

Chapter-11: Force and Pressure

HOTS Questions:

1. Assuming that air resistance is also not present, this statement is true. In the absence of any opposing force the body will continue moving with uniform speed in a straight line.
2. False, because muscular force is applied on the object through the stick which in turn is in contact with the body. Thus, it is a contact force.
3. The gravitational force is so small that it cannot be felt unless one of the bodies is huge – like the earth. The gravitational force between an object and building is too small to be felt.
4. To have a clear picture about the capability of a given force to produce a certain effect, we must not only know the force but also the area over which it acts. Thus, a new physical quantity known as pressure is introduced to find the effect of a force.
5. If the window of a jet plane flying at a high altitude breaks, it will have three effects.
 - i. We will not be able to get enough oxygen from air for breathing, because of the low density of air at that height.
 - ii. We will experience problems like nose bleeding as the air pressure will be much lower than our blood pressure.
 - iii. The temperature at that height will be much below freezing which the body will not be able to tolerate.
6. When a rubber sucker is pressed against a rough surface there will be many gaps between the rubber sucker and the surface, through which air can get in. Since a vacuum will not develop inside the sucker, it will not stick to the rough surface.

Be a Scientist:

Because the gravity on the moon is much less than (one-sixth) that on the earth, the weight of an object on the moon is only one-sixth of that on the earth. That is why she is able to lift the same weight so easily on the moon.