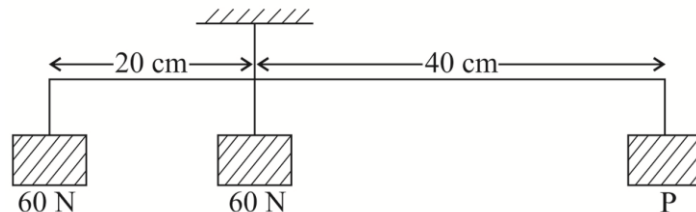



Turning effect of a forces

❖ Answer all the questions.

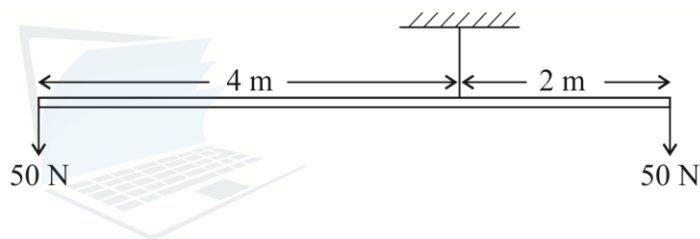
01. What is the force P that should be applied to keep the object in equilibrium?

- (1). 20 N
- (2). 30 N
- (3). 60 N
- (4). 120 N



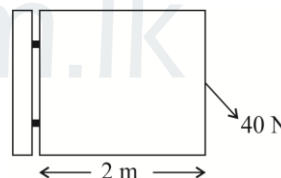
02. The resultant moment acting on the rod is

- (1). 100 Nm clockwise
- (2). 100 Nm anticlockwise
- (3). 200 Nm anticlockwise
- (4). 200 Nm clockwise

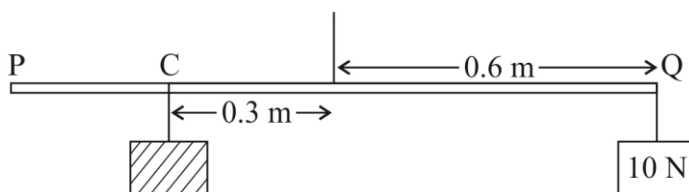


03. The figure shows a gate with weight of 250 N. What is the moment of it of 40 N force is exerted on it by pushing?

- (1). 500 Nm
- (2). 80 Nm
- (3). 290 Nm
- (4). 580 Nm



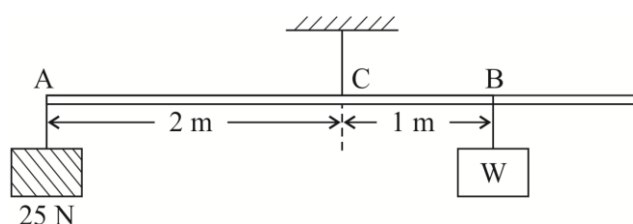
04. As shown in the diagram a uniform light rod PQ was balanced after being suspended from the centre. What weight suspended from the point C to balance the rod?



- (1). 10 N
- (2). 20 N
- (3). 30 N
- (4). 40 N

05. A light rod suspended at the point C stays in equilibrium. What is the value of W?

- (1). 25 N
- (2). 75 N
- (3). 50 N
- (4). 100 N

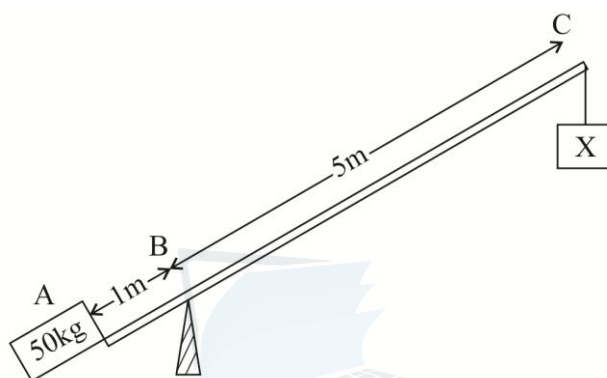


Semi structured essay

01. (A). An object can pull, push, lift or rotate by applying a force.

- (i). What is the moment of force?
- (ii). Given the equation for the moment.
- (iii). Write down the factors that affect for the moment of force.
- (iv). Write a simple activity to investigate of the dependence of the moment in one of the above factor.

(B). A barrier at the army campo is given in the figure. (Assume that the weight of the rod is neglected)

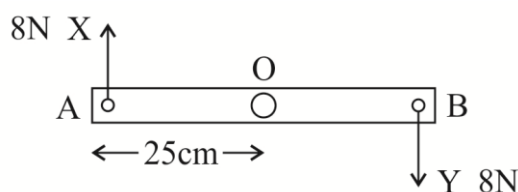


- (i). What is the advantage of fixing B point more close to A than C?
- (ii). What will be the value of load that helps to keep the rod in equilibrium?
- (iii). Write down a change that can be done to keep the rod equilibrium by reducing the weight of X.

(C). It is possible to rotate an object that is pivoted at a fix point in between two forces acting in opposite direction.

- (i). What are a couple forces?
- (ii). Write down the equation for a couple of force.
- (iii). Give 2 instances that the above force use in day today life.

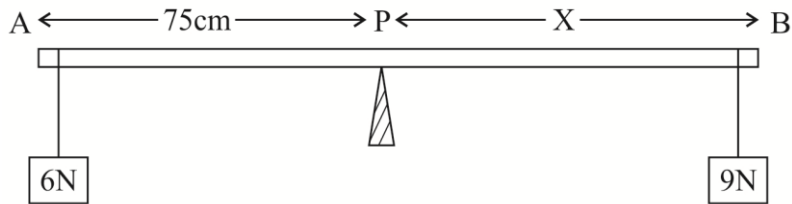
02. (A). The wooden strip AB is pivoted to the wall from point. 'O'



- (i). What is the name used for above setup?
- (ii). To which direction does this setup rotate due to the X and Y forces?

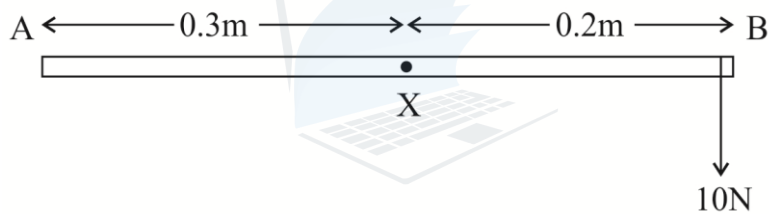
- (iii). Name another 2 instances where this type of system of force can be seen.
- (iv). The two forces of 8N are applied at two ends of 50cm aluminum strip which is pivoted at 'O' point. What is the moment of the couple of forces?

(B). A uniform beam AB kept in equilibrium on a knife edge at the point P.



- (i). If a weight of 6N is hung from A. Find the initial moment.
- (ii). Calculate the distance X.
- (iii). If the weight of the rod is 2N, calculate the total weight acts on the point B.

(C). An uniform rod AB is clamped at the point X as shown in the following figure.



- (i). a). What is the magnitude of the force that should be exert on the point A?
b). In which direction that force should be exerted?
- (ii). What is the moment of the couple of forces acting on the rod?