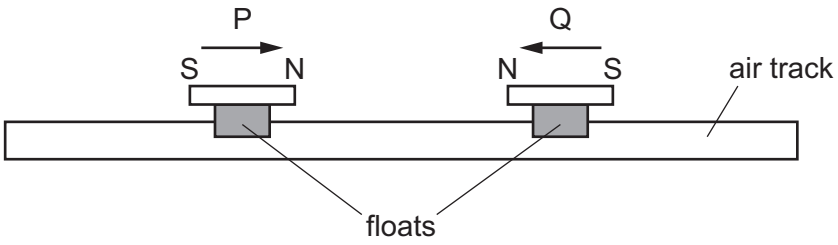
11 Two bar magnets P and Q are mounted on floats which can slide without friction along an air track.



The two magnets slide towards each other along the air track and interact, without making contact.

The relative speed of approach of the magnets is equal to their relative speed of separation.

Which statement about P and Q must be correct?

A During the interaction between P and Q some of the total kinetic energy is lost.

B During the interaction between P and Q some of the total momentum is lost.

C The momentum of Q after the interaction is equal to the momentum of P before the interaction.

D The values of (kinetic energy of P + kinetic energy of Q) before and after the interaction are equal.

12 A submarine descends vertically at constant velocity. The three forces acting on the submarine are viscous drag, upthrust and weight.

Which relationship between their magnitudes is correct?

A weight < drag

B weight = drag

C weight < upthrust

D weight > upthrust