

MDCAT Physics Chapter 2 Work and energy Online Test

Sr	Questions	Answers Choice
1	A ball is thrown vertically upwards. Neglecting air resistance, which statement is correct?	<p>A. The kinetic energy of the ball is greatest at the greatest height attained</p> <p>B. The potential energy of the ball increase uniformly with time during the ascent</p> <p>C. By the principle of conservation of momentum. The momentum of the ball is constant throughout its motion</p> <p>D. By the principle of conservation of energy, the total energy of the ball is constant throughout its motion</p>
2	A man weighing 500 N carries a load of 10 kg to the top of a building in 4 minutes. The work done by the man is 6×10^4 J. If he carries the same load in 8 minutes, the work done by the man will be:	<p>A. 3×10^4 J</p> <p>B. 6×10^4 J</p> <p>C. 9×10^4 J</p> <p>D. 12×10^4 J</p>
3	A person holds a bucket of weight 60N. He walks 7 m along the horizontal path and then climbs up a vertical distance of 5 m. The work done by the man is:	<p>A. 300 N-m</p> <p>B. 420 N-m</p> <p>C. 720 N-m</p> <p>D. none of these</p>
4	A man M_1 of mass 80 kg runs up a staircase in 15s. Another man M_2 also of mass 80 kg runs up the same staircase in 20s. The ratio of the power developed by them will be	<p>A. 1</p> <p>B. 4/3</p> <p>C. 16/9</p> <p>D. none of these</p>
5	An engine pumps up 100 kg of water through a height of 10m in 5s. Given that the efficiency of the engine is 60%, what is the power of the engine? (Take $g = 10\text{ms}^{-2}$)	<p>A. 33 kW</p> <p>B. 3.3kW</p> <p>C. 0.33kW</p> <p>D. 0.033kW</p>
6	An engine pumps out 40 kg of water in one second. The water comes out vertically upwards with a velocity of 3ms^{-1} . What is the power of engine in kilowatt?	<p>A. 1.2kW</p> <p>B. 120kW</p> <p>C. 12kW</p> <p>D. 1200kW</p>
7	An elevator's motor produces 3000 W power. The speed With Which it can lift a 1000 kg load is:	<p>A. 30.6ms^{-1}</p> <p>B. 0.306ms^{-1}</p> <p>C. 3.06ms^{-1}</p> <p>D. 300.3ms^{-1}</p>
8	A bomb of mass 30 kg at rest explodes into two pieces of masses 18 kg and 12 kg. The velocity of 18 kg mass is 6ms^{-1} The KE of other mass is	<p>A. 324 J</p> <p>B. 256 J</p> <p>C. 245 J</p> <p>D. 524 J</p>
9	The power needed to lift amass of 5000g to height of 1min 2 second is	<p>A. 2.45 watt</p> <p>B. 24.5 watt</p> <p>C. 245 watt</p> <p>D. 2.45 k watt</p>
10	3 joules of work is done in 3 seconds, then power is:	<p>A. 6 watt</p> <p>B. 3 watt</p> <p>C. 18 watt</p> <p>D. 1 watt</p>
11	A stone is thrown up from the surface of earth when it reaches at maximum height. its total energy is equal to	<p>A. mgh</p> <p>B. $\frac{1}{2}mv^2$</p> <p>C. zero</p> <p>D. 2mgh</p>
12	You lift a suit case from the floor and keep it on a table. The work done by you on the suitcase does not depend on	<p>A. the path taken by the suitcase</p> <p>B. weight of the suitcase</p> <p>C. initial and final position</p> <p>D. None</p>
13	Car X is traveling at half the speed of car Y. Car X has twice mass of car Y. Which statement is correct?	<p>A. Car X has half the kinetic energy of car Y</p> <p>B. Car X has one quarter of the kinetic energy of car Y</p> <p>C. Car X has twice the kinetic energy of car Y</p> <p>D. Car X has four times the kinetic energy of car Y</p>

		D. The tow cars have the same kinetic energy
14	. A force "F1" acts on a body through distance "S1" in the direction of motion and does work "W1". Similarly another force "F2" act on same body through distance "S2" but in opposite to the direction of motion and does work "W2". Now if $F_1 = F_2$ and $S_1 = S_2$ then which statement is correct.	A. $W_1 = W_2$ B. $W_2 < W_1$ C. $W_1 > W_2$ D. $W_1 = W_2 = 0$
15	Kinetic energy of a body moving with speed of 10 ms^{-1} is 30 J. If its speed becomes 30 ms^{-1} then its K.E becomes	A. 10J B. 270 J C. 90J D. 180 J
16	The time taken by an engine of power 10 kW to lift a mass of 200 kg to a height of 40 m is ($g = 10 \text{ ms}^{-2}$)	A. 2 sec B. 4 sec C. 8 sec D. 16sec
17	Which of the following work is greater?	A. + 100J B. 0 J C. - 100J D. Both A and B are equal
18	In a gravitational field when work done by gravity is negative then	A. P.E increases B. P.E decrease C. None D. P.E remains same
19	If the velocity of a body becomes half, the kinetic energy of body will become	A. One fourth B. Double C. Four times D. Half
20	A force of 6 N act horizontally on a stationary mass of 2kg for 4s. The kinetic energy in joule is	A. 12 B. 72 C. 56 D. 888