

Question	Marking guidance	Mark	AO	Comments
02.1	Abundance of third isotope = $100 - 91.0 - 1.8 = 7.2\%$	1	AO1b	
	$\frac{(32 \times 91) + (33 \times 1.8) + (y \times 7.2)}{100} = 32.16$	1	AO2f	
	$7.2y = 32.16 \times 100 - 32 \times 91 - 33 \times 1.8 = 244.6$	1	AO2f	
	$y = 244.6 / 7.2 = 33.97$ $y = 34$	1	AO1b	
02.2	(for electrospray ionisation)	1	AO1b	
	A high voltage is applied to a sample in a polar solvent	1	AO1b	
	the sample molecule, M, gains a proton forming MH^+			
	OR			
	(for electron impact ionisation)	1	AO1b	
	the sample is bombarded by high energy electrons	1	AO1b	
	the sample molecule loses an electron forming M^+			

02.3	Ions, not molecules, will interact with and be accelerated by an electric field	1	AO2e	
	Only ions will create a current when hitting the detector	1	AO2e	