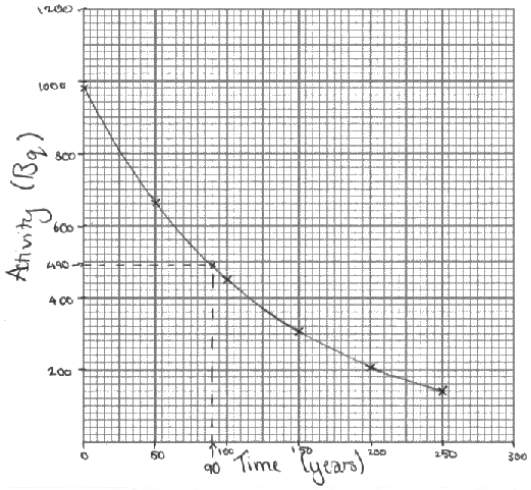
Question number	Answer	Notes	Marks
6 (a) (i)	suitable linear scale chosen (>50% of grid used); axes labelled with quantities and units; plotting correct to nearest half square;;	orientation needs to be correct -1 for each mistake to a maximum of -2	4
(ii)	line (curve) of best fit acceptable;  Time in years: 0, 50, 100, 150, 200, 250 Activity in Bq: 980, 660, 450, 305, 205, 140	allow ECF from plotting i.e. smooth curve with points evenly distributed about it	1
(iii)	appropriate working shown on graph or numerically; 90 years;	allow ECF from graph answer within range of 85-95 (years) gets 2 marks	2
(b) (i)	(0.56 X 2.7 =) 1.5 (W);	allow 1.51, 1.512	1
(ii)	idea that alpha has short range / low penetrating power; and 1 of; • alpha absorbed by the case • alpha does not reach the skin	ignore 'alpha is weak' ignore 'alpha can't penetrate paper' allow 'cannot penetrate the case' allow 'cannot penetrate the skin'	2
(c)	longer half-life means plutonium decays more slowly; idea that it generates electricity / power for longer;	accept RA allow idea that **energy** does not 'run out'	2

Total for question 6 = 12 marks