8 A thin plastic bag is found to have a mass *m* when empty and pressed flat. When the bag is filled with air at atmospheric pressure and re-weighed on a weighing scale, the mass is again found to be *m*.

What is the correct reason?

A The gravitational field strength is constant at 9.81 N kg^{-1}.

B The density of air inside and outside the bag is the same.

C The upthrust experienced by the flat and the inflated plastic bag is the same.

D The weight of the bag when flat and when inflated is the same.