

**Answer ALL questions.**

**1** Iodine-131 is a radioactive isotope that emits beta particles.

(a) The equation for this decay is



(i) The atomic (proton) number for iodine-131 is

(1)

- ☐ **A** 0
- ☐ **B** 53
- ☐ **C** 78
- ☐ **D** 131

(ii) The mass (nucleon) number for Xe is

(1)

- ☐ **A** -1
- ☐ **B** 0
- ☐ **C** 53
- ☐ **D** 131

(b) Iodine-131 is used to treat thyroid cancer.

This radioactive isotope is allowed to enter the tumour.

Explain why iodine-131 is suitable for this treatment.

(2)

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**(Total for Question 1 = 4 marks)**

