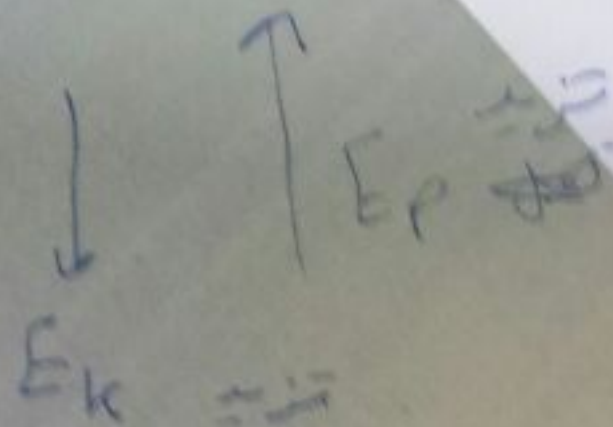


Question No. 14

As a vase is falling down from a high building, its:

سین علی سے نیچے گرتا ہے تو اس کا

- kinetic energy increases
- kinetic energy decreases
- potential energy increases
- potential and kinetic energies are always equal.



Question No. 17

The work done to vertically lift a ^m450-kg beam at a uniform speed a distance of 15 m/s.

الميزون الشغل
للرفع الرأس

سافة
سواء منتظلي عند

● 675000 J

● 6750 J

● 67500 J

● 675 J

E_p

$$W = F \cdot d$$

$$= m \cdot g \cdot h$$

$$= (450)(10)(15)$$

عند الرفع رأسياً

العمل = طانة الرفع

Question No. 1

A car in linear motion has initial speed = 20 m/s. If it travels for 20 seconds with acceleration = 2 m/s/s, the total distance it covers is:

- 400 m
- 100 m
- 200 m
- 800 m

→

$$v_f = v_i + at \quad \times$$

دوره ثابت است

$$d = v_i t + \frac{1}{2} at^2$$

$$= (20)(20) + \frac{1}{2}(2)(20)^2$$

$$= 400 + 400$$

$$= 800$$

Check your understanding

الميزان القوي
The work done by a 100-N force to move a box 2 m in the direction of the force is:
A) 0 J
B) 100 N.m
C) 200 J.m
D) 200 J

$$W = F \cdot d = (100)(2) = 200$$

The work done by a 100-N force to move a box 2 m in a direction making 60° with the force is:
A) 0 J
B) 100 N.m
C) 200 J.m
D) 200 J

$$W = F \cdot d \cdot \cos \theta = (100)(2)(\cos 60) = 100$$

عزنا
When raising loads upward, if the mass is doubled, the work done will be:
A) the same
B) doubled
C) halved
D) quadrupled (four times)

$$E_p = mgh$$

عزنا
When raising loads upward, if the mass is doubled and the height is halved, the work done will be:
A) the same
B) doubled
C) halved
D) quadrupled (four times)

$$E_p = mgh$$

الميزان القوي
The power of a lever used to raise a 50-kg load a 10-m height in 5 s is:
A) 2 kW
B) 5 kW
C) 1 kW
D) 0.5 kW

$$P = \frac{W}{t} = \frac{F \cdot d}{t} = \frac{mgd}{t} = \frac{(50)(10)}{5} = 1000 \text{ watt} \times 10^{-3} = 1 \text{ kW}$$

The mecha
due to its
structure

There are

- Poter
- Kine

Question No. 17

The work done to vertically lift a 450-kg beam at a uniform speed a distance of 15 m

في الارتفاع

$$W_{\text{done}} = mgh$$
$$= (450)(10)(15)$$

- 675000 J
- 6750 J
- 67500 J
- 675 J

The human body average temperature is 37°C . What is it in $^{\circ}\text{F}$?

- 73.1 $^{\circ}\text{F}$
- 82.7 $^{\circ}\text{F}$
- 65.5 $^{\circ}\text{F}$
- 98.6 $^{\circ}\text{F}$

$$F = \frac{9}{5} C + 32$$

$$= \frac{9}{5} \times 37 + 32$$

$$=$$

Question No. 17

A work of 50 kJ is done to vertically lift a beam at a uniform speed a distance of 25 m. The weight of the beam is.

العمل المنجز 50 كيلوجول لرفع عتلة بسرعة منتظمة مسافة 25 متر. الوزن العتلة.

- 2000 N
- 200 N
- 50 N
- 500 N

$$E_p = m g h$$

$$m = \frac{E_p}{g h} = \frac{50 \times 10^3}{(25)(10)}$$

=

العمل المنجز

kJ

الم

J

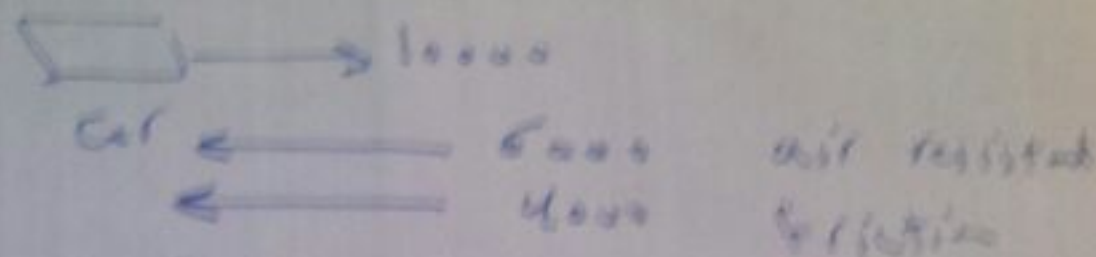
Question No. 9



For a moving car, if the forward force of its engine is 10000 N, air resistance on it is 5000 N, and the force of friction on it is 5000 N, the car will

السيارة التي تتحرك للأمام بقوة محركها 10000 نيوتن، ومقاومة الهواء عليها 5000 نيوتن، وقوة الاحتكاك عليها 5000 نيوتن، فإن السيارة ست

- have zero acceleration
- have changing acceleration
- slow down
- accelerate forward



$$(10000 - 4000) = 6000$$

$$6000 - 6000 = 0$$

$$= 0$$

Question No. 23

In the Fahrenheit temperature scale, the absolute zero (0 K) is approximately at.
في مقياس فهرنهايت، الصفر المطلق تقريباً عند

- 273 °F
- 0 °F
- 460 °F
- 273 °F

$$0 K = -273 C$$

$$= \frac{9}{5} C + 32$$

$$= -459.4$$

Question No. 7

You applied a horizontal force of 200 N to push a level table but the table remained at rest. The static friction force is

بہاؤ ۲۰۰ نیوٹن کے برابر ہے اور میز ساکن رہا۔ اس لیے اسٹیٹک فریکشن فورس ۲۰۰ نیوٹن ہے۔

- 20 kg
- 200 kg
- 200 N
- 20 N

Question No. 13

A large boulder at rest on top of a hill possesses

سنگ بزرگ
توپ
سنگ
پهلو

- potential energy طاقه پوتنسیال
- both potential and kinetic energy
- kinetic energy
- no energy

Question No. 4

If an object is not in free fall, before it reaches terminal speed, its acceleration is:

فتاویٰ کے متناسب وصول قبل سقوط کی لیے ہم لو

- ^{من اتک} less than g
- equal to g
- more than g
- zero

Question No. 2

Assume that you were driving with a constant speed of exactly 120 km/h for 5 minutes. During this time your instantaneous speed is

- 60 km/h
- 100 km/h
- 120 km/h
- 120 m/s

Constant speed = instantaneous speed

Question No. 25

One kilocalorie is the amount of heat that increases the temperature of 1 kg of water by:

- 273 K
- 10 K
- 1 °C
- 32 °F

۱ کالری

۱ کیلوگرم

۱ درجه

سلسیوس

۱ کالری

Question No. 13

A large boulder at rest on top of a hill possesses

سکین بیلوڈا کبیر
مئل

- طائے ریش
- potential energy
 - both potential and kinetic energy
 - kinetic energy
 - no energy

Question No. 9

"If no net force acts on an object, it will move at constant velocity" is a statement of.

جملہ سیرت ثابتہ سے متعلق ہے۔
جب کوئی نیٹ فورس ایک اجسام پر نہیں لگتی تو وہ مستقل رفتار سے حرکت کرتا رہتا ہے۔

Pythagoras principle

Newton's first law

قانون نیوٹن اول

Newton's third law

Newton's second law

Question No. 2

An object is moving in straight line and decreases its speed uniformly from 40 m/s to 10 m/s within 10 seconds. Its deceleration is 3 m/s/s

- 1 m/s/s
- 0.5 m/s/s
- 3 m/s/s
- 2 m/s/s

So V_f of V_i t a

$$a = \frac{V_f - V_i}{t} = \frac{10 - 40}{10} = \frac{-30}{10}$$

$a = -3$

Question No. 19

A 400-kg concrete beam is to be raised 30 m in 30 s. How many kilowatts of power are needed to do the job?

عزمت اسمنت
متر

سکند

کیلو واٹ
قدرت

- 3 kW
- 1 kW
- 2 kW
- 4 kW

$$P = \frac{W}{t} = \frac{(400)(10)(30)}{30}$$
$$= 4000 \text{ watt}$$
$$= 4000 \times 10^{-3} \text{ kW}$$
$$= 4 \text{ kW}$$

Question No. 7

If a man pushes a 100 kg box with a 100 N force on a level floor and the box does not move, the force of friction between the box and the floor is

يقدم رجل قوة 100 نيوتن على صندوق كتلته 100 كيلوجرام على أرض مسطحة ولا يتحرك الصندوق، فإن قوة الاحتكاك بين الصندوق والأرض هي

- 200 N
- 100 N
- 0 N
- 50 N



Question No. 16

Power is defined as the:

معرّف قَدْر

- force per unit time
- force \times distance
- energy \times time
- rate of doing work

سرعۃ بنیّ شغل

Question No. 10

A force of 1 N is the same as:

قوة

1 نيوتن

متر مربع

1 kg m s

1 kg s/m

1 kg m/s

1 kg m/s/s

$$F = m a$$
$$= \text{kg m/s}^2$$

Question No. 17

The work done by a worker to lift 100 N of bricks to a height of 3 m is:

رفع 100 نيوتن الطوب إلى الارتفاع

$$E_p = mgh$$
$$= (100)(3)$$
$$= 300$$

- 100 J
- 300 J
- 400 J
- 200 J

Question No. 3

زناً

An object is thrown vertically upward. Its speed at the maximum height is:

السرعة في أقصى الارتفاع عند لحظة توقفه

- > zero
- zero
- maximum
- < zero

Question No. 6

A man has a mass of 75 kg on Earth. His mass on the Moon is:

- $M = 12.5 \text{ kg}$
- $M > 75 \text{ kg}$
- $M = 75 \text{ kg}$
- $M < 75 \text{ kg}$

$$m_{\text{earth}} = m_{\text{moon}}$$

$$\text{Weight}_{\text{earth}} = 6 \text{ Weight}_{\text{moon}}$$

Question No. 13

کتاب کی ب طاقت 5 ج (نسبتاً زمین سے)۔

Table has a potential energy of 5 J (relative to the ground). The table's height is:

بائیں طاقت 5 ج (نسبتاً زمین سے)۔

- 1.5 m
- 0.3 m
- 1 m
- 0.5 m

$$E_p = m \cdot g \cdot h$$

$$h = \frac{E_p}{mg} = \frac{5}{(0.5)(10)}$$

Question No. 7

Two workers push in the same direction on a box against a frictional force. One pushes with a force of 500 N, the other with a force of 600 N. If the net force is 400 N, the friction force is:

- التقديرات
- 500 N
 - 700 N
 - 300 N
 - 400 N

ف1
ف2

في نفس الاتجاه
والاخر

نفس الاتجاه

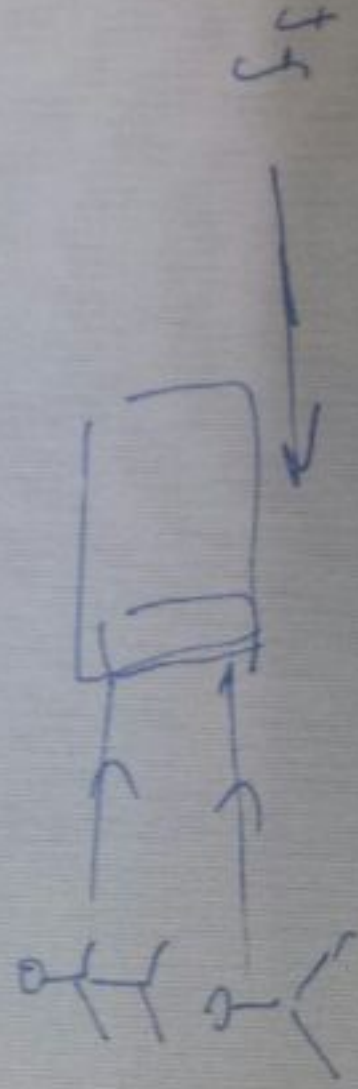
$$\text{Same direction } F_3 = 600 + 500 = 1100 \text{ N}$$

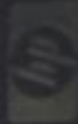
$$F_{\text{net}} = F - f_f$$

$$400 = 1100 - f_f$$

$$1100 - 400 = f_f$$

$$= 700$$





Question No. 2

A car in linear motion with acceleration = 2 m/s/s and initial speed = 20 m/s reaches a final speed = 30 m/s after going a distance of _____

سياره خطی

v_f

v_i

a

$$v_f^2 - v_i^2 = 2ad$$

$$d = \frac{v_f^2 - v_i^2}{2a}$$

$$= \frac{(30)^2 - (20)^2}{(2)(2)}$$

$$= 125 \text{ m}$$

- 500 m
- 250 m
- 100 m
- 125 m

Question No. 24

How much heat Q must be absorbed by 10 kg of steel (specific heat = $0.115 \text{ kcal/kg}\cdot^\circ\text{C}$) to heat it from zero to 150°C ?

م
س
C

حرارة مئوية

- 173 kcal
- 71 kcal
- 107 kcal
- 751 kcal

$$\begin{aligned} Q &= mc\Delta T \\ &= (10)(0.115)(150 - 0) \\ &= 172.5 \text{ kcal} \\ &= 173 \end{aligned}$$

Question No. 1

An object travels in straight line and increases its speed uniformly from 80 km/h to 120 km/h . Its average speed is

- 250 km/h
- 200 km/h
- 100 km/h
- 150 km/h

$$V_{av} = \frac{V_f + V_i}{2} = \frac{80 + 120}{2}$$

Question No. 14

$$R = 0$$

With no air resistance and no friction, a swinging pendulum would

- swing only 10 times
- swing forever
- swing for short time
- swing just once

no external force
no external force

Question No. 7

If a man pushes a 100-kg box on a level floor and the box moves with constant velocity, the push force on the box is: (given: coefficient of kinetic friction $\mu = 0.2$)

اقتدى معادل قوت الاحتكاك الحركي $\mu = 0.2$ $f_f = \mu N$ $N = mg = 100 \times 10 = 1000$ $f_f = 0.2 \times 1000 = 200$ \therefore القوة المطلوبة هي 200 N

- 100 N
- 50 N
- 1000 N
- 200 N

$$f_f = \mu N$$

قوة الاحتكاك الحركي \leftarrow $f_f = \mu N$ \rightarrow قوة الوزن

معامل الاحتكاك $\mu = 0.2$ $N = mg = 100 \times 10 = 1000$

$$= (0.2) (100 \times 10)$$

Question No. 14

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With no air resistance and no friction, a swinging pendulum would:

- swing only 10 times
- swing forever
- swing for short time
- swing just once

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- 100 N
- 50 N
- 1000 N
- 200 N

$$f_f = \mu N$$

قوة الاحتكاك الحركي $\mu = 0.2$ $N = mg = 100 \times 10 = 1000$ $f_f = 0.2 \times 1000 = 200$ \therefore القوة المطلوبة هي 200 N

Question No. 24

4850 cal of heat is equivalent to:

- 33.5 kJ
- 31.7 kJ
- 20.3 kJ
- 11.2 kJ

$$\text{cal} \times 4.19 \rightarrow \text{kJ} \times 10^{-3} \rightarrow \text{kJ}$$

shift 8 40

سرکتا بصر
 صنبو
 وکتب ارتگر
 ستر

Question No. 19

How long would it take a 1500 W motor to raise a 100-kg mass to a height of 15 m?

- 30 s
- 40 s
- 10 s
- 20 s

$P = \frac{W}{t} \rightarrow W = F \cdot d = \boxed{mgd}$

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

$t = \frac{mgd}{P} = \frac{(100)(10)(15)}{1500} = 10$

Question No. 18

Work is done on an object if the object is affected by:

- force and displacement
- medium force without displacement
- large force without displacement
- small force without displacement

کام کیا جانے کے لیے اس پر اثر کرنے کی ضرورت ہے۔

اگر

بے اثر ہوگا

Question No. 10

If a net force of 100 N causes a crate to accelerate at 0.8 m/s/s, the crate's mass is:

القوة الصافية

تسبب

تسبب

0.8

عربي

- 125 kg
- 80 kg
- 10 kg
- 50 kg

$$F = ma$$

$$100 = m \cdot 0.8$$

11

Question No. 11

If there is a net force acting on a moving object, the object must be:

کل توڑتی قوتی جسے چال کر

صبر متحرک

اکبر

کلوت کیے

small

large

accelerating

متیہا سرع

moving with constant velocity

$$f = 0$$

Question No. 5

قوة الاحتكاك دائماً تأتي في اتجاه
The friction force always acts in a direction:

- same as the direction of weight
- normal to the surface
- opposite to the direction of motion
عكس الحركة
- same as the direction of motion

Question No. 14

As a rock is falling down from a hill its

- potential energy increases
- potential energy decreases
- potential and kinetic energies are always equal
- kinetic energy decreases

↓
Kinetic Energy increases

Question No. 4

An object is thrown vertically upward. As it is going upward the speed is:

- zero
- constant
- increasing
- decreasing

Handwritten notes in Urdu: "تو" (then), "تو" (then), "تو" (then), "تو" (then)

Handwritten note in Urdu: "تو" (then)

Question No. 14

Before reaching the ground, an apple falling down from a tree has

لدى الشجرة من الأضغ سقطت تقايف للأرض (الطوبى) قبل

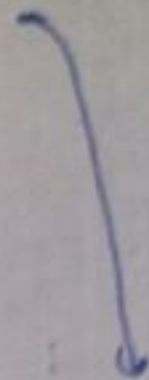
both potential and kinetic energy

no energy

potential energy only

kinetic energy only

~~PK~~



Question No. 13

Newton's third law states that for a force (1) applied from object A on object B, there is a force (2) applied from B on A such that

forces (1) and (2) are perpendicular

forces (1) and (2) are equal in magnitude

force (1) is less than force (2)

force (1) is more than force (2)

ان متوازيان

بکجه

شکل

عمودتہ

عکس

مساوی

کوچتر

متساوی

An object that has big inertia must have:

مقدار قوتِ انرژیا کے لیے (بڑی) کمیت

کمیت بڑی

big mass

small mass

big area

big volume

Question No. 9

If no external forces act on a moving object, it will be

بے بیرونی قوتوں کے تحت ایک متحرک جسم کی حالت ہوگی

increasing acceleration

zero acceleration

zero velocity

increasing velocity



The weight of a 20-kg brick is nearly:

- 200 kg
- 200 N
- 20 N
- 20 kg

$$\begin{aligned} W &= mg \\ &= (20)(10) \\ &= 200 \text{ N} \end{aligned}$$

Question No. 16

Gravitational potential energy of an object is due to its:

سیے کی وجہ سے
مکانہ وضع کی وجہ سے

- velocity
- temperature
- position وضیف
- acceleration

Question No. 4

The acceleration of a freely falling object is:

ہم نسبتاً سقوطی جسم تسارع

$$R = 0$$

تسارع چارزنی

$$a = g$$

the acceleration due to gravity

- greater than the acceleration due to gravity (g)
- zero $R = \text{weight}$ وزن کبیر
- less than the acceleration due to gravity

Question No. 3

After a falling object reaches terminal speed, its acceleration is:

پس از رسیدن به سرعت \leftarrow شتاب

- positive
- zero
- unknown
- negative

If you pushed a wall and it did not move, we can say that there is

no work done on the wall

A

- work done on your muscles
- no force acted on your muscles
- work done on the wall
- no force acted on the wall

Question No. 7

Question No. 4

If an object is in free fall, the distance it covers every successive (متتاليه) second

تزداد
بشكل متساو

كل المسؤله الما

ثانيا

- is zero
- keeps decreasing
- remains constant
- keeps increasing

تزداد

D

Question No. 10

According to Newton's second law ($F=ma$), if m is kept constant, then:

اذا تأثيره لو لقد بقيت غير متغيرة مبقياً

الاستنتاج ← مباين مبايناً

- F is directly proportional to the acceleration a
- $F = a/m$
- $a = m$
- F is inversely proportional to the acceleration a

Question No. 23

Temperature is a measure of the _____ an object:
دستبردگی ص ص ص ص

color of

hotness or coldness of
سردی

area of

volume of

Question No. 18

A constant force F is making an angle 25° with the direction of motion of an object. If the distance moved is 100 m and the work done on the object is 1820 J, the force F is:

- Ⓐ 20 N
- Ⓑ 10 N
- Ⓒ 40 N
- Ⓓ 30 N

$$W = F d \cos \theta$$

$$F = \frac{W}{d \cos \theta}$$

$$= \frac{1820}{(100) \cos(25)}$$

Question No. 16

Energy is defined as the:

تعريف الطاقة

- mass x speed
- ability to do work شأن بترك عمل كمد
- mass x acceleration
- speed x time

QUESTION: A car is being pushed forward with an acceleration of 2 m/s². It starts from rest and travels a distance of 225 m. This means that its initial speed was:

Options: a. 10 m/s, b. 15 m/s, c. 1 m/s, d. 30 m/s

- 10 m/s
15 m/s
1 m/s
30 m/s

4

d = 225
a = 2
vf = 30
vi = ?

vf^2 - vi^2 = 2ad

(30)^2 - vi^2 = 2(225)(2)

900 - vi^2 = 900

900 - 900 = vi^2

0 = vi

Question No. 23

Converting 40°F to Celsius gives:

- 50 °C
- 40 °C
- 60 °C
- 30 °C

$$\begin{aligned} C &= \frac{5}{9} (F - 32) \\ &= \frac{5}{9} (-40 - 32) \\ &= -40 \end{aligned}$$

Same readings

when in

Question No. 15

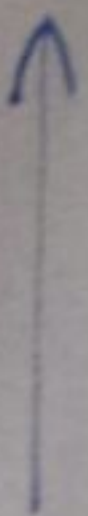
Circle the correct answer

If the velocity of an object doubles, its kinetic energy.

- does not change
- quadruples (becomes four times)
- doubles
- triples (becomes three times)

$$E_k = \frac{1}{2} m v^2$$

$$4 = (2)^2$$



Question No. 14

As a stone that is thrown vertically upward goes up, its:

يصل لأعلى
رغم الوقت تسير

- potential and kinetic energies are always equal.
- kinetic energy increases
- potential energy decreases
- potential energy increases

Question No. 4

After a falling object reaches terminal speed, its speed is

سرگت مشابہت لصل بم سقوط بعد

- decreasing
- zero
- increasing
- constant

Question No. 8

The physical quantity that measures inertia is:

المقدّر تيسر الكتلة الضخامة
الذات

- length
- area
- volume
- mass

Question No. 7

9

طاقة الوضع القمر اعنفان الجاذبية الأرضية

The acceleration due to gravity of the Earth is 6 times that of the Moon. If the potential energy of the same object placed at the same height on the Moon is E_{pm} and on the Earth is E_{pe} , they are then related as:

الارتفاع نفس الارتفاع

- $E_{pe} = 0.6E_{pm}$
- $E_{pe} = 6E_{pm}$
- $E_{pe} = (1/6)E_{pm}$
- $E_{pe} = E_{pm}$

E_{pearth}

$E_{p moon}$

طاقة الوضع الأرضية

طاقة الوضع من القمر

$$m_e g_e h_e$$

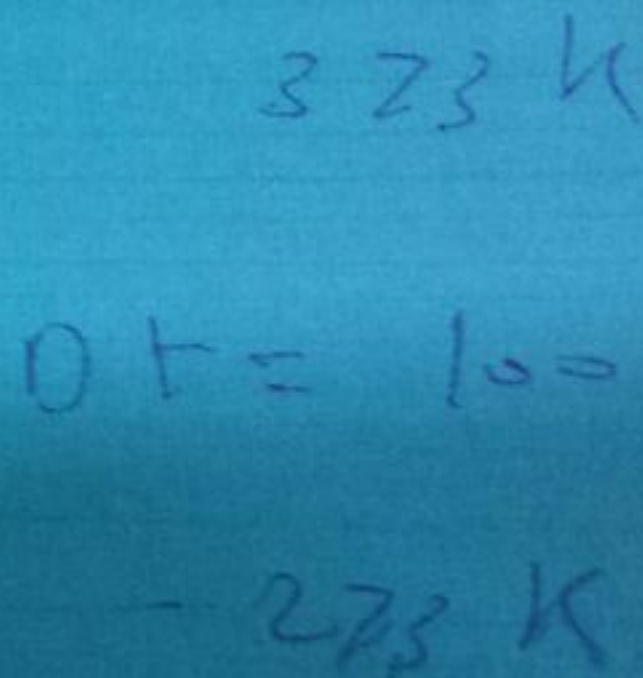
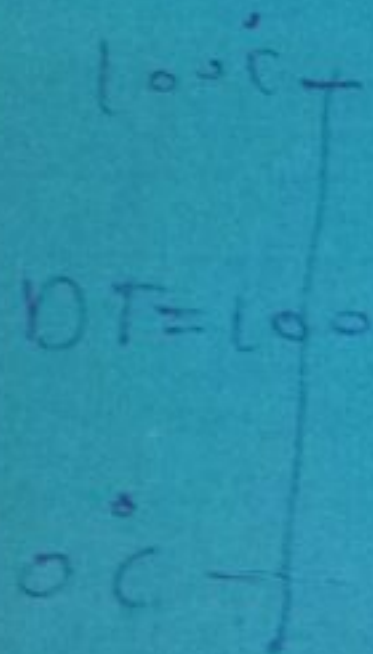
=

$$6 m_m g_m h_m$$

Question No. 23

درجه حرارت و سلسله درجه حرارت
Temperature scales that give the same temperature difference ΔT are the:

- Kelvin and Celsius
- Celsius and Joule
- Fahrenheit and Kelvin
- Celsius and Fahrenheit



Question No. 19

The power developed to raise a 1000-kg steel wrecking ball to a height of 20 m in 10 s is

الطاقة المطبقة لرفع الكرة

الارتفاع h t
الوقت

- 50 kW
- 30 kW
- 20 kW
- 40 kW

$$P = \frac{m \cdot g \cdot d}{t} = \frac{(1000)(10)(20)}{10}$$

$$= 20000 \text{ W}$$

$$= 20 \text{ kW}$$

Question No. 7

9

طاقة الوضع القمر اعنفان الجاذبية الأرضية

The acceleration due to gravity of the Earth is 6 times that of the Moon. If the potential energy of the same object placed at the same height on the Moon is E_{pm} and on the Earth is E_{pe} , they are then related as:

الارتفاع نفس الارتفاع

- $E_{pe} = 0.6E_{pm}$
- $E_{pe} = 6E_{pm}$
- $E_{pe} = (1/6)E_{pm}$
- $E_{pe} = E_{pm}$

E_{pearth}

$E_{p moon}$

طاقة الوضع الأرضية

طاقة الوضع من القمر

$$m_e g_e h_e$$

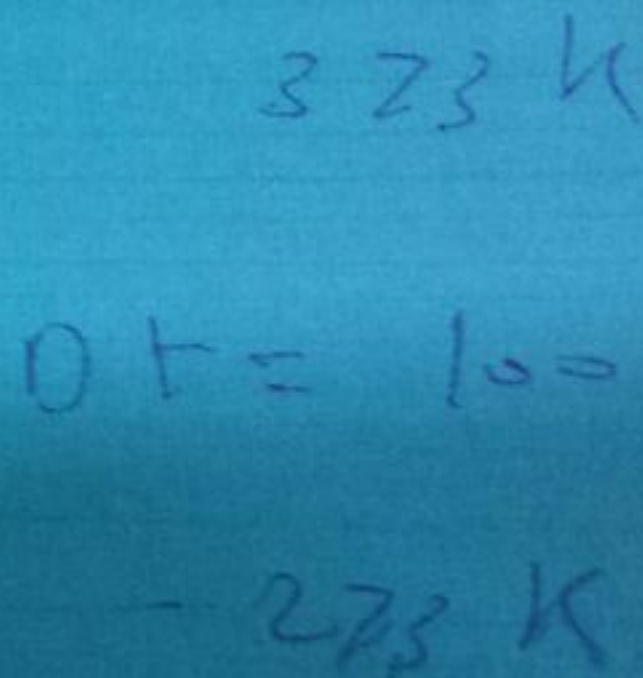
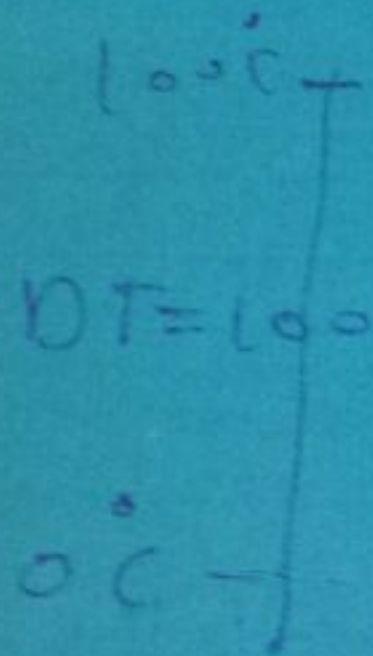
=

$$6 m_m g_m h_m$$

Question No. 23

درجه حرارت و سلسله درجه حرارت
Temperature scales that give the same temperature difference ΔT are the:

- Kelvin and Celsius
- Celsius and Joule
- Fahrenheit and Kelvin
- Celsius and Fahrenheit



Question No. 20

In the Celsius temperature scale, the absolute zero is at

3. absolote zero سيفر الصفر

273 °C

-273 °C

459 °C

0 °C

ok → C

$$C = K - 273$$

$$= 0 - 273$$

$$= -273$$

Question No. 16

The energy units are.....

رصد = الطاقه

- Kilogram
- Pound
- Kilometer
- Kilocalories

Question No. 1

An object travels in straight line and decreases its speed uniformly from 40 m/s to a full stop within 10 seconds. Its deceleration is:

- 2 m/s/s
- 4 m/s/s
- 1 m/s/s
- 3 m/s/s

$$a = \frac{v_f - v_i}{t} = \frac{0 - 40}{10} = -\frac{40}{10} = -4$$

Question No. 13

A 2-kg laptop on a table of height 75 cm has a potential energy of (relative to the ground):

- 15 J
- 150 J
- 1.5 J
- 10 J

$$\begin{aligned} E_p &= mgh \\ &= (2)(10)(75) \end{aligned}$$

طاولة من
الارتفاع h
75 cm

لاسيكس

Question No. 5

Kinetic friction is always

عادة اقل من الاحتكاك

the maximum static friction.

اقل من الاحتكاك الساكن

- less than
- more than
- half
- equal to

Question No. 10

If the net force on an 100-kg crate is 50 N , its acceleration is:

- 1 m/s/s
- 0.5 m/s/s
- 5 m/s/s
- 2 m/s/s

$$F = m a$$
$$a = \frac{F}{m} = \frac{50}{100}$$

$$= 0.5$$

Question No. 9

"A moving object likes to keep its state of motion" is the meaning of

acceleration

inertia

velocity

force

حرکتوں کا

حفاظت کا قانون

ذاتی حرکت

حفاظت

مستقلی

Question No. 21

In the Celsius temperature scale, water boils at:

نقطہٴ ابھرنے کے لیے درجہ حرارت کس قدر ہوتا ہے؟

212 °C

273 °C

373 °C

100 °C

Question No. 5

What is the unit of the coefficient of friction?

कोई इकाई

कोई इकाई

has no units

कोई इकाई

meter

joule

newton

Question No. 4

If a stone drops in a free fall from the edge of a mountain, the distance it covers after 3 seconds is (use $g = 10 \text{ m/s}^2$)
من ارتفاع جبل، سقط حجر في سقوط حر من حافة جبل، المسافة التي يقطعها بعد 3 ثوانٍ هي (استخدم $g = 10 \text{ م/ث}^2$)

- Ⓐ 20 m
- Ⓑ 45 m
- Ⓒ 120 m
- Ⓓ 80 m

$$d = \frac{1}{2}gt^2$$
$$= \frac{1}{2}(10)(3)^2$$

Question No. 16

Joule/second is a unit of.

دقيق

- Energy
- Work
- Temperature
- Power

Question No. 15

At what speed does a 20-N weight have a kinetic energy of 100 J?

کرده آن عنصر

سرعت آن

E_k

- 10 m/s
- 20 m/s
- 30 m/s
- 40 m/s

$$E_k = \frac{1}{2} m v^2$$

$$v^2 = \frac{2 E_k}{m}$$

$$v = \sqrt{\frac{2 E_k}{m}}$$

$$= \sqrt{\frac{2(100)}{2}}$$

$$= 10$$

$$m = \frac{20}{10}$$

$$= 2 \text{ kg}$$

Question No. 15

A ^m50-g bullet is fired from a gun with 4-kJ kinetic energy. Its velocity is:

- 500 m/s
- 300 m/s
- 400 m/s
- 200 m/s

$$E_k = \frac{1}{2} m v^2$$

$$v^2 = \frac{2 E_k}{m}$$

$$v = \sqrt{\frac{2 E_k}{m}}$$

$$= \sqrt{\frac{2 (4 \times 10^3)}{50 \times 10^{-3}}}$$

Question No. 16

The kinetic energy of an object is due to its:

طائے حرکت
حرکت
مکان

- area
- motion
- colour
- position

انرژی

Question No. 21

in the Kelvin temperature scale, water boils at:

كلفن

سلسیوس

نقطہ ۱۰۰

- 212 K
- 100 K
- 273 K
- 373 K

Question No. 22

In the Kelvin temperature scale, water freezes at:

32 K
273 K
212 K
0 K

- 32 K
- 273 K
- 212 K
- 0 K

0°C

$$K = C + 273$$

$$= 0 + 273$$

$$= 273$$

Question No. 12

When a man pushes on a wall with force 100 N, the wall pushes back on him with force of magnitude:

لذلك يدفع الی نفة بقوہ صانف ینفج امل کثما

- 100 N
- 50 N
- 200 N
- 0 N

Question No. 25

When we heat a block of iron, the iron atoms:

ذرات اکریر صوبہ فقط ستن چیزا

- vibrate slower
- vibrate faster
- increase in number
- stop moving

جستارے

Question No. 12

When you fire a bullet (مطلقة) from a handgun, the recoil (الإرتداد) you feel is called the:

وهو يتجه عكسها

من صدره

سواء شعري

normal to the action

action

normal to the reaction

reaction

مرد فعل

Question No. 6

Friction on a non-moving object is called:

ایک صحیح غیر متحرک اصطلاح
استقامت

- static friction
- kinetic friction
- terminal friction
- dynamic friction

Question No. 13

A wrecking ball of mass 200 kg is raised 6 m above the ground. What is the potential energy of the ball?

- 120 kJ
- 0.12 kJ
- 12 kJ
- 1.2 kJ

$$\begin{aligned} E_p &= m g h \\ &= (200)(10)(6) \\ &= 12000 \\ &= 12 \text{ kJ} \end{aligned}$$

Question No. 17

A bullet is fired from a handgun with a force F_1 , the handgun recoils (ترتك) with a force F_2 . We can say that:

القوة التي أطلقت الرصاصة
والقوة التي ارتدت بها البندقية
متساويتان في المقدار
ولكن عكسيتان في الاتجاه

- F_1 and F_2 are equal and opposite
- F_1 and F_2 are equal and in the same direction
- F_1 and F_2 are equal and perpendicular
- F_1 and F_2 are not equal

Question No. 7

The friction force between two surfaces depends on

القوة الاحتكاكية

السطح

الضغط

أو السرعة

★ nature of the surfaces and the normal force

only the normal force

السطح

الضغط

السرعة

~~nature of the surfaces and their area~~

only nature of the surfaces

Question No. 25

In the Kelvin temperature scale, water boils at.

100 K

212 K

273 K

373 K

Question No. 23

Which of the following temperatures is NOT possible?

- A. 4500 °C
- B. -274 °F
- C. -200 °C
- D. -278 °C

Handwritten notes:
D) 4500°C
B) -274°F
C) -200°C
D) -278°C

Handwritten notes:
212
32

Question No. 11

تفترض

Two forces 10 N and 25 N act in opposite direction on an object which moved with an acceleration of 3 m/s/s.

قوتین

انجا معاكس

سوره اكبر

بیت

- 3 kg
- 5 kg
- 8 kg
- 12 kg

$$\text{net force} = 25 - 10 = 15 \text{ N}$$

$$m = \frac{F}{a} = \frac{15}{3} = 5$$