4. A light elastic string has natural length 5 m and modulus of elasticity 20 N.

The ends of the string are attached to two fixed points A and B, which are 6 m apart on a horizontal ceiling.

A particle P is attached to the midpoint of the string and hangs in equilibrium at a point which is 4 m below AB.

(a) Calculate the weight of P.

(6)

The particle is now raised to the midpoint of AB and released from rest.

(b) Calculate the speed of P when it has fallen 4 m.

(5)

(Total for Question 4 is 11 marks)