

- 1** The apparatus shown in Fig. 5.1 is used to demonstrate how a coin and a piece of paper fall when they are released from rest.

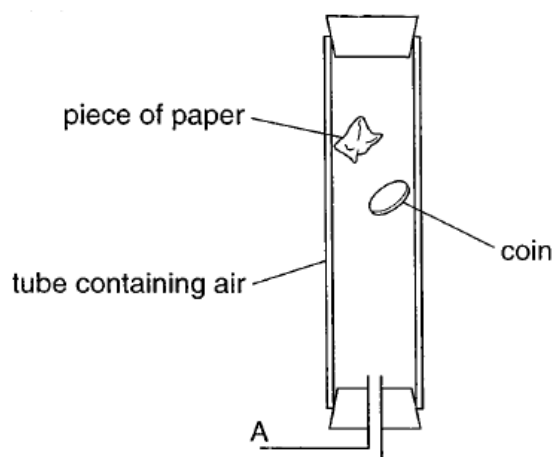


Fig. 5.1

- (a) At the positions shown in Fig. 5.1, the paper is descending at constant speed but the coin still accelerates.

In terms of the forces acting, explain these observations.

paper .

Drag or the air resistance or the friction (upwards) balance the downward weight of the paper.

Therefore

drag / air resistance / friction = weight / force of gravity

There is no resultant force AND so no acceleration.

coin

weight or the force of gravity is bigger than air resistance . So the coin accelerates

- (b) A vacuum pump is now connected at A and the air in the tube is pumped out.

The paper and coin are again made to fall from rest.

State one difference that would be observed, compared with what was observed when air was present.

Paper and coin both fall at the same speed. They both hit the bottom at the same time together