

- 38** In a television programme to illustrate scientific models, a presenter fires a gun many times at a bale of hay. Two small cannon balls are embedded within the hay some distance apart from each other.

The hay bale measures approximately  $2\text{ m} \times 2\text{ m} \times 2\text{ m}$  and the cannon balls are made of iron, approximately spherical, and about 5 cm in diameter.

What might the presenter be illustrating?

- A**  $\alpha$ -particle scattering
- B**  $\beta^-$  decay
- C** conservation of momentum
- D** double-slit interference

- 39** A certain nuclide, uranium 235, has nucleon number 235, proton number 92 and neutron number