ACHIEVERS FOUNDATION

CLASS -9TH

GRAVITATION

Total Time – 70min
Total Marks – 35

(QUESTION 1 TO 8 ONE MARKS EACH)

1. Force of attraction between two bodies does not depend upon :

   (A) the shape of bodies (B) the distance between their centres

   (C) the magnitude of their masses (D) the gravitational constant

2. When the medium between two bodies changes, force of gravitation between them :

   (A) will increase (B) will decrease

   (C) will change according to the environment (D) remains same

3. S.I. unit of G is :

   (A) $Nm^2 kg^{-2}$ (B) $Nm kg^{-2}$ (C) $N kg^2 m^{-2}$ (D) $Nkg m^{-2}$

4. The acceleration due to gravity :

   (A) has he same value everywhere is space (B) has the same value everywhere on the earth

   (C) varies with the latitude on the earth (D) is greater on moon because it has smaller diameter

5. At which of the following locations the value of h the largest

   A) On top of Mount Everest B) On top of Qutub Minar

   C) At a place on the equator D) At the Camp site in Antarctica

6. When a space ship is at a distance of two earths radius from the centre of the earth, the gravitational acceleration is :

   (A) $19.6 ms^{-2}$ (B) $9.8 ms^{-2}$ (C) $4.9 m/s^2$ (D) $2.45 ms^2$

7. When a body is thrown vertically upward the maximum height reached is given by the expression

   A) $V^2/2g$ B) $u^2/2g$ C) $u^2 + 2gh$ D) $ut+g^2$

8. Name of device to measure weight and when weight become zero?

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(QUESTION 9 TO 17 THREE MARKS EACH)

9. Difference between Mass and Weight

10. Difference between 'g' and 'G'

11. What is universal law of gravitation ?

12. What is the acceleration due to gravity at height $\frac{R}{5}$ from the surface of earth (radius R) ?

13. The mass of the mass on the surface of earth is 100 kg. Does the weight on the surface of moon increase or decrease ? Explain.

14. A ball thrown up vertically returns to the thrower after 12 second. Find (Take g = 10 m/s) :

    (i) velocity with which it was thrown up.

    (ii) the maximum height it reaches.

    (iii) its position after 4s

15. Two persons having mass 50kg each, are standing such that the centre of gravity are 1m apart. Calculate the force of gravitation and also calculate the force of gravity on each.

16. A body thrown vertically upwards rises to a height of 10m calculate the velocity with which the body was thrown upwards and the time taken by the body to reach the highest point.

17. A bomb is dropped from an aircraft when it is directly above the target at a height of 1000 m the aircraft is moving with horizontal velocity of 5000 km/ hr. will the bomb hit the target? if not by how much distance will the bomb miss the target.