

Name of the Student: _____

Max. Marks : 8 Marks

Time : 8 Minutes

Mark Schemes

Q1.

(a) γ /gamma

- because more penetrating
- so can reach/damage cells from outside body/through skin

but

α /alpha

- does more damage/more likely to cause cancer
- can only do this if inside the body/cells
each • for 1 mark
[credit same ideas expressed conversely]

4

(b) • must emit alpha / α radiation

- *idea that* half-life must be just long enough to kill cancer cells
each for 1 mark
[do not credit simply short half-life]
(allow 'must be liquid / in solution)

2

(c) *evidence of repeated halving then*
 $n \times 3.6$

gains 1 mark

but

answer in range

22 – 25.2 days

(ie >6 and up to 7 half lives)

gains 2 marks

2

[8]