



TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

PHYSICS

DPP

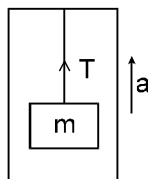
DAILY PRACTICE PROBLEMS

DPP NO. 2

PHYSICS: 10. _WORK, POWER, ENERGY

DPP No. : 2

- A particle moves with a velocity $\vec{v} = (5\hat{i} - 3\hat{j} + 6\hat{k})$ m/s under the influence of a constant force $\vec{F} = (10\hat{i} + 10\hat{j} + 20\hat{k})$ N. The instantaneous power applied to the particle is :
 (1) 200 J/s (2) 40 J/s (3) 140 J (4) 170 J/s
- A man pushes wall and fails to displace it. He does
 (1) Negative work (2) Positive but not maximum work
 (3) No work at all (4) Maximum work
- A particle moves from position $\vec{r}_1 = 3\hat{i} + 2\hat{j} - 6\hat{k}$ to position $\vec{r}_2 = 14\hat{i} + 13\hat{j} + 9\hat{k}$ under the action of force $4\hat{i} + \hat{j} + 3\hat{k}$ N. The work done by this force will be
 (1) 100 J (2) 50 J (3) 200 J (4) 75 J
- A particle of mass 100 g is thrown vertically upwards with a speed of 5 m/s. The work done by the force of gravity during the time the particle goes up is :
 (1) - 0.5 J (2) - 1.25 J (3) 1.25 J (4) 0.5 J
- A ball is released from the top of a tower. The ratio of work done by force of gravity in first, second and third second of the motion of the ball is
 (1) 1 : 2 : 3 (2) 1 : 4 : 9 (3) 1 : 3 : 5 (4) 1 : 5 : 3
- A block of mass m is suspended by a light thread from an elevator. The elevator is accelerating upward with uniform acceleration a . The work done by tension on the block during t seconds is ($u = 0$) :



- (1) $\frac{m}{2} (g + a) at^2$ (2) $\frac{m}{2} (g - a)at^2$ (3) $\frac{m}{2} gat^2$ (4) 0

7. A particle moves under the effect of a force $F = Cx$ from $x = 0$ to $x = x_1$. The work done in the process is
(1) Cx_1^2 (2) $\frac{1}{2}Cx_1^2$ (3) Cx_1 (4) Zero
8. The work done by all the forces (external and internal) on a system equals the change in
(1) total energy (2) kinetic energy (3) potential energy (4) none of these
9. If kinetic energy is doubled, find fractional change in momentum :
(1) $\sqrt{2} - 1$ (2) $2\sqrt{2}$ (3) $\frac{1}{\sqrt{2}}$ (4) $\frac{1}{2\sqrt{2}}$
10. A spring of force constant 800 N/m has an extension of 5cm. The work done in extending it from 5cm to 15cm is
(1) 16 J (2) 8 J (3) 32 J (4) 24 J