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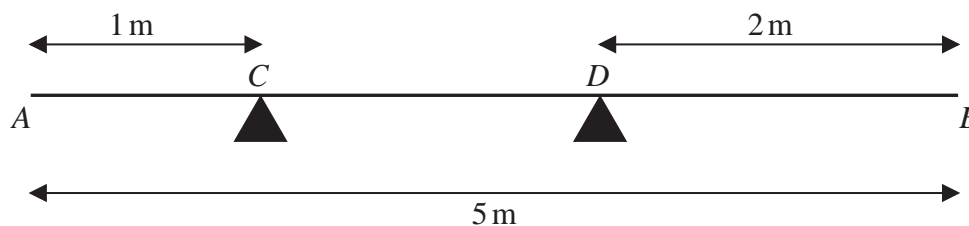


Figure 2

A uniform rod AB has length 5 m and mass 5 kg. The rod rests in equilibrium in a horizontal position on two supports C and D , where $AC = 1$ m and $DB = 2$ m, as shown in Figure 2.

A particle of mass 10 kg is placed on the rod at A and a particle of mass $M\text{ kg}$ is placed on the rod at B . The rod remains horizontal and in equilibrium.

- (a) Find, in terms of M , the magnitude of the reaction on the rod at C . (3)
- (b) Find, in terms of M , the magnitude of the reaction on the rod at D . (3)
- (c) Hence, or otherwise, find the range of possible values of M . (3)

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Q5

(Total 9 marks)

