

CLASS IX SAMPLE PAPER SCIENCE

Gravitation

Answer the following questions:- (Short)

1. The motion of moon around the earth is due to which force? What would happen if there was no such force?
2. State two natural phenomenon which show the universal law of gravitation.
3. What happens to the gravitational force when the distance between two particles is (i) doubled , (ii) halved?
4. According to Third law of motion, when a stone is thrown downwards from a height, the earth should fall upwards towards the stone , but this doesn't happen. Why?
5. A feather and a coin are thrown from a height. The coin reaches the earth faster than the feather. But in vacuum they fall at the same rate. Explain.
6. What is the relation between Acceleration due to gravity (g) and the Gravitational Constant (G)?
7. How is the value of ' g ' on earth different at equator and at the poles?

I- Long questions:-

1. Explain the Universal Law of Gravitation.
2. Distinguish between Mass and Weight.(6 points)

II- Numericals:-

1. Find the force of gravitation between two bodies of masses 100 kg and 10^{24} kg, placed t a separation of 6000 km.
2. 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?
3. A ball is thrown vertically upwards with an initial speed of 100 m/s, simultaneously second ball is dropped from a height of 200m . Find at what height from ground, and what time the two balls meet.