

A particle P of mass 0.7 kg is attached to a fixed point O by a light elastic string of natural length 0.6 m and modulus of elasticity 15 N . The particle P is projected vertically downwards from the point A , 0.8 m vertically below O . The initial speed of P is 2 m s^{-1} .

(i) Find the distance below A of the point at which P comes to instantaneous rest. [4]

(ii) Find the greatest speed of P in the motion. [4]