

- 39 The decay of a nucleus of neptunium is accompanied by the emission of a  $\beta$ -particle and  $\gamma$ -radiation.

What effect (if any) does this decay have on the proton number and the nucleon number of the nucleus?

|   | proton number | nucleon number |
|---|---------------|----------------|
| A | increases     | decreases      |
| B | decreases     | increases      |
| C | unchanged     | decreases      |
| D | increases     | unchanged      |

- 40 Rader 220 is radioactive and decays to Ralonium 216 with the emission of an  $\alpha$ -particle. The