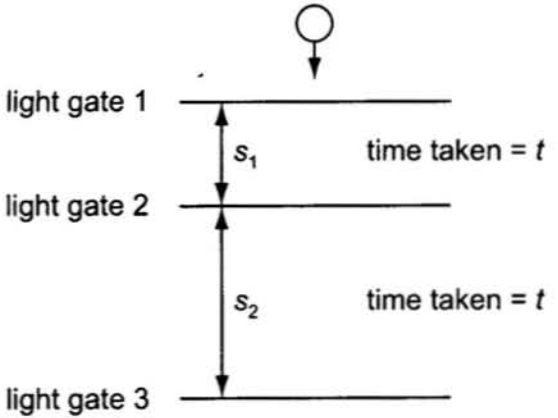
5 An object falls freely with constant acceleration a from above three light gates. It is found that it takes a time t to fall between the first two light gates a distance of s_1 apart. It then takes an additional time, also t, to fall between the second and third light gates a distance s_2 apart.



What is the acceleration in terms of s_1, s_2 and t?

A $\frac{(s_2 - s_1)}{t^2}$ **B** $\frac{(s_2 - s_1)}{2t^2}$ **C** $\frac{2(s_2 - s_1)}{3t^2}$ **D** $\frac{2(s_2 - s_1)}{t^2}$