Resonance® Educating for better tomorrow

TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

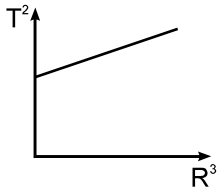
PHYSICS DPP DAILY PRACTICE PROBLEMS

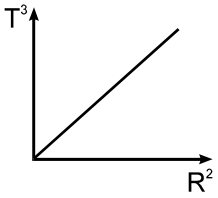
DPP NO. 2

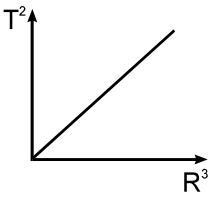
PHYSICS: GRAVITATION

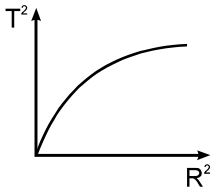
DPP No. : 2

1. Which of the following graph represents the time period of the planet moving around the sun.
[R = semi major axis of the path]

(1) 

(2) 

(3) 

(4) 

2. The orbital velocity of an artificial satellite in a circular orbit just above the earth's surface is V_0. The value of orbital velocity for another satellite orbiting at an altitude of half of earth's radius is

(1) $\left(\frac{3}{2}\right)V_0$ (2) $\sqrt{\frac{3}{2}}V_0$ (3) $\sqrt{\frac{2}{3}}V_0$ (4) $\frac{3}{4}V_0$

3. Energy required to move a body of mass m from an orbit of radius 2R to 3R is-

(1) GMm/12R (2) GMm/3R (3) GMm/8R (4) GMm/6R

4. Suppose the gravitational force varies inversely as the n^{th} power of distance. Then the time period of a planet in circular orbit of radius R around the sun will be proportional to -

(1) $R^{\left(\frac{n+1}{2}\right)}$ (2) $R^{\left(\frac{n-1}{2}\right)}$ (3) R^n (4) $R^{\left(\frac{n-2}{2}\right)}$

5. Average density of the earth :

(1) does not depend on g. (2) is a complex function of g

(3) is directly proportional to g (4) is inversely proportional to g

6. Weight of an object is :

(1) Normal reaction between ground and the object

(2) Gravitational force exerted by earth on the object.

(3) dependent on frame of reference.

(4) net force on the object

7. The weight of a body at the centre of the earth is -

(1) Zero

(2) Infinite

(3) Same as on the surface of earth

(4) None of the above

8. If the distance between two masses is doubled, the gravitational attraction between them.

(1) Is doubled

(2) Becomes four times

(3) Is reduced to half

(4) Is reduced to a quarter

9. The gravitational force between two stones of mass 1 kg each separated by a distance of 1 metre in vacuum is -

(1) Zero

(2) 6.675×10^{-5} newton

(3) 6.675×10^{-11} newton

(4) 6.675×10^{-8} newton

10. A body of mass m is lifted up from the surface of earth to a height three times the radius of the earth. The change in potential energy of the body is (g = gravity field at the surface of the earth)

(1) mgR (2) $\frac{3}{4}$ mgR (3) $\frac{1}{3}$ mgR (4) $\frac{2}{3}$ mgR