

**39** When a nucleus emits an  $\alpha$ -particle, how do the proton number and the nucleon number of the original nucleus change?

	proton number	nucleon number
<b>A</b>	-4	-2
<b>B</b>	-2	-2
<b>C</b>	-2	-4
<b>D</b>	+1	no change

**40** A simple theory of  $\alpha$ -particle scattering by a thin metal foil uses the four assumptions given