



PHYSICS CH: 10 GRAVITATION

Name: _____

Date: _____

Class: IX Sec: ____

I FILL IN THE BLANKS

1. Is the force of attraction between any two bodies in the universe.
2. Acceleration due to gravity With height from the surface of the earth.
3. Acceleration due to gravity is a maximum at the
4. Of a body changes from place to place but it's Remains constant.
5. The upward force experienced by a body immersed partially or fully in a fluid is called
6. Density of a substance is defined as the ratio of the mass of a body to it's.....

II SHORT ANSWER TYPE

1. Why do sewing needles and pins have a sharp pointed tip?
2. Differentiate between mass and weight of a body.
3. In what direction does the buoyant force on an object immersed in a liquid act?
4. Why is it difficult to hold a bag having a strap made of a thin and strong string?
5. What do you mean by buoyancy?
6. Differentiate between thrust and pressure

III NUMERICALS

1. The density of water is 1000 kg/m^3 . If density of gold is 19320 kg/m^3 , find the relative density of the gold.
2. The density of water is 1000 kg/m^3 . If relative density of iron is 7.874, then calculate the density of iron.
3. Calculate the force of gravitation between the earth and the sun.
Mass of Earth = $6 \times 10^{24} \text{ kg}$, Mass of Sun = $2 \times 10^{30} \text{ kg}$. The average distance between the two is $1.5 \times 10^{11} \text{ m}$.



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4. A particle is thrown up vertically with a velocity of 50 m/s.
 - (a) What will be its velocity at the highest point of its journey?
 - (b) How high would the particle rise?
 - (c) What time would it take to reach the highest point?
5. A ball is dropped from the top of a tower 40 m high. What is its velocity when it has covered 20 m? What would be its velocity when it hits the ground? Take $g = 10 \text{ m/s}^2$.
6. What is the weight of a person whose mass is 50 kg.
7. The gravitational force between two objects is F . How will this force change when?
 - (i) Distance between them is reduced to half?
 - (ii) The mass of each object is quadrupled?
8. A force of 15 N is uniformly distributed over an area of 150 m^2 . Find the pressure in Pascal
9. How much force should be applied on an area of 1 cm^2 to get a pressure of 15 Pa?
10. Mass of a rectangular bar of an iron piece is 320g. Its dimensions are $2 \times 2 \times 10 \text{ cm}^3$. What is its relative density? Will the bar float or sink in water?