

Assignment for Class IX Chapter - GRAVITATION

1. State Newton's law of motion. Derive it.
2. Define : a) Gravity and an expression for acceleration due to gravity b) Pressure c) Freefall
3. If the earth attracts an apple does the apple also attract the earth? If yes, why does the earth not move towards the apple?
4. Why does a mug full of water feel lighter inside water?
5. A perpendicular force of 50N acting on a surface generate a pressure of 250pa. calculate area of cross section of surface on which pressure is acting.
6. Why and when does acceleration due to gravity acting on a body change.
7. A body has 40kg mass. Calculate its wt. when it is taken to a planet whose mass is 4 times the earth and radius half then that of the earth.
8. How does the wt. of a body gets affected when it is taken to poles from equator?
9. Why does the moon not actually fall on the surface of the earth?
10. State the difference between mass and weight.
11. A bar of gold has mass of 100g and weight is 9.8 N at some place when it is taken to some place at equator mass remains 100g but wt. is <0.98. Explain.
12. If the force of gravity vanishes why would we be flying in space?
13. A bag of sugar weighs W at a certain place at equator. If this bag is taken to Antarctica will its wt. remain the same or more or less. Why?
14. Give reasons:
 - a) Sleepers are provided under railway tracks
 - b) It is difficult to dross a rest on a horse back.
 - c) The bull of a rifle is very broad but tip of bullet is pointed.
 - d) Dams are made wide at base
 - e) Cutting instruments are often sharpened
 - f) Board pins are broad at the end and pointed on the other.
 - g) Skier's sink in fresh snow.
 - h) Sledges used by Eskimos have no wheels.
15. Calculate the pressure when force of 1000N acts on 2m² area.
16. Calculate the force if it produces a pressure of 50000pa. over 0.125m².