

Physics MCQs for Competitive Exams Part 6

Question:

A 1000 kg lift is supported by a cable that can support 2000kg. The shortest distance in which the lift can be supported when it is descending with a speed of $2.5 \frac{m}{s}$ is $(g = 10 \frac{m}{s^2})$

1. $\frac{5}{16} m$
2. $\frac{5}{32} m$
3. $1 m$
4. $2 m$

Question:

A body is projected up a rough incline. The coefficient of friction is 0.5. Then the retardation of the block is

1. $\frac{g}{22}$
2. $\frac{g}{2}$
3. $\frac{3g}{11}$
4. $\frac{g}{4}$

Question:

A body takes n times as much time to slide down a rough incline as it takes to slide down a smooth inclined. The coefficient of friction is

1. $1 - \frac{1}{n^2}$
2. $\frac{1}{1 - n^2}$
3. $1 + \frac{1}{n^2}$

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4. $\frac{1}{1+n^2}$

Question:

A ball of mass m is thrown upward with a velocity v . If air exerts an average resisting force F , the velocity with which the ball returns back to the thrower is

1. $vmgmg + F$
2. $vFmg + F$
3. $vmg - Fmg + F$
4. $vmg + Fmg - F$

Question:

A ball of mass 0.1kg strikes a wall normally with a speed of $30\frac{m}{s}$ and rebounds with a speed of $20\frac{m}{s}$. The impulse of the force exerted by the wall on the ball is

1. $1\text{ N} - S$
2. $5\text{ N} - S$
3. $2\text{ N} - S$
4. $3\text{ N} - S$

Question:

A body kept on a smooth inclined plane having inclination 1 in x will remain stationary relative to the inclined plane if the plane is given a horizontal acceleration equal to

1. $\frac{9}{x^2 - 1}$
2. $\frac{gx}{x^2 - 1}$
3. $\frac{x^2 - 1}{gx}$
4. $\frac{x^3 - 1}{gx}$

Question:

The minimum acceleration with which a fireman can slide down a rope of breaking strength two-third of his weight is

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1. 0

2. $\frac{g}{3}$

3. $3g$

4. g

Question:

An elevator is moving vertically up with an acceleration 'a'. The force exerted on the floor by a passenger of mass m is

1. Mg

2. Ma

3. $Mg - Ma$

4. $Mg + Ma$