

SMART EXAM RESOURCES
SUBJECT: CHEMISTRY
TOPIC: STOICHIOMETRY
SET-2-QP-MS

PERCENT BY MASS

1 Ammonium nitrate, NH_4NO_3 , is a compound of nitrogen.

- (i) Calculate the percentage by mass of nitrogen in ammonium nitrate.

percentage by mass of nitrogen = [2]

MARK SCHEME:

rfm of $\text{NH}_4\text{NO}_3 = 80$ (1) mass of N = $2 \times 14 = 28$ and percentage N = $100 \times 28 / 80 = 35\%$ (1)	2
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2

Lead is a metallic element in Group IV. One of the ores of lead is galena, which is an impure form of lead(II) sulfide, PbS .

Lead also occurs in the ore cerussite, which contains lead(II) carbonate, PbCO_3 .

(a) Calculate the relative formula mass, M_r , of PbCO_3 .

M_r of PbCO_3 = [1]

(b) The M_r of PbS is 239.

Calculate the percentage of lead by mass in PbS .

percentage of lead by mass in PbS = [1]

(c) The percentage of lead by mass in PbCO_3 is 77.5%.

Use this information and your answer to (b) to suggest whether it would be better to extract lead from PbCO_3 or PbS .

Give a reason for your answer.

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..... [1]

MARK SCHEME:

Question	Answer	Marks
(a)	267	1
(b)	$(207 / 239 \times 100 =)$ 86.6%	1
(c)	PbS because the percentage of lead is larger in PbS or answer to (b) > 77.5%	1

stoichiometry-% by mass

- (iv) A sample of silver has a relative atomic mass of 108.0.

Deduce the percentage of ^{107}Ag present in this sample of silver.

..... [1]

MARK SCHEME:

50(%)	1
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