Isotopes Mark Scheme

Q1.

Question number	Answer	Mark
	A same atomic number; different number of neutrons Options B, C and D have wrong combinations	(1)

Q2.

	Answer	Acceptable answers	Mark
(iii)	[redacted] $^{5}_{4}Be$ A		(1)

Q3.

	Answer	Mark
(i)	C $^{245}_{95}Am$ **A, B** and **D** are incorrect as these are not isotopes of americium.	(1) AO1

Q4.

Question Number	Answer	Acceptable answers	Mark
(ii)	**A** $^{39}_{19}K$		**(1)**

Q5.

Question number	Answer	Additional guidance	Mark
	same number of protons (1) different number of neutrons (1)	same atomic number different mass number	**(2)** **AO2**

Q6.

Question number	Answer	Mark
	one from • same atomic number (1) • same number of protons (1) • same element (1) and one from • different numbers of neutrons (1) • different mass numbers (1)	**(2)**

Q7.

Question Number	Answer	Acceptable answers	Mark
(c)(i)	Comparison including any two from Same number of protons (1) Different number of neutrons (1) Cobalt-60 is unstable (1)	 Same atomic/proton number/charge Different nucleon number/mass number/atomic mass Cobalt 60 is radioactive Ignore reference to electrons	**(2)**

Q8.

	Answer	**Acceptable answers**	**Mark**
	P and M OR M and P OR N and Q OR Q and N	one mark for a pair	**(1)**