

| Question number | Answer | Notes | Marks |
|-----------------|---|---|-------|
| 10 (a) | $236 - (97 + 135);$ $x = 4;$ | answer of 4 scores 2 | 2 |
| (b) | (fission) releases neutrons; neutrons can be captured by other uranium nuclei; (these nuclei) then undergo fission; | | 3 |
| (c) | evidence of halving of 72 (kBq); evidence of four half-lives required; e.g. count rate after 4 half-lives is 4.5 (kBq) evidence that four half-lives is equivalent to 60 million years; | | 3 |
| (d) | Any FIVE from: MP1 Idea of strong containers; MP2 idea that containers can't rust; MP3 idea that rust-proof containers expensive/difficult to manufacture; MP4 reference to security of waste site; MP5 reference to dilution in sea water; MP6 reference to leakage into water table; | accept idea of a location that prevents rust accept low earthquake risk | 5 |

(Total for Question 10 = 13 marks)