



RED

Group of Institutions

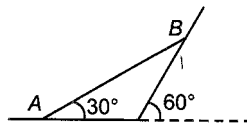
CHHUCHHAKWAS, JHAJJAR

www.redschoolchk.in

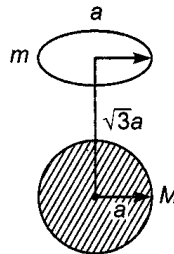
Sample Paper of Scholarship cum Admission Test for Class-XII (Non-Medical)

PART-1 (PHYSICS)

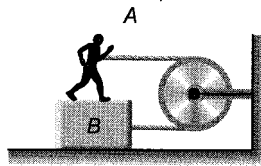
1. In the figure shown, the instantaneous speed of end A of the rod is v to the left. The angular velocity of the rod of length L , must be



- (a) $v/2L$ (b) v/L (c) $\frac{\sqrt{3}v}{2L}$ (d) $\frac{2v}{L}$
2. A uniform ring of mass m is lying at a distance $\sqrt{3}a$ from the centre of a sphere of mass M just over the sphere (where a is the radius of the ring as well as that of the sphere). Then magnitude of gravitational force between them is

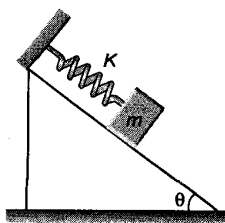


- (a) $\frac{GMm}{8a^2}$ (b) $\frac{GMm}{\sqrt{3}a^2}$ (c) $\sqrt{3} \frac{GMm}{a^2}$ (d) $\sqrt{3} \frac{GMm}{8a^2}$
3. As shown in the figure, A is a man of mass 60 kg standing on a block of mass 40 kg kept on ground. The coefficient of friction between the feet of the man and the block is 0.3 and that between B and the ground is 0.2. If the person pulls the string with 125 N force, then

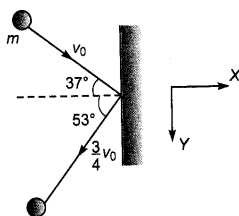


- (a) B will slide on ground
(b) A and B will move with acceleration 0.5 ms^{-2}
(c) the force of friction acting between A and B will be 40 N
(d) the force of friction acting between A and B will be 180 N.

4. A system of wedge and block as shown in figure, is released with the spring in its natural length. All surfaces are frictionless. Maximum elongation in the spring will be



- (a) $\frac{2mg \sin \theta}{K}$ (b) $\frac{mg \sin \theta}{K}$ (c) $\frac{4mg \sin \theta}{K}$ (d) $\frac{mg \sin \theta}{2K}$
5. A ball of mass m moving with velocity v_0 collides a wall as shown in figure. After impact it rebounds with a velocity $\frac{3}{4}v_0$. The impulse acting on ball during impact is



- (a) $-\frac{m}{2}v_0\hat{j}$ (b) $-\frac{3}{4}mv_0\hat{i}$ (c) $-\frac{5}{4}mv_0\hat{i}$ (d) None of these

PART-2 (CHEMISTRY)

1. $\text{NH}_4\text{COONH}_2(\text{s}) \rightleftharpoons 2 \text{NH}_3(\text{g}) + \text{CO}_2(\text{g})$. If equilibrium pressure is 3 atm for the above reaction, K_p for the reaction is
- (a) 4 (b) 27 (c) $\frac{4}{27}$ (d) $\frac{1}{27}$
2. Chile saltpetre is:
- a) NaNO_2 b) KNO_2
 c) NaNO_3 d) KNO_3
3. M g of a substance when vaporised occupy a volume of 5.6 litre at NTP. The molecular mass of the substance will be:
- a) M b) $2M$
 c) $3M$ d) $4M$

