MDCAT 2020

TEST RESULT

Practice Test 1 (Topic -3 Work Energy & Power)

10

10 min

15-Jun-2020

58 sec

Result Detail

MDCAT 2020

Q : At which angle work done equal to half of its maximum value

A 30^o

B 60^o

C 45^o

D 90^o

Explanation

$W = Fd\cos\theta$

$W_{max} = Fd$

$W = W_{max}\cos\theta$

$\theta = 60°$

MDCAT 2020

Q : Which one of the following work is maximum

A + 100 J

B −200 J

C 150 J

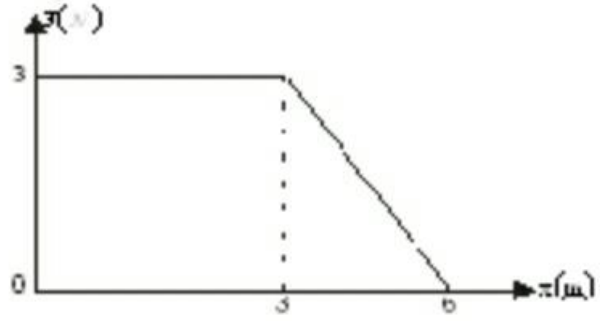
D −175 J

Explanation

As work is scalar. So, its value depends upon its magnitude. −200 is maximum amongst all.

MDCAT 2020

Q : A force F acting on an object varies with distance x as shown in the figure. The work done by the force in moving the object form x = 0 to x = 6 is



A 18 J

B 13.5 J

C 9 J

D 4.5 J

Explanation

MDCAT 2020

A 18 J

B 13.5 J

C 9 J

D 4.5 J

Explanation

w = Area under F -x graph

$$W = (9) + \frac{1}{2}3 \times 3 = 9 + \frac{9}{2} = \frac{27}{2} = 13.5$$

MDCAT 2020

Q : Work done by the centripetal force is

A negative

B zero

C positive

D none

Explanation

$$W = \vec{F}_c . \vec{d}$$

$$= F_c d \cos 90°$$

$$\boxed{W = 0}$$

MDCAT 2020

Q : A man pushes a lawn mower with a 1.5 N force directed at an angle of 60^{o} downward from the horizontal. Find the work done by the man as he cuts a strip of grass 10 m long.

A 10 J

B 4.5 J

C 7.5 J

D −2.5 J

Explanation

$W = \vec{F}.\vec{d}$

A 10 J

B 4.5 J

C 7.5 J

D −2.5 J

Explanation

$W = \vec{F}.\vec{d}$

$W = F\ d \cos\theta$

$= 1.5\ (10) \cos 60^0$

$W = 7.5\ J$

MDCAT 2020

Q : The engine of a car exerts force 2000 N and moves it with a constant velocity of 10 ms^{-1}. The power develop by the engine is

A 2 kW

B 2000 kW

C 20 kW

D 200 kW

Explanation

$P = \vec{F} . \vec{v}$

MDCAT 2020

Q : The time taken by an engine of power 10 kW to lift a mass of 200 kg to the height of 40 m is

A 2 s

B 4 s

C 8 s

D 16 s

Explanation

$$P = \frac{mgh}{t}$$

$$t = \frac{mgh}{P} = \frac{200 \times 10 \times 4\cancel{0}}{}$$

MDCAT 2020

A 2 s

B 4 s

C 8 s

D 16 s

Explanation

$$P = \frac{mgh}{t}$$

$$t = \frac{mgh}{P} = \frac{200 \times 10 \times 4\cancel{0}}{1\cancel{0} \times 1\cancel{0}^{3}}$$

$$t = 8s$$

MDCAT 2020

Q : A engine pulls a truck with a force of 360 N at an angle of 60° with the horizontal at a speed of 10 km h^{-1}. The power is

A 300 W

B 350 W

C 500 W

D 400 W

Explanation

$P = F.v$

$P = Fv\cos\theta$

MDCAT 2020

A 300 W

B 350 W

C 500 W

D 400 W

Explanation

$$P = F.v$$

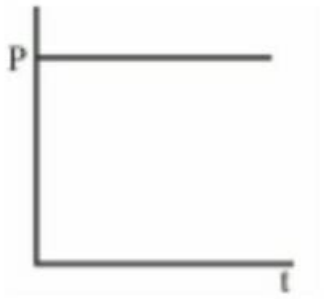
$$P = Fv\cos\theta$$

$$P = 360x10x\frac{1000}{3600}\ x\cos 60^{o}$$

$$P = 1000x\frac{1}{2} = 500\,W$$

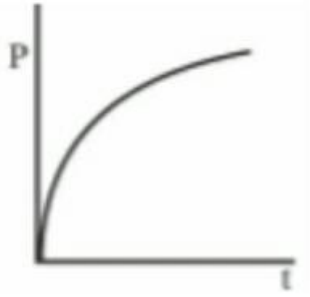
Q : A motor drives a body along a straight line with a constant force. The power P developed by the motor must vary with time t according to

A



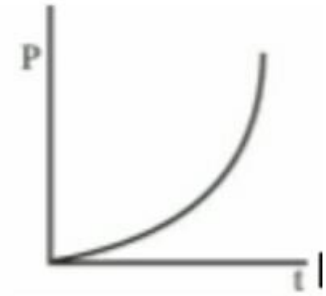
B

C

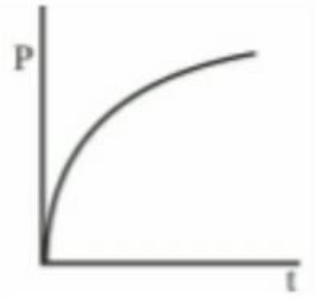


A

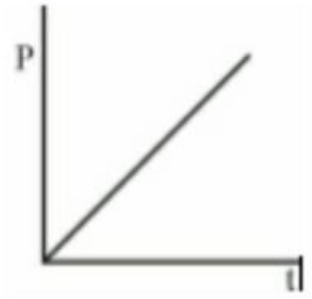
B



C



D



MDCAT 2020

Q : A constant force F acting through a distance of 10 m changes the kinetic of a body from 30 J to 45 J. The magnitude of force is

A 15 N

B 4.5 J

C 1.5 N

D 45 N

Explanation

F.d = ΔK.E

MDCAT 2020

TEST RESULT

Practice Test 2 (Topic -3 Work Energy & Power)

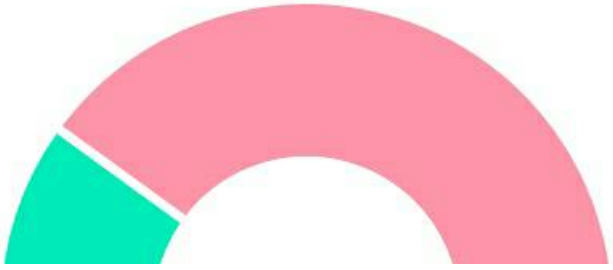
10

10 min

15-Jun-2020

52 sec

Result Detail



MDCAT 2020

Q : A body is dropped from height h. On reaching the height (h – x) its velocity will be

A $\sqrt{2g(h-x)}$

B $\sqrt{2mg(h-x)}$

C $\sqrt{2gx}$

D $\sqrt{2mgx}$

Explanation

using third equation of motion

$v_f^2 - v_i^2 = 2gS$

$v_f^2 = v_i^2 - 2gS$ where $S = x$

A $\sqrt{2g(h-x)}$

B $\sqrt{2mg(h-x)}$

C $\sqrt{2gx}$

D $\sqrt{2mgx}$

Explanation

using third equation of motion

$v_f^2 - v_i^2 = 2gS$

$v_f^2 = v_i^2 - 2gS$ where $S = x$

$v_f^2 = 2gS$ where $v_i = 0$

taking square root of both sides

$v_f = \sqrt{2gx}$

Q : When work done by gravitational field is negative then P.E of the system.

A Increases

B Decreases

C Remains same

D None of these

Explanation

When a body is raised in height then work by gravitational field becomes negative. As height increases so P.E increases.

Q : A 1kg mass has a K.E of 1J when its speed is

A 0.45 m/sec

B 10 m/sec

C 1.4 m/sec

D 4.4 m/sec

Explanation

$$K.E = \frac{1}{2}mv^2$$

$$v^2 = \frac{2\,K.E}{m}$$

MDCAT 2020

B 10 m/sec

C 1.4 m/sec

D 4.4 m/sec

Explanation

$$K.E = \frac{1}{2}mv^2$$

$$v^2 = \frac{2\,K.E}{m}$$

$$v = \sqrt{\frac{2K.E}{m}} = \sqrt{\frac{2\times 1}{1}}$$

$$v = \sqrt{2} = 1.41\ ms^{-1}$$

MDCAT 2020

Q : All the food a person eats in one day has about same energy as

A $\frac{1}{3}$ liter of petrol

B 3 liter of petrol

C 1 liter of petrol

D $\frac{1}{2}$ liter of petrol

Explanation

information

MDCAT 2020

Q : If momentum is increased by two times K.E increases by

A Two times

B 3 times

C four times

D Remains

Explanation

$$K.E = \frac{P^2}{2m}$$

$$(K.E)' = \left(\frac{2P^2}{2m}\right) \Rightarrow 4\frac{P^2}{2m}$$

MDCAT 2020

A Two times

B 3 times

C four times

D Remains

Explanation

$$K.E = \frac{P^2}{2m}$$

$$(K.E)' = \left(\frac{2P^2}{2m}\right) \Rightarrow 4\frac{P^2}{2m}$$

$$(K.E)' = 4K.E$$

MDCAT 2020

Q : The K.E of a body of mass 2Kg and momentum 4 Ns is

A **4J**

B 16 J

C 8J

D 2J

Explanation

$$K.E = \frac{p^2}{2m} = \frac{(4)^2}{2\times 2} = \frac{16}{4} = 4J$$

MDCAT 2020

Q : By neglecting air friction, then relation for free falling body is

A loss in P.E = gain in K.E

B loss in P.E < gain in K.E

C gain in P.E > loss in K.E

D none of these

Explanation

$$mgh_1 - mgh_2 = \frac{1}{2}mv_2^2 - \frac{1}{2}mv_1^2$$

$$Loss\ in\ P.E = Gain\ in\ K.E$$

MDCAT 2020

Q : The energy stored in the catapult when it pulls is:

A elastic P.E

B P.E

C K.E

D All of these

Explanation

As catapult is of elastic rubber so energy stored is elastic potential energy.

Incorrect

Q 9/10

Q : At maximum height the K.E energy is equal to

A P.E

B Zero

C Total energy

D Both A and C

Explanation

Concept of interconversion of energy.

Q : A body of mass m is dropped from a height h above the ground. The velocity v of the body when it has lost half its initial potential energy is given by:

A $v = \sqrt{gh}$

B $v = \sqrt{2gh}$

C $v = \sqrt{\frac{gh}{2}}$

D $v = 2\sqrt{gh}$

Explanation

Loss in P.E = Gain in K.E

MDCAT 2020

A $v = \sqrt{gh}$

B $v = \sqrt{2gh}$

C $v = \sqrt{\frac{gh}{2}}$

D $v = 2\sqrt{gh}$

Explanation

Loss in P.E = Gain in K.E

$$\frac{1}{2}mgh = \frac{1}{2}mv^2$$

$$v^2 = gh \Rightarrow v = \sqrt{gh}$$

MDCAT 2020

TEST RESULT

Test Level 1 (Topic -3 Work Energy & Power)

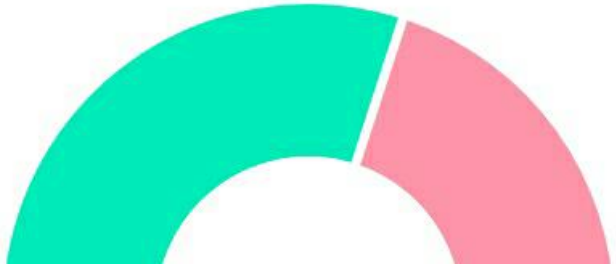
20

15 min

16-Jun-2020

45 sec

Result Detail



MDCAT 2020

Incorrect

Q 1/20

Q : The work done is said to be negative if

A $\theta = 0$

B $\theta = \infty$

C $\theta < 90°$

D $\theta > 90$

Explanation

For $\theta > 90$,value of $\cos\theta$ will be negative

MDCAT 2020

Q : A 4 kg body is thrown vertically upward from the ground with a velocity of 5 ms^{-1}. Its kinetic energy just before hitting the ground is

A 25 J

B 50 J

C 75 J

D 100 J

Explanation

$$K.E = \frac{1}{2} mv^2$$

from the ground with a velocity of 5 ms^{-1}. Its kinetic energy just before hitting the ground is

A 25 J

B 50 J

C 75 J

D 100 J

Explanation

$K.E = \frac{1}{2} mv^2$

MDCAT 2020

Q : A brick of mass 2 kg falls from height 10m its velocity when its height is 5 m

A $10ms^{-1}$

B $5ms^{-1}$

C C) $2ms^{-1}$

D D) $15ms^{-1}$

Explanation

Book Example

$$v = \sqrt{2g(h_1 - h_2)}$$

MDCAT 2020

A $10ms^{-1}$

B $5ms^{-1}$

C C) $2ms^{-1}$

D D) $15ms^{-1}$

Explanation

Book Example

$$v = \sqrt{2g(h_1 - h_2)}$$

$$= \sqrt{2(10)(10-5)}$$

$$= \sqrt{(10)10}$$

$$v = 10ms^{-1}$$

MDCAT 2020

Q : A automobile travelling with a speed of 60 km h^{-1}, can brake to stop within a distance of 20 m. If the car is going twice as fast i.e., 120 km h^{-1}, the stopping distance will be

A 60 m

B 40 m

C 20 m

D 80 m

Explanation

$\frac{1}{2}mv^2 = f \times S$

as fast i.e., 120 km h^{-1}, the stopping distance will be

A 60 m

B 40 m

C 20 m

D 80 m

Explanation

$$\frac{1}{2}mv^2 = f \times S$$

Since v is doubled therefore S is increased by a factor of 4.

MDCAT 2020

Q : A body travels displacement of 10 m by force of 5N If work done is 25 J then angle between $\vec{F}$ and $\vec{d}$ is

A 0^o

B 45^o

C 30^o

D 60^o

Explanation

$$W = Fd\cos\theta$$
$$25 = (5)(10)\cos\theta$$
$$\cos^{-1}(\frac{1}{\ }) = \theta$$

between F and d is

A 0^o

B 45^o

C 30^o

D 60^o

Explanation

$$W = Fd\cos\theta$$
$$25 = (5)(10)\cos\theta$$
$$\cos^{-1}(\frac{1}{2}) = \theta$$
$$60° = \theta$$

A 0 J

B 20 J

C 10 J

D 30 J

Explanation

$W = 10 \times 1 + (-10) \times 1 + 10 \times 1$

$W = 10$ J

MDCAT 2020

Q : Power needed to place 100 kg bucket on a height of 2m in 2sec is

A 100 watt

B 1000 watt

C 50 watt

D 500 watt

Explanation

$$P = \frac{mgh}{t}$$

$$= \frac{100 \times 10 \times 2}{2}$$

MDCAT 2020

A 100 watt

B 1000 watt

C 50 watt

D 500 watt

Explanation

$$P = \frac{mgh}{t}$$

$$= \frac{100 \times 10 \times 2}{2}$$

$$P = 1000\ watt$$

MDCAT 2020

Q : A car of mass 1000 kg moving on a horizontal road with a steady speed of 10 m/sec has total frictional force on it of 400 N. The power due to engine is

A 40 W

B 400 W

C 4000 W

D 20 W

Explanation

$P = \vec{F}.\vec{v} = Fv\cos\theta = Fv\cos 0° = Fv = 400$:

Q : If a power of 1KW is maintained for 1 sec then work done is

A 10^5J

B 10^{-6} J

C 10^3 J

D 3.6×10^5 J

Explanation

$$P = \frac{W}{t} \Rightarrow W = P \times t$$

$$W = 1\,k \times 1 = 1\,kJ = 10^3 J$$

MDCAT 2020

Q : If velocity of a body is doubled and its mass doubled then K.E of the body becomes

A double

B four times

C eight times

D one half

Explanation

$$K.E = \frac{1}{2}mv^2$$

MDCAT 2020

B four times

C eight times

D one half

Explanation

$$K.E = \frac{1}{2}mv^2$$

$$K.E' = \frac{1}{2}(2m)(2v)^2$$

$$K.E' = 8(\frac{1}{2}mv^2)$$

$$K.E' = 8K.E$$

Incorrect

Q 11/20

Q : If a body is raised up from the earth's surface, the work done changes the

A gravitational P.E

B K.E

C Air resistance

D elastic P.E

Explanation

Statement of work energy principle

MDCAT 2020

Q : What is equal to one kilowatt-hour (1kWh)?

A 3.6 kJ

B 3.6 MJ

C 3.6 μJ

D 3.6 mJ

Explanation

$$1\ \text{kWh} = (1000\text{W})(3600\ \text{s})$$
$$= 3600000\ \text{Ws}$$
$$= 3.6 \times 10^6\ \text{J} \quad \because \text{Ws} = \text{J}$$

MDCAT 2020

(1kWh):

A 3.6 kJ

B 3.6 MJ

C 3.6 μJ

D 3.6 mJ

Explanation

$$1\ \text{kWh} = (1000\text{W})(3600\ \text{s})$$
$$= 3600000\ \text{Ws}$$
$$= 3.6 \times 10^6\ \text{J} \quad \because \text{Ws} = \text{J}$$
$$= 3.6\ \text{MJ}$$

MDCAT 2020

Q : A brick of mass 20 kg is dropped from a rest position 25 m above the ground. What is its velocity at a height of 20 m above the ground?

A $5\ ms^{-1}$

B $14.14 ms^{-1}$

C $2.5\ ms^{-1}$

D $10 ms^{-1}$

Explanation

$mg(h_1 - h_2) = 1/2\ m\ (v_2^2 - v_1^2)$

As $v_1 = 0$ and $v_2 = v$

MDCAT 2020

A $5\ ms^{-1}$

B $14.14 ms^{-1}$

C $2.5\ ms^{-1}$

D $10 ms^{-1}$

Explanation

$mg(h_1 - h_2) = 1/2\ m\ (v_2^2 - v_1^2)$

As $v_1=0$ and $v_2=v$

Hence $v^2 = 2g\ (h_1 - h_2)$

or $v = \sqrt{2 \times 10 ms^{-2} \times 5m} = 10 ms^{-1}$

MDCAT 2020

Q : A 4 kg body is thrown vertically upward from the ground with a velocity of 5 ms^{-1}. Its kinetic energy just before hitting the ground is

A 25 J

B 75 J

C 50 J

D 100 J

Explanation

K.E of throw = K.E before hitting

$K.E = \frac{1}{2}A(5^2)$

its kinetic energy just before hitting the ground is

A 25 J

B 75 J

C 50 J

D 100 J

Explanation

K.E of throw = K.E before hitting

So, $K.E = \frac{1}{2}4(5^2)$

K.E = 50J

MDCAT 2020

Q : Two particles of masses m and 4m have linear momenta in the ratio of 2 : 1. What is the ratio of their kinetic energies?

A $\sqrt{2}$

B 2

C 4

D 16

Explanation

$$\frac{K.E_1}{K.E_2} = \frac{P_1^2}{P_2^2} \times \frac{m_2}{m_1}$$

MDCAT 2020

Q : A man pushes a wall but fails to displace it. He does

A Negative work

B Positive but small work

C Positive and maximum work

D No work at all

Explanation

Work W = Fs, As displacement s = 0; so work, W = 0

MDCAT 2020

A body constrained to move in the Y-direction is subjected to a force given by $\vec{F} = -2\hat{i} + 15\hat{j} + 6\hat{k}$ newton

,What is the work done by the force in moving the body a distance of 10 metre along the y-axis?.

A 190J

B 160J

C 150J

D 20J

MDCAT 2020

A 190J

B 160J

C 150J

D 20J

Explanation

$$W = \vec{F}.\vec{s} = (-2\hat{i} + 15\hat{j} + 6\hat{k}).(10\hat{j}) = 150J$$

MDCAT 2020

Q : An engine develops 10 kW of power. How much time will it take to lift a mass of 200 kg to a height of 40 m. (g=10 m/sec^2)

A 4 sec

B 5 sec

C 8 sec

D 10 sec

Explanation

$$P = \frac{mgh}{t} = 10 \times 10^3 \text{Þ } t = \frac{200 \times 4(}{10 \times}$$

MDCAT 2020

How much time will it take to lift a mass of 200 kg to a height of 40 m. (g=10 m/sec^2)

A 4 sec

B 5 sec

C 8 sec

D 10 sec

Explanation

$$10 \times 10^3 \text{ Þ } t = \frac{200 \times 40 \times 10}{10 \times 10^3} = 8 \text{ sec}$$

MDCAT 2020

Q : A car of mass 1000 kg accelerates uniformly from rest to a velocity of 54 km/hour in 5s. The average power of the engine during this period in watts is (neglect friction)

A 2000 W

B 22500 W

C 5000 W

D 2250 W

Explanation

ork done Increase in K.E. $\frac{1}{2}m$

MDCAT 2020

velocity of 54 km/hour in 5s. The average power of the engine during this period in watts is (neglect friction)

A 2000 W

B 22500 W

C 5000 W

D 2250 W

Explanation

$$\text{Power} = \frac{\text{Work done}}{\text{time}} = \frac{\text{Increase in}}{\text{time}}$$

velocity of 54 km/hour in 5s. The average power of the engine during this period in watts is (neglect friction)

A 2000 W

B 22500 W

C 5000 W

D 2250 W

Explanation

$$P = \frac{\frac{1}{2}mv^2}{t} = \frac{\frac{1}{2} \times 10^3 \times (15)^2}{5} = 22$$

MDCAT 2020

Q :

The rate at which work is being done is called

A Power

B Energy

C Density

D Force

Explanation

$$P = \frac{W}{t}$$

MDCAT 2020

TEST RESULT

Test Level - 2 (Topic -3 Work Energy & Power)

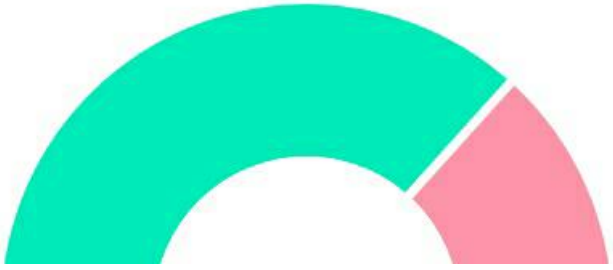
30

25 min

16-Jun-2020

49 sec

Result Detail



Test Level - 2 (Topic -3 Work,Ener...

MDCAT 2020

Correct

Unattempted

Incorrect

Q 1/30

Q : A ball is dropped from a height of 10 m.

A Its potential energy increases and kinetic energy decreases during the falls

B its potential energy decreases and the kinetic energy increases during the fall.

C Its potential energy is equal to the kinetic energy during the fall.

D its potential energy and kinetic energy is maximum while it is falling.

1 2 3 4 5 6 7

MDCAT 2020

Correct

Unattempted

Incorrect

Q 2/30

Q : How much time will be required to perform 520 J of work at the rate of 20 W?

A 24 s

B 20 s

C 16 s

D 26 s

Test Level - 2 (Topic -3 Work,Ener...

MDCAT 2020

Correct

Unattempted

Incorrect

Q 3/30

Q : Which of the followings is an example of work done against gravitational force?

A Getting up with the stairs

B Get down with the stairs

C Walking on the flat ground

D Dropping any object down from the top

1 2 3 4 5 6 7

MDCAT 2020

Correct

Unattempted

Incorrect

Q 4/30

Q : Due to application of 5 N force an object moves 10 meter along perpendicular direction of the force. What amount work is done?

A 50 Joule

B 15 Joule

C 5 Joule

D 0 Joule

MDCAT 2020

Correct

Unattempted

Incorrect

Q 5/30

Q : When the speed of object is halved and the mass is quadrupled then the kinetic energy is:

A Quartered

B Twice

C One Third

D Remain same

MDCAT 2020

Correct

Unattempted

Incorrect

Q 6/30

Q : A gardener pushes a lawn roller through a distance of 20 m. If he applies a force of 20 kg in a direction inclined at 60° to the ground, find the work done by him. ($g=9.8m/s^2$)

A 400J

B 1960J

C 250J

D 2514J

MDCAT 2020

Correct Unattempted

Incorrect Q 7/30

Q : If a pump can lift 200 kg of water through a height of 6 m in 10 seconds, then its power is:

A 1100 watts

B 1000 watts

C 1300 watts

D 1200 watts

MDCAT 2020

Correct

Unattempted

Incorrect

Q 8/30

Q : The decrease in the potential energy of a ball of mass 20 kg which falls from a height of 50 cm is:

A 968 J

B 98 J

C 1980 J

D None of these

MDCAT 2020

Correct | Unattempted | Incorrect | Q 9/30

Q : A force $F=(5\hat{i}+3\hat{j})$ newton is applied over a particle which displaces it from its origin to the point $r=(2\hat{i}-1\hat{j})$ metres. The work done on the particle is:

A -7 joules

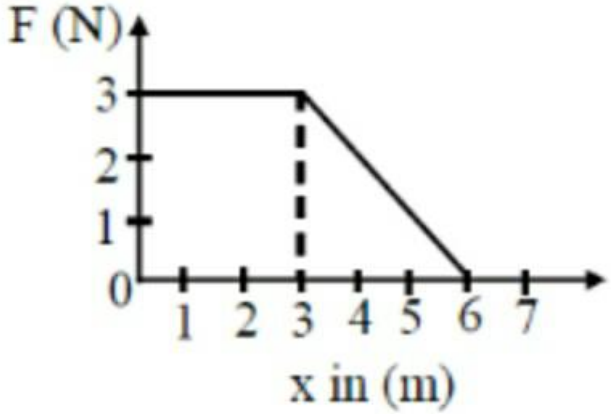
B + 13 joules

C + 7 joules

D + 11 joules

MDCAT 2020

Q : A force F acting on an object varies with distance x as shown here. The force is in N and x in m. The work done by the force in moving the object from x = 0 to x = 6 m is:



A 18.0 J

B 13.5 J

C 4.5 J

D 9.0 J

MDCAT 2020

Correct

Unattempted

Incorrect

Q 11/30

Q : In the presence of air friction, the relation for free falling body is

A $mgh = \frac{1}{2}mv^2 - fh$

B $mgh = fh - \frac{1}{2}mv^2$

C $mgh = \frac{1}{2}mv^2 + fh$

D $mgh = fg + \frac{1}{2}mv^2$

MDCAT 2020

Correct | Unattempted | Incorrect | Q 12/30

Q : A particle moves with $\vec{v} = -3\hat{j} + 5\hat{i} + 6\hat{k}\ ms^{-1}$ Under $\vec{F} = 10\hat{i} + 10\hat{j} + 20\hat{k}$ N. the power applied:

A $200\ Js^{-1}$

B $40\ Js^{-1}$

C $170\ Js^{-1}$

D $140\ Js^{-1}$

MDCAT 2020

Correct

Unattempted

Incorrect

Q 13/30

Q : Which of the following bodies has the largest kinetic energy?

A Mass 3M and speed v

B Mass 2M and speed 3v

C Mass 3M and speed 2v

D Mass M and speed 4v

MDCAT 2020

Correct Unattempted

Incorrect Q 14/30

Q : The P.E of mass m at height 50m above the ground is 100J. At what height from the ground its P.E becomes 200 J

A 20m

B 15m

C 17.5

D 100m

MDCAT 2020

Correct

Unattempted

Incorrect

Q 15/30

Q : Which one is biggest unit of energy?

A Joule

B Calories

C KWh

D erg

MDCAT 2020

Correct | Unattempted | Incorrect | Q 16/30

Q : Electron, proton, deuterium and α-particle have same K.E. Which of them has highest momentum?

A α -particle

B Proton

C Deuterium

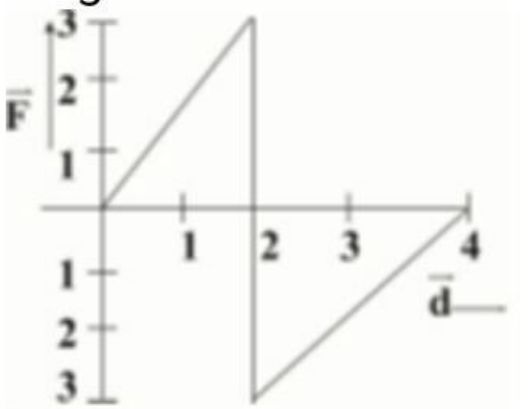
D Electron

MDCAT 2020

Incorrect

Q 17/30

Q : The positive work done in the given diagram is:



A 4J

B 6J

C 3J

D 12J

MDCAT 2020

Correct | Unattempted

Incorrect | Q 18/30

Q : A body moving with velocity v has momentum p and K.E numerically equal. The value of v is:

A $1m\ s^{-1}$

B $2m\ s^{-1}$

C $3m\ s^{-1}$

D $0.5m\ s^{-1}$

MDCAT 2020

Correct

Unattempted

Incorrect

Q 19/30

Q : A light body A and heavy body B have equal momentum then KE of A:

A Is equal to B

B Is Greater than B

C Is less than that of B

D Is 0

MDCAT 2020

Correct | Unattempted | Incorrect | Q 20/30

Q : The engine of an inter-city train travelling at 50 ms^{-1} delivers powers of 2 MW what is force exerted by engine:

A $4x10^4N$

B $1x10^5N$

C $4x10^7N$

D $1x10^8N$

MDCAT 2020

Correct

Unattempted

Incorrect

Q 21/30

Q : For constant force, the shape of the graph between power and velocity will be:

A A circle

B A hyperbola

C A parabola

D A straight line

MDCAT 2020

Correct | Unattempted | Incorrect | Q 22/30

Q : The value of Power of 100 W bulb in erg/sec is

A 10^7 erg/sec

B 10^9 erg/sec

C 10^{-9} erg/sec

D 10^6 erg/sec

MDCAT 2020

Correct

Unattempted

Incorrect

Q 23/30

Q : Which of the following is non-conservative force?

A Gravitational force

B Frictional force

C Elastic spring force

D Electric force

MDCAT 2020

Correct

Unattempted

Incorrect

Q 24/30

Q : Work done will be zero if angle between Force and displacement is:

A 0^o

B 60^o

C 270^o

D 360^o

MDCAT 2020

Correct | Unattempted

Incorrect | Q 25/30

Q : If power of 1 kW is maintained for 1 sec than work done is:

A 10^5 J

B 10^3 J

C 10^{-6} J

D 3.6 MJ

MDCAT 2020

Correct

Unattempted

Incorrect

Q 26/30

Q : A body consumes 2J K.E in 1 sec then power will be

A 2W

B 1W

C 0.5W

D 4W

MDCAT 2020

Correct

Unattempted

Incorrect

Q 27/30

Q : Work done due to motion of body while moving downward under the action of gravity is?

A Positive

B Negative

C Zero

D None

MDCAT 2020

Correct | Unattempted | Incorrect | Q 28/30

Q : If momentum remains constant, then

A $K.E \propto m$

B $K.E \propto \frac{1}{m}$

C $K.E \propto \sqrt{m}$

D $K.E \propto \frac{1}{\sqrt{m}}$

MDCAT 2020

Correct

Unattempted

Incorrect

Q 29/30

Q : The work done by a force on a body is calculated by multiplying the force by a quantity. Which quantity?

A the distance travelled in the direction of the force

B the distance travelled perpendicular to the direction of the force

C the speed in the direction perpendicular to the force

D the velocity in the direction of the force

MDCAT 2020

Correct

Unattempted

Incorrect

Q 30/30

Q : The power of the engine which accelerates a car of mass 800 kg to a speed of 72 km/hr from rest in 32 s is:

A 10 kW

B 15 kW

C 20 kW

D 5 kW