Mark scheme

Question			Answer/Indicative content	Marks	Guidance
1			D ✓	1 (AO 2.1)	**Examiner's Comments** Selecting B, C_3H_8 with a mass to charge ratio of 44, was a very common misconception in this question. Candidates should recall that the peak on the far right represents the molecular ion, and not the peak with the highest relative abundance.
			Total	**1**	
2	a		52 ✓	1 (AO 2.1)	**Examiner's Comments** A wide range of values were seen, almost always related to peaks on the spectrum with 50 being the most common incorrect response.
	b		**Any two from:** (Instrumental methods are) (More) sensitive ✓ (More) accurate ✓ Fast(er) / can run all the time ✓	2 (2 × AO 1.1)	**ALLOW** can use smaller amounts **IGNORE** more precise **ALLOW** idea that more samples can be processed in the same time or a shorter time **Examiner's Comments** Most candidates scored 2 marks for this question. 'Precise' was however a common non-scoring response.
			Total	**3**	
3		i	**Cation Na^+** **Test** – Flame test ✓ **Result** – Yellow or orange (flame) ✓	2 (2 × 1.2)	**ALLOW** correct description of a flame test **Mark for result is dependent on correct test** **Examiner's Comments**

					The use of a flame test, and its positive result, was well known.
		ii	**Anion C*l*$^-$** **Test** – Add (a few drops of) silver nitrate solution ✓ **Result** – White precipitate ✓	2 (2 × 1.2)	**IGNORE** add dilute nitric acid **DO NOT ALLOW** add dilute hydrochloric acid **Mark for result is dependent on correct test** **Examiner's Comments** The use of silver nitrate to give a white precipitate was well known. **Misconception** Common errors / misconceptions in b(i) and (ii) were the use of electrolysis or litmus paper to identify the cation / anion. In part (ii) some candidates gave the test for chlorine, rather than chloride ions.
			Total	**4**	
4			B ✓	1 (AO1.2)	
			Total	**1**	