

- 2 (a) State what is meant by the *centre of gravity* of a body.

.....

 [2]

- (b) A uniform wooden post AB of weight 45 N stands in equilibrium on hard ground, as shown in Fig. 2.1.

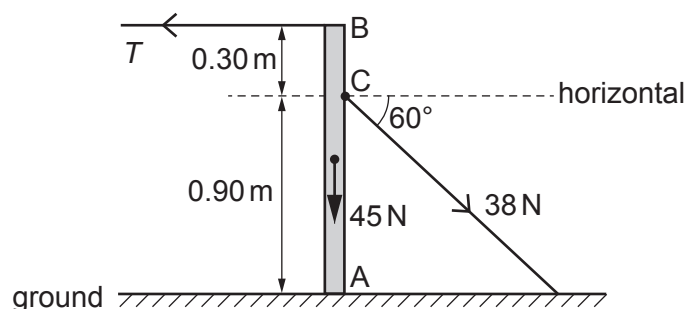


Fig. 2.1 (not to scale)

End A of the vertical post is supported by the ground. A horizontal wire with tension T is attached to end B of the post. Another wire, attached to the post at point C, is at an angle of 60° to the horizontal and has tension 38 N. The distances along the post of points A, B and C are shown in Fig. 2.1.

- (i) Calculate the horizontal component of the force exerted on the post by the wire connected to point C.

horizontal component of force = N [1]

- (ii) By considering moments about end A, determine the tension T .

$T =$ N [2]

- (iii) Calculate the vertical component of the force exerted on the post at end A.

force = N [1]

[Total: 6]