Date: 22/08/2022

Subject: Physics | Class: Standard XII

Topic : Friction | Time: 00:20 hrs

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1. A block of mass $10\ \text{kg}$ is placed on rough horizontal surface whose coefficient of friction is 0.5. If a horizontal force of $100\ \text{N}$ is applied on it along the surface , then acceleration of block will be [Take $g = 10\ \text{ms}^{-2}$]

   A. $10\ \text{ms}^{-2}$

   B. $5\ \text{ms}^{-2}$

   C. $15\ \text{ms}^{-2}$

   D. $0.5\ \text{ms}^{-2}$

2. A block of mass $2\ \text{kg}$ is placed on the floor. The coefficient of static friction is 0.4. If a force of $2.8\ \text{N}$ is applied on the block parallel to the floor, the force of friction between the block and floor is (take $g = 10\ \text{ms}^{-2}$)

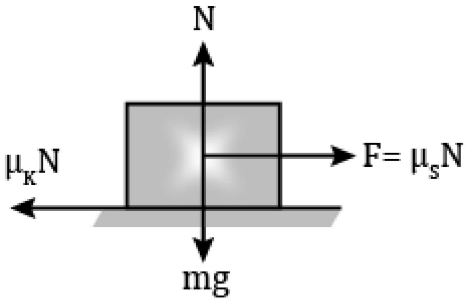
   A. $2.8\ \text{N}$

   B. $8\ \text{N}$

   C. $2\ \text{N}$

   D. zero

3. For a body on a horizontal surface, coefficients of static and kinetic frictions are 0.4 and 0.2, respectively. When the body is in uniform motion on the surface, a horizontal force equal in magnitude to limiting friction is applied on it. The acceleration produced is



A. 0.4 g

B. 0.1 g

C. 0.2 g

D. 0.6 g

4. While walking on ice, one should take small steps to avoid slipping. This is because smaller steps ensure

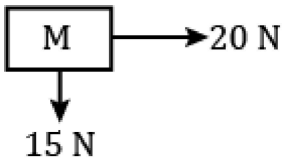
A. larger coefficient of friction

B. smaller coefficient of friction

C. larger normal force

D. smaller Normal force

5. An object of mass M is kept on a rough table as seen from above. Forces are applied as shown. Find the direction (from the vertical) of static friction if the object does not move.



A. 30°

B. 37°

C. 45°

D. 53°