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Date: 9-07-2021

Class: 8th Genesis

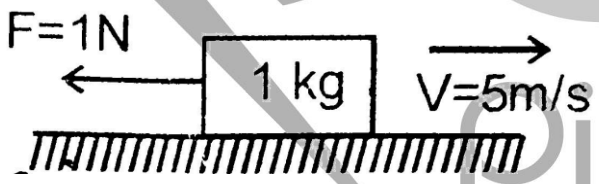
Subject: Science

Test code: SECT01(21011308)

Physics

M. Marks: 20

1. A pressure of 50 N/m^2 acts on an area of 5 m^2. Calculate the total force. (1 marks)
2. When does static friction come into play? (1 marks)
3. Why does friction increase if the two surfaces are pressed? (1 marks)
4. Which force is responsible for wear and tear of machinery? (1 marks)
5. Define pressure. What are the units of pressure in this list: $N/ms^2, N, N/m^2, cm^2, m^2$ (2 marks)
6. A heavy box of mass 20 kg is placed on a horizontal surface. If coefficient of kinetic friction between the box and the horizontal surface is 0.35, calculate the force of kinetic friction. Also calculate acceleration produced under a force of 100 N applied horizontally? Take g = 10 m/s^2. (2 marks)
7. Give examples to show that friction is both a friend and a foe. (2 marks)
8. Explain why sliding friction is less than static friction. (2 marks)
9. Why is it easy to drag a mat from the floor, but it is difficult to drag the mat when somebody is sitting on it? (2 marks)
10. Find the direction of kinetic friction force. (3 marks)



(a) On the block, exerted by the ground.
(b) On the ground, exerted by the block.
(c) Are the both forces. In a & b equal. Explain your answer.

11. A block of mass 5 kg is resting on a rough surface as shown in the figure. it is acted upon by a force of F towards right. Find frictional force acting on block when (a) F = 5N (b) 25 N (c) 50 N $(\mu_s = 0.6, \mu_k = 0.5)$ [g = 10 ms^{-2}]. (3 marks)