	2
---	---

2

8g of sodium hydroxide?

$$\text{moles} = 8 \div (23 + 16 + 1) = 0.2 \text{ moles}$$

[2 marks]

Questions continue on the next page...

0	3	.	1
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Describe what you understand by the term Avogadro's number

[1 mark]

.....
the number of particles in one mole of any substance
.....

0	3	.	2
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How many moles of oxygen atoms are there in 500g of CaCO₃?**[3 marks]**RFM CaCO₃ = 40 + 12 + (16 x 3) = 100 [1]

Moles = mass ÷ RFM = 500g ÷ 100 = 5 moles [1]

Each mole of CaCO₃ contains 3 atoms of oxygen.5 moles x 3 = 15 moles of oxygen atoms. [1]**(Total 16 marks)****End**