

Science

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(Chapter – 10) (Gravitation)

(Class – IX)

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Question 1:

You find your mass to be 42 kg on a weighing machine. Is your mass more or less than 42 kg?

Answer 1:

When you weigh your body, an upward force acts on it. This upward force is the buoyant force. As a result, the body gets pushed slightly upwards, causing the weighing machine to show a reading less than the actual value.

Question 2:

You have a bag of cotton and an iron bar, each indicating a mass of 100 kg when measured on a weighing machine. In reality, one is heavier than other. Can you say which one is heavier and why?

Answer 2:

The bag of cotton is heavier than iron bar. This is because the surface area of the cotton bag is larger than the iron bar. Hence, more buoyant force acts on the bag than that on an iron bar. This makes the cotton bag lighter than its actual value. For this reason, the iron bar and the bag of cotton show the same mass on the weighing machine, but actually the mass of the cotton bag is more than that of the iron bar.

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