



Loreto Convent Intermediate College

Lucknow

Holiday Homework Class- X Subject- Physics

Solve the following numericals in your fair register.

1. A 100 cm metre rule is pivoted at its mid point. If the weight of 10 gf is suspended from the 30 cm mark and a weight of 20 gf is suspended from its 60 cm mark, find out whether the metre rule is in equilibrium or not.
2. A 500 cm metre rule is pivoted at its middle point. If weight of 2 gf is suspended from the 20 cm point, Calculate the amount of weight required to be applied at the 80 cm mark to keep it in a balanced position.
3. Calculate the force which will produce a moment of force of 1575 dyne cm, when the perpendicular distance between the point of application of force and pivot is 45 cm.
4. Two forces each of magnitude 2 N act vertically upward and downward respectively on two ends of a uniform rod of length 1 m, freely pivoted at its centre. Determine the resultant moment of forces about the mid-point of the rod.
5. A uniform metre scale is balanced at 60 cm mark, when weights of 5 gf and 40 gf are suspended at 10 cm mark and 80 cm mark respectively. Calculate the weight of the metre scale.
6. A uniform metre scale is balanced at 20 cm mark, when a weight of 100 gf is suspended from one end. Calculate the weight of the metre scale.
7. A uniform metre scale balances horizontally on a knife edge placed at the 55 cm mark, when a mass of 25 g is suspended from one end. Draw the diagram of the arrangement. Calculate mass of the scale.
8. A uniform half metre rule balances horizontally on a knife edge at 29 cm mark when a weight of 20 gf is suspended from one end. (i) Draw a diagram of the arrangement. (ii) What is the weight of the half metre rule?
9. A half metre rod is pivoted at the centre with two weights of 20 gf and 12 gf suspended at a perpendicular distance of 6 cm and 10 cm from the pivot respectively. (i) Which of the two forces acting on the rod causes the clockwise moment? (ii) Is the rod in equilibrium? (iii) The direction of the 20 gf force is reversed. What is the magnitude of the resultant moment of forces on the rod?
10. On a see-saw, two men of masses 25 kg and 45 kg are sitting on one side of it at distances 2 m and 3 m respectively from its midpoint. Where should a man of mass 74 kg sit to balance it?



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