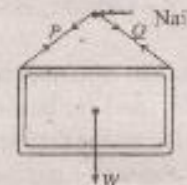


2008

30. A photograph of weight W is hung on a wall with the help of a nail as shown in the figure. The tensions of the string are P and Q .

- A - Forces P , Q and W act on the same plane.
 B - The sum of the two forces P and Q is equal to the force W .
 C - The resultant of the two forces P and Q acting on the photograph, acts against to the force W .



2011

36. Which of the following can be explained by the equilibrium among three forces?

- (1) Equilibrium of an object suspended in a spring balance.
- (2) Equilibrium of an object floating in water
- (3) Equilibrium of an ordinary pan balance used with weights
- (4) Equilibrium of a book kept on a table.

2012

34. Consider the following statements about forces.

- A - Forces always act individually
 B - If three forces happen to come to equilibrium, they should operate on the same plane.
 C - There can be a uniform velocity for an object when the resultant force is zero.

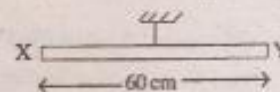
Which of the above are true?

- (1) A and B only (2) A and C only (3) B and C only (4) A, B, and C

2013

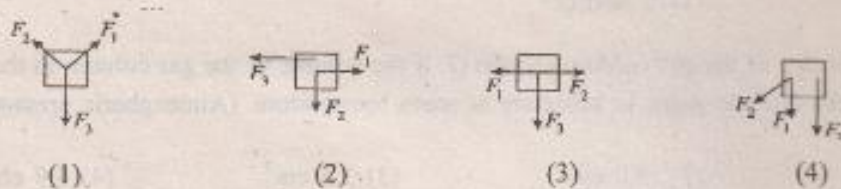
28. A uniform beam XY of 60 cm in length is kept in equilibrium by suspending it from the mid point as shown in the diagram below. When a weight of 5 N is hung from the end X, at what distance from the mid point should a weight of 6N be hung to bring the beam back to the equilibrium position?

- (1) 5 cm (2) 10 cm
- (3) 20 cm (4) 25 cm



2014

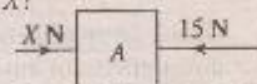
32. An object is in equilibrium under three coplanar forces of F_1 , F_2 and F_3 . If $F_1 = F_2$, which of the following diagrams correctly represents the three forces?



2016

37. Consider the object A which is kept on a smooth horizontal surface as shown in the figure. Two horizontal forces of 15 N and X N are acting on A as shown in the figure. If the object is moving in the direction of the force X with a resultant force of 10 N, what is the value of X ?

- (1) 15 (2) 25
(3) 35 (4) 45



2017

33. On a table, a box is in equilibrium under three coplanar forces of 10, 15 and P Newtons. The resultant of the two forces 10 N and 15 N is 12 N. Consider the statements \otimes , \oslash and \odot regarding the force P .

\otimes - Magnitude of P is 12 N.
 \oslash - P acts in the direction of the resultant force of the two forces 10 N and 15 N.
 \odot - The line of action of P goes through the intersecting point of the lines of actions of the two forces 10 N and 15 N.

Of the above statements,

- (1) only \otimes and \oslash are true. (2) only \oslash and \odot are true.
 (3) only \otimes and \odot are true. (4) all \otimes , \oslash and \odot are true.