KALPAVRUKSHA MODEL SCHOOL

Answers Online Class Assignments-7

Class: VIII **Sub: Physics** **Date: 21.08.2021**

Topic: FORCE AND FRICTION

I. Answers:

1. What are the factors affecting friction? Explain with examples.

ANS: a) The nature of the two surfaces (smoothness and roughness of the two surfaces)
b) The force with which two surfaces are pressed together.

a. **Nature of the surfaces in contact like hard or smooth.** To understand this properly, you can perform one activity -Make an inclined plane using cardboard supported with bricks. Mark a point A on any part of that cardboard. Let a pencil cell move down through this point. Now, spread a piece of cloth on the cardboard and repeat the same activity. After this you will observe that the pencil cell covers a larger distance when moved on a cardboard as compared to a piece of cloth.

b. **How hard the two surfaces are compressed together.** For example: If we are pushing a massive box which is at rest. There will be no doubt more interlocking of the molecular substances between two surfaces and hence, we would apply more force to overcome static friction in order to move that box. Now, if we try to move a light box, there will be less interlocking of the molecules between two surfaces and henceforth, we would apply less force to overcome static friction to move that box.

2. A car is moving towards the North. What will be the direction of force of friction acting on this car due to the surface of the road?

ANS: A car is moving towards the North. South is the direction of force of friction acting on this car due to the surface of the road.

3. **Write an activity to show that friction depends on the surface of the area in contact**.

ANS: Take a sheet of paper, a handkerchief, a hand towel, a rectangular piece of glass and wood as surfaces and a pencil, now roll the pencil or dry cell on each surface. 3 Number the surfaces in the order in which the pencil rolled easily on them. Measure the distance travelled by the pencil or dry cell Also, mention whether the surface is rough or smooth.

4. **Write an activity to show that friction depends on the mass of the object.**

ANS: Suppose, a person is pushing a heavy box, then he is applying force now if the same person pushes two boxes of the same mass as the previous case. Then, in this case he will have to apply more force to overcome the larger friction as in the earlier case. This is because friction depends on the mass of the object. Heavier the mass, the more the force is exerted by the object on the surface in contact and thus more friction is produced.

II.CHOOSE THE CORRECT ANSWERS:

1. Which of the following will produce the maximum friction?

a. rubbing of sand paper on glazed paper
b. rubbing of sandpaper on glass table top
c. rubbing of sandpaper on aluminum frame
d. rubbing of sandpaper on sandpaper

ANS: **d. rubbing of sandpaper on sandpaper**

2. A boy runs his toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The forces of friction acting on the car on different surfaces in increasing order will be_____-.

a**.** wet marble floor, dry marble floor,newspaper,towel
b. newspaper, towel, dry marble floor ,wet marble floor
c. towel, newspaper ,marble floor ,wet marble floor
d. wet marble floor, dry marble floor, towel, newspaper

ANS: a. wet marble floor, dry marble floor, newspaper, towel

3. The friction between two surfaces does not depend on one of the following. This one is_____.

a. amount of surface area of the two objects which is in contact with each other.
b. weight of the object which tends to move on the surface of other object
c. degree of smoothness of surface of two objects in contact with each other
d. degree of roughness of surface of two objects in contact with each other

ANS: a. amount of surface area of the two objects which is in contact with each other.

4. A spring balance can be used to measure _____

a. mass of the object
b. force acting on an object
c. weight of an object
d. b and c

ANS: d. b and c