2(a) Student A claims, “When a ball hits and rebounds off a wall, there is impulse on the ball, but not on the wall because the wall does not move.”

Discuss whether Student A is correct. [2]

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(b) A ball B of mass 1.2 kg travelling at constant velocity collides head-on with a stationary ball S of mass 3.6 kg, as shown in Fig. 2.1.

Fig. 2.1

Frictional forces are negligible. The variation with time *t* of the velocity *v* of ball B before, during and after colliding with ball S is shown in Fig. 2.2.

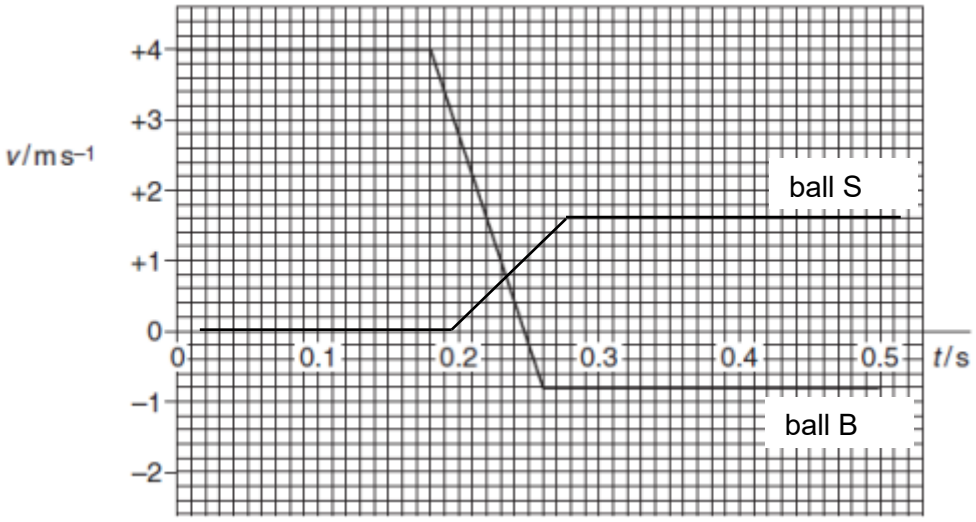

Fig. 2.2

(i) Using Fig. 2.2, explain whether momentum is conserved in this collision. [3]

(ii) Determine quantitatively whether the collision is elastic or inelastic. [2]