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. An object dropped from a height falls towards the earth; all planets go round the sun. Give reason.

2. A mug full of water appears light as long as it is under water in the bucket than when it is outside water. Why?

3. If gravitational force exists between every two objects in the universe, why don't you and your friend sitting together experience it?

4. Does velocity of a body during free fall remain constant? Why?

5. Explain why, a piece of glass sinks in water whereas floats in mercury.

6. Steel sinks in the water but a steel ship floats. Why?

7. If you jump on the moon, you will rise much higher than if you jump on the earth .Give reason

8. a) A metallic bar has a mass 200 g at poles. Does it change when takes to equator?
   b) Does its weight change when brought to equator? If yes, how?
   c) Where on earth will the weight be zero?
   d) What would happen if there was no acceleration due to gravity?

9. Why the depression is much more when a man stands on the cushion than when he lies down?

10. An object weighs 200 N floats on liquid. What is the magnitude of buoyant force acting on it?

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. If the distance between two masses be increased by a factor of 5, by what factor would the mass of one of them hence to be altered to maintain the same gravitational force?

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 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 increased 6 times that of the original one?

(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 2x2x10 cm^3.What is its relative density? Will the bar float or sink in water?

11. A stone is dropped from the edge of a roof.

a) How long does it moves at the end of that fall?

b) How fast does it move at the end of that fall?

c) What will be its acceleration after 1s and after 2s?

12. What would be the apparent weight of an iron block of size 5cmx 5cm x 5cm ,when it is completely immersed in water?