A particle P of mass 0.15 kg is attached to one end of a light elastic string of natural length 0.4 m and modulus of elasticity 12 N. The other end of the string is attached to a fixed point A. The particle P moves in a horizontal circle which has its centre vertically below A, with the string inclined at $\theta°$ to the vertical and $AP = 0.5$ m.

(i) Find the angular speed of P and the value of θ. [5]

(ii) Calculate the difference between the elastic potential energy stored in the string and the kinetic energy of P. [4]