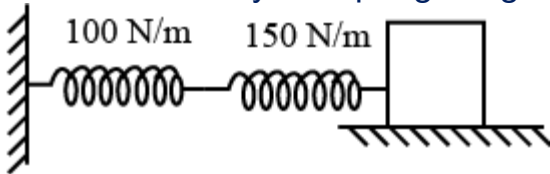


दृश कदम

WORK ENERGY POWER

1	<p>A porter lifts a heavy suitcase of mass 80 kg and lowers it down by a distance of 80 cm with a constant velocity. Calculate the work done by the porter in lowering the suitcase. (take $g = 9.8 \text{ ms}^{-2}$)</p> <p>(a) - 62720.0 J (b) - 627.2 J (c) + 627.2 J (d) 784.0 J</p>
2	<p>An object is displaced from point A (2m, 3m, 4m) to a point B (1m, 2m, 3m) under a constant force $F = (2i + 3j + 4k)\text{N}$, then the work done by this force in this process is</p> <p>(a) 9 J (b) - 9 J (c) 18J (d) - 18 J</p>
3	<p>A position dependent force, $F = (7 - 2x + 3x^2)$ N acts on a small body of mass 2 kg and displaces it from $x = 0$ to $x = 5$ m. Work done in joule is</p> <p>(a) 35 (b) 70 (c) 135 (d) 270</p>
4	<p>Two springs of force constant 100 N/m and 150 N/m are in series as shown. The block is pulled by a distance of 2.5 cm to the right from equilibrium position. What is the ratio of work done by the spring at left to the work done by the spring at right?</p>  <p>(a) 3 / 2 (b) 2 / 3 (c) 0.2 (d) 0.5</p>
5	<p>The ratio of kinetic energies of two bodies is 2 : 1 and their momentum are in the ratio of 1: 2. The ratio of their masses will be:</p> <p>(a) 1:4 (b) 4:1 (c) 8:1 (d) 1:8</p>
6	<p>If the momentum of a body is increased by 50% then the percentage increase in its kinetic energy is</p> <p>(a) 50% (b) 100% (c) 125% (d) 225%</p>
7	<p>A cricket ball of mass 0.15 kg is thrown vertically up by a bowling machine so that it rises to a maximum height of 20 m after leaving the machine. If the part pushing the ball applies a constant force F on the ball and moves horizontally a</p>



WORK ENERGY POWER

	<p>distance of 0.2 m while launching the ball, the value of F (in N) is ($g = 10\text{ms}^{-2}$)</p> <p>(a) 150 N (b) 1,5 N (c) 300 N (d) 151.5 N</p>
8	<p>An object of mass 500 g, initially at rest, is acted upon by a variable force whose X component varies with X in the manner shown. The velocities of the object at the points $X = 8\text{ m}$ and $X = 12\text{ m}$, would have the respective values of (nearly)</p> <p>(a) 18 m/s, 20.6 m/s (b) 18 m/s, 24.4 m/s (c) 23 m/s, 24.4 m/s (d) 23 m/s, 20.6 m/s</p>
9	<p>A body of mass 2 kg moving under a force has relation between displacement x and time t as $x = t^3 / 3$, where x is in metre and t is in sec. The work done by the body in first two second will be</p> <p>(a) 8 joule (b) 16 joule (c) 4 joule (d) 2 joule</p>
10	<p>Consider a drop of rain water having mass 1 g falling from a height of 1 km. It hits the ground with a speed of 50 m/s. $g = 10\text{ m/s}^2$. The work done by the (i) gravitational force and the (ii) resistive force of air is</p> <p>(a) (i) 1.25 J (ii) - 8.25 J (b) (i) 100 J (ii) 8.75 J (c) (i) 10 J (ii) - 8.75 J (d) (i) - 10 J (ii) - 8.25 J</p>