CBSE CLASS 9TH

GRAVITATION (TEST - 01)

GENERAL INSTRUCTION

Maximum Marks = 30

Maximum Time = 50 minutes

SECTION – A (1M each)

1. Write down the unit of 'G' in S.I.
2. What is the value of g on the surface of moon ?
3. How is the force of attraction dependent on the masses of objects and distance between them ?
4. The Value of G = 6.67×10^{-11} Nm^2 kg^{-2} on the surface of the earth. What is the value of G on the surface of moon ?
5. Is the force of gravity stronger on the piece of iron than on a piece of wood if both have same mass ?

   OR

   When a stone is thrown vertically upwards, its velocity is continuously decreased. Why?

SECTION – B (2M each)

6. An apple attracts the earth and the earth attracts the apple towards its centre. Then, why only apple falls towards the earth but earth is not moved towards the apple ?
7. How is the value of 'g' on the earth related to the mass of the earth and its radius. Derive the expression.
8. A force of 20N acts upon a body of weight 9.8 N. What is the mass of the body and how much is its acceleration (g = 9.8 ms^{-2})

SECTION – C (3M each)

9. What is the difference between 'g' and 'G' ?
10. Give reasons
    (i) Why truck or motor bus has much wider tyres ?
    (ii) Why does an iron nails sinks in water but a wooden cork floats on water ?
    (iii) Why do we feel lighter when we swim ?
11. Which will exert more pressure, 100 kg mass on 10 m^3 or 50 kg mass on 4 m^2 ? Give reason
    What is the difference between 'g' and 'G' ?

SECTION – D (5M each)

12. Define terms 'mass' and 'weight'. Write their S.I units. Distinguish between mass and weight
13. (a) State Universal law of Gravitation. Write the expression for the gravitational force between the earth and object lying on the surface of the earth.
    (b) Gravitatinal force plays an important role in nature. Justify this statement