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Solution 74

The coin reaches the ground first as compared to the piece of paper because it experiences lesser resistance from air than that felt by paper.

If the coin and the piece of paper are dropped in vacuum, both of them will touch the ground at the same time.

Solution 75

The mass of a stone is very small, due to which the gravitational force produces a large acceleration in it. Due to large acceleration of stone, we see stone falling towards the earth. The mass of earth is, however, very, very large. Due to the very large mass of the earth, the same gravitational force produces very, very small acceleration in the earth, that it cannot be observed. And hence we do not see the earth rising up towards the stone.

Solution 76

The actual shape of the orbit of a planet around the sun is elliptical. The assumption made by the Newton regarding the shape of an orbit of a planet around the sun was that the orbit of a planet around the sun is 'circular'.

Solution 77

(a) 9.23 m/s^2 , 7.34 m/s^2 , 3.08 m/s^2 , 1.49 m/s^2 , 0.57 m/s^2 , 0.30 m/s^2

(b) This distance F of 10000 km is high up in the sky. The distance of 10000 km cannot be deep inside the earth because the radius of earth is only about 6400km and the value of g at the centre of earth becomes zero.

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