Question No. 30

For resistances that are connected in parallel, the equivalent resistance is:

- bigger than the biggest resistance
- less than the smallest resistance
- equal the smallest resistance
- equal the biggest resistance

في السلاسيد نصاً ..
المقاومة المكافئة في دائرة التوازي
أقل من باقي المقاومات

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Question No. 18

If a 20-N force applied on a 20-cm spring compresses it to 14 cm, a 30-N compressing force, applied on it within its elasticity range, will compress it by

- 15 cm
- 13 cm
- 9 cm
- 17 cm

أولاً رشيد منطلع الـ K :

$$1: K = \frac{F}{\Delta L} = \frac{20}{20-14} = 3.33\ N/cm$$

$$2: \Delta L = \frac{F}{K} = \frac{30}{3.33} = 9.01\ cm$$

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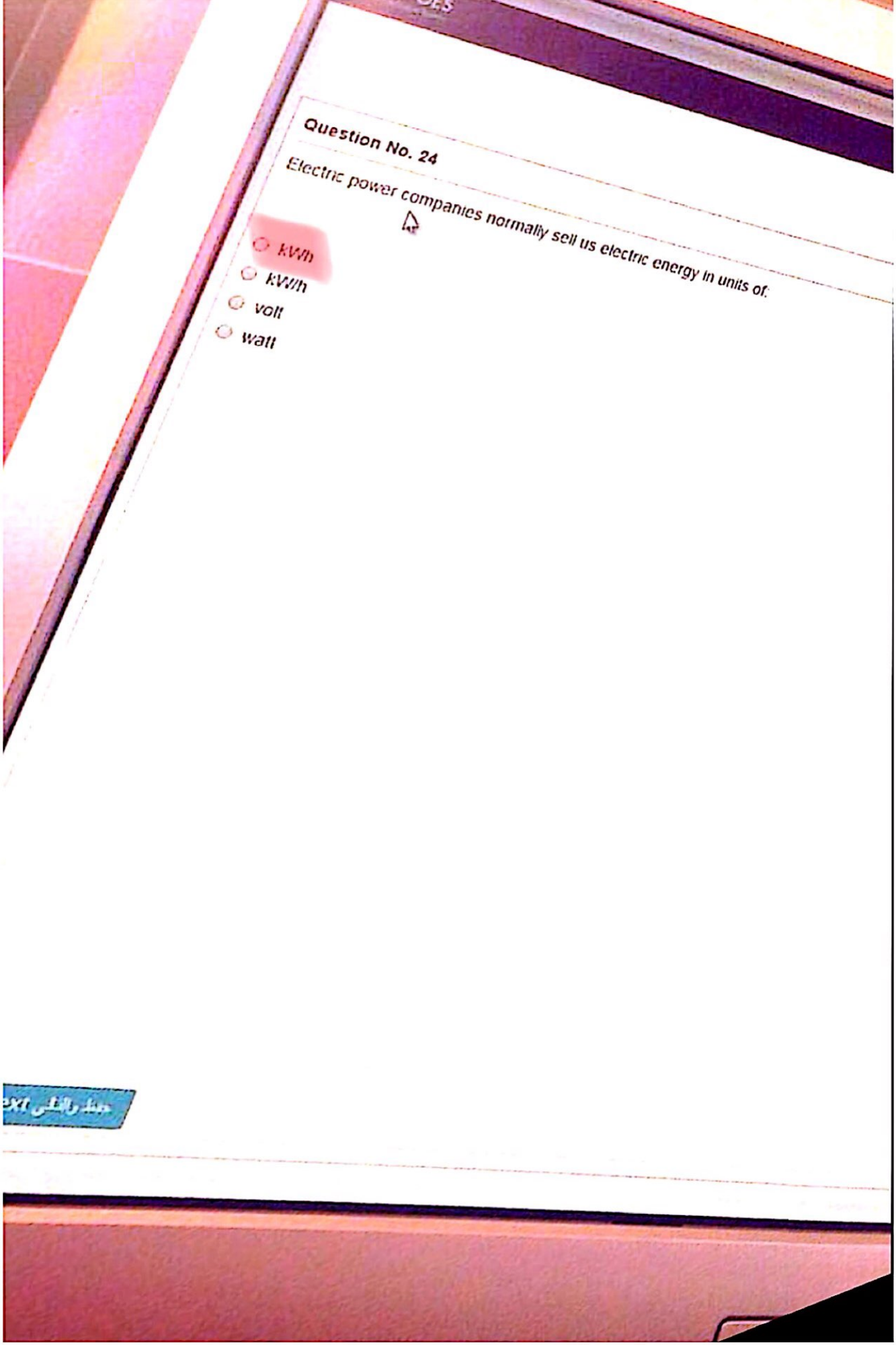

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Question No. 31

Light that reflects off a convex mirror always:

- converges
- scatters in all directions
- diverges
- meets at the focus

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Question No. 17

5-kg of a liquid absorb an amount of heat Q = 200 kcal, raising its temperature by $\Delta T = 40°C$. The specific heat c of this liquid is:

$$Q = cm\,\Delta t$$

- c = 0.3 kcal/kg.°C
- c = 0.1 kcal/kg.°C
- c = 1 kcal/kg.°C
- c = 0.5 kcal/kg.°C

$$c = \frac{Q}{m\Delta t}$$

$$c = \frac{200}{5 \times 40} = 1\ \text{Kcal/kg.°C}$$

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Question No. 4

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

- more than g
- equal to g
- less than g
- zero

Save & Next

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Question No. 13

In the Celsius temperature scale, water freezes at

- 32 °C
- 273 °C
- 0 °C
- 212 °C

Save & Next

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Question No. 10

A freight elevator with operator weighs 4000 N. If it is raised to a height of 20 m in 10 s, how much power is developed?

- 80 kW
- 8 kW
- 200 W
- 20 W

$$\text{power} = \frac{W}{t} = \frac{Fs}{t} = \frac{4000 \times 20}{10}$$

$$= 8000\,W = 8\,KW$$

Save & Next

Question No. 16

4850 cal of heat is equivalent to:

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

بالآلة الحاسبة :

shift + 8 → 4 0

= 20301.13 J

= 20.3 KJ

Save & Next حفظ والتالي

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Question No. 6

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
- 1.2 kJ
- 12 kJ

$PE = mgh$

$= 200 \times 10 \times 6$

$= 12000\ J$

$= 12\ kJ$

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Question No. 2

Two forces are: (F1 = 100 N, up) & (F2 = 100 N, right). The magnitude of the resultant (R) is nearly:

$$R = \sqrt{100^2+100^2}$$
$$= 141\ N$$

- 100 N
- 0 N
- 140 N
- 200 N

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Question No. 1

Example of a scalar is:

- time
- acceleration
- velocity
- force

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Question No. 11

In the Celsius temperature scale, water boils at:

- (•) 273 °C
- ( ) 100 °C
- ( ) 373 °C
- ( ) 212 °C

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Question No. 11

A temperature of 50 °F equals:

- 50 °C
- 10 °C
- 323 °C
- 223 °C

بـ الآلة الحاسبة :

shift 8 ⟶ 3 7

= 10c

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Question No. 12

In the Fahrenheit temperature scale, water freezes at:

- 273 °F
- 0 °F
- 212 °F
- 32 °F

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Question No. 13

A temperature of 300 K equals:

$T_K = T_C + 273$

- 27 °C
- 37 °C
- 512 °C
- 573 °C

$T_C = T_K - 273$

$= 300 - 273$

$= 27\ C$

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Question No. 12

In the Kelvin temperature scale, water freezes at:

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

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Question No. 8

Gravitational potential energy of an object is due to its:

- acceleration
- position
- velocity
- temperature

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Question No. 38

In the same medium, radio waves and light waves have the same:

- speed
- wavelength
- frequency
- color

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Question No. 20

When a deforming force acts on an inelastic (not elastic) object and then removed, the object:

- gets more mass
- is deformed for a short time
- does not change
- does not return to its original shape

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Question No. 10

A 750-N load is lifted a vertical distance of 20 m in 10 s. What power is developed?

$$P = \frac{W}{t} = \frac{Fs}{t} = \frac{750 \times 20}{10}$$

$$P = 1500W = 1.5KW$$

- (●) 1.5 kW
- ( ) 150 kW
- ( ) 1500 kW
- ( ) 15 kW

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Question No. 9

A cart carrying a 500-N box is pushed horizontally on a level ground by exerting a constant force of 200 N in the direction of motion. The work done by the weight of the box on the cart is

- 50 J
- 500 J
- 5000 J
- 0 J

لأن الزاوية 90
بين قوة الوزن لـ Box
وحركة التسوق

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Question No. 8

Joule/second is a unit of:

- Energy
- Work
- Power
- Temperature

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Question No. 19

If a 20-N force applied on a 20-cm spring extends it to 24 cm, a 30-N force, applied on it within its elasticity range, will extend it by:

هنا طالب قد ايش هذي القوه ↑ رح تخلي النابض يتمدد

- 6 cm
- 10 cm
- 22 cm
- 36 cm

20 N ⟶ 4 cm

30 N ⟶ 6 cm

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Question No. 18

If a 10-N force applied on a 20-cm spring compresses it to 18 cm, a 25-N compressing force, applied on it within its elasticity range, will compress it to:

$20\,cm \xrightarrow{10N} 18\,cm$

$20\,cm \xrightarrow{25N} 15\,cm$

- 15 cm
- 18 cm
- 20 cm
- 27 cm

طريقه أبسط :

10N نقصت 2cm ← معناه 5 نيوتن, ع تنقص 1cm

ال 25 فيها خمس خمسات ← حتنقص 5 cm

$20\,cm - 5\,cm = 15\,cm$

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Question No. 20

When a deforming force acts on an elastic object within its elastic range and then removed, the object

- returns back to its original shape
- does not return to its original shape
- gets more mass
- breaks down

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Question No. 31

Light that reflects off a concave mirror always:

مجمعة ← مقرق ←

- scatters in all directions
- meets at the focus
- diverges
- converges

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Question No. 22

$1 \times 10^{-3} C$

The repulsive force between two identical 1-mC charges separated by 300 m is:

$$F = K \frac{q_1 q_2}{r^2}$$

$$= 9 \times 10^{9} \frac{1 \times 10^{-3} \times 1 \times 10^{-3}}{300^2} = 0.1\ N$$

- 0.1 N
- 1 N
- 100 N
- 10 N

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Question No. 22

The electrostatic force between two charged objects with q1 = q2 = 1C and separated by a distance of 1 m is:

- 9 N
- 9 kN
- 9 GN
- 9 MN

$$\frac{9 \times 10^{9} \times 1}{1^{2}} = 9\,MN$$

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Question No. 29

Temperature is a measure of the _____ an object:

- hotness or coldness of
- area of
- volume of
- color of

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Question No. 24

A person pulls a box along level ground a distance of 45 m by exerting a constant force of 200 N at an angle of 30^0 with the ground. How much work does he do?

- 9000 J
- 4500 J
- 7794 J
- 9774 J

$W = F s \cos\theta$

$= 200 \times 45 \cos(30)$

$= 7794 J$

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Question No. 26

The power developed for doing a 140-kJ work in 7 s is:

140000J

- 20 kW
- 280 kW
- 280 W
- 20 W

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

$= \frac{140000}{7}$

$= 20000\ W$

$= 20\ KW$

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Question No. 25

If you did a work of 210 J to place a 7-kg box on the top of a shelf, the height of this shelf is

$PE = W$

$W = mgh$

$h = \frac{W}{mg}$

$h = \frac{210}{7 \times 10} = 3\,m$

- 4 m
- 2 m
- 3 m
- 1 m

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Question No. 21

The gravitational potential energy of an object is related to its mass is as follows

- The larger the mass the smaller the potential energy
- The larger the mass the larger the potential energy
- The potential energy does not depend on the mass
- The potential energy depends on the square of the mass

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Question No. 25

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

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

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Question No. 16

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

- accelerating
- large
- moving with constant velocity
- small

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Question No. 24

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:

5000J

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

$W = Fs$

$F = \frac{W}{s}$

$= \frac{5000}{25} = 200\,N$

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Question No. 29

A temperature of 300 K equals:

27°C

- 512 °F
- 17 °F
- 573 °F
- 81 °F

shift 8 → 1 7 بالآلة الحاسبة:

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Question No. 18

The physical quantity that measures inertia is:

- mass
- length
- volume
- area

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Question No. 21

A 0.5-kg book on a table has a potential energy of 5 J (relative to the ground). The table's height is:

$PE = mgh$

$h = \frac{PE}{mg}$

$h = \frac{5}{0.5 \times 10} = 1m$

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

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Question No. 23

The kinetic energy of an object is due to its:

- motion
- position
- area
- colour

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Question No. 18

A painter weighting 630 N climbs to a height of 5 m on a ladder. What is the increase in gravitational potential energy of the

- 31.5 J
- 3.15 kJ
- 31.5 kJ
- 3.15 J

$PE = mgh$

$= 630 \times 5$

$= 3150 J$

$= 3.1 KJ$

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Question No. 24

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?

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

$PE = W$

$PE = mgh = 400 \times 10 \times 30 = 120000\,J$

$P = \frac{W}{t} = \frac{120000}{30} = 4000 = 4\,kW$

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Question No. 14

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

- Newton's second law
- Newton's third law
- Newton's first law
- Pythagoras principle

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Which of the following cannot be a unit of heat

- Joule
- Calorie
- Watt
- BTU

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Physics_Sem

Question No. 20

If a 2-N force stretches a 30-cm spring by 1 cm, what is its new length under a 10-N stretching force?

- 25 cm
- 10 cm
- 35 cm
- 5 cm

10 ÷ 2 = 5

5 x 1 = 5

30 + 5 = 35

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Question No. 17

Fusion is the change of phase from

- solid to liquid
- liquid to gas
- gas to liquid
- liquid to solid

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Question No. 6

0.75m

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

$PE = mgh = 2 \times 10 \times 75 = 15J$

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

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If the weight density of a block of wood of dimensions 2 cm × 2 cm × 5 cm is 10 N / cm³, its mass is (use g = 10 m/s/s):

- 10 kg
- 20 kg
- 40 kg
- 30 kg

$$D_w = \frac{F_w}{V} = \frac{mg}{V}$$

$$m = \frac{D_w \times V}{g}$$

$$m = \frac{10 \times (2 \times 2 \times 5)}{10}$$

$$m = 20\ kg$$

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Question No. 12

The friction between two surfaces increases as:

- area between the surfaces increases.
- the normal force between the surfaces increases.
- the coefficient of friction decreases.
- the normal force between the surfaces decreases.

$F_f = \mu F_n$ ← تناسب طردي

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Question No. 40

Compared to the original object, its image in a plane mirror is:

- inverted
- larger
- smaller
- virtual

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Question No. 18

A substance should lose heat to change from

- solid to liquid
- gas to liquid
- solid to gas
- liquid to gas

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Question No. 35

Three identical lamps, each of resistance 9 Ω, are connected in parallel to a 9-V battery. The current passing through each lamp is:

$3 \times \frac{1}{9} = \frac{1}{3} \rightarrow \boxed{x=1} = 3\Omega$: أولاً نجيب المقاومة المكافئة

لقدرين نجيب التيار:

$I = \frac{V}{R}$

$I = \frac{9}{3} = 3A$

- ⅓ A
- 3 A
- 1 A
- ⅔ A

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Question No. 29

Coulomb's force between two charges q1 and q2 separated by a distance r is inversely proportional to:

- r^2
- q_2 only
- q_1 only
- q_1q_2

$$F = K \frac{q_1 q_2}{r^2}$$

متناسبين عكسياً

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HP LE1901w

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Question No. 3

When two vectors do not act in exactly the same or opposite direction, their resultant can be found using:

- Circle rule
- Volume rule
- Newton's first law
- Parallelogram rule

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Question No. 7

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:

- $E_{pE} = 0.6E_{pM}$
- $E_{pE} = 6E_{pM}$
- $E_{pE} = (1/6)E_{pM}$
- $E_{pE} = E_{pM}$

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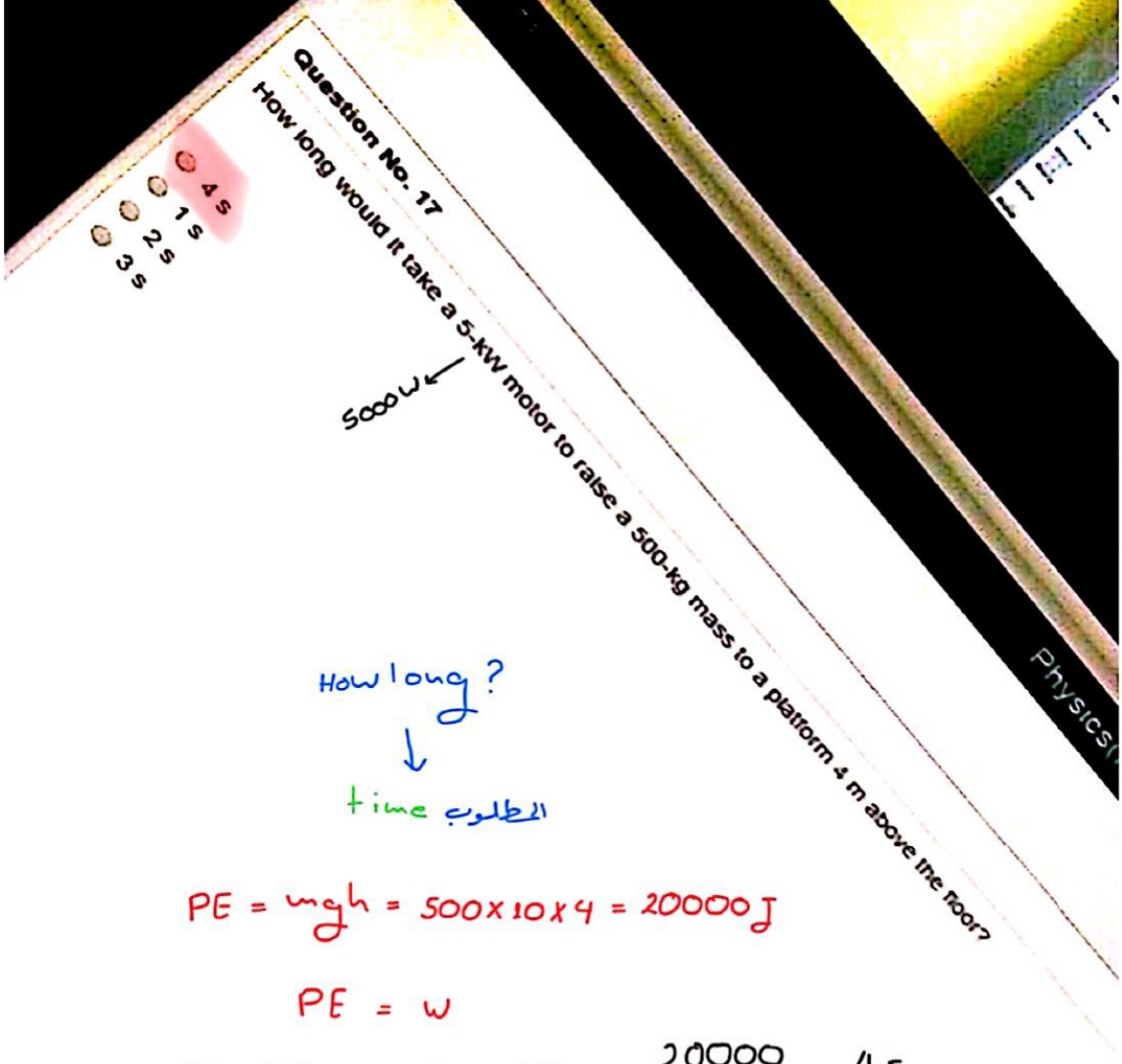

How long?

↓

time المطلوب

$PE = mgh = 500 \times 10 \times 4 = 20000\ J$

$PE = W$

$P = \frac{W}{t} \longrightarrow t = \frac{W}{P} = \frac{20000}{5000} = 4s$

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Question No. 19

A 12-N brick with dimensions 6 cm × 8 cm × 16 cm is placed on a table. The greatest stress it exerts on the table is when it is on the side with dimensions

- 6 cm × 8 cm
- all answers are correct
- 6 cm × 16 cm
- 8 cm × 16 cm

$$S = \frac{F}{A}$$

في حال طلب smallest

↓

نختار الأبعاد الأكبر

8cm X 16cm

في حال طلب greatest

↓

نختار الابعاد الاصغر

لان العلاقة عكسية

بين الضغط والمساحة

6cm X 8cm

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uestion No. 30

6800 cm
L
A

ind the resistance of a copper wire 68 m long with cross-sectional area of 6.8×10^{-3} cm^2 at 20 °C. The esistivity of copper is at 20 °C is 1.7×10^{-6} Ω cm.
ρ

17 Ω
0.17 Ω
170 Ω
1.7 Ω

$$R = \frac{\rho L}{A} = \frac{1.7\times10^{-6}\times6800}{6.8\times10^{-3}} = 1.7\,\Omega$$

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Question No. 22

The repulsive electrostatic force is always:

$- \times - = +$

$+ \times + = +$

- negative
- positive
- small
- big

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Question No. 10

The power of an engine that developed to do a work of 450 kJ in 30 seconds is:

$\downarrow$

$450000\,J$

- 1350 W
- 135 W
- 150 kW
- 15 kW

$$P = \frac{w}{t} = \frac{450000\,J}{30}$$

$$P = 15000 = 15\,K$$

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Question No. 21

When a capacitor is connected to a battery, the plate connected to the _____ terminal becomes _____

- positive, negative
- positive, positive
- negative, positive
- positive, neutral

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Question No. 38

time

If Moon is 384000 km from Earth, how long does it take light to travel from Moon to Earth? (use the speed c in vacuum)

384000000 m

- 5.2 s
- 13 s
- 2.7 s
- 1.3 s

$$\text{الزمن} = \frac{\text{المسافه}}{\text{السرعه}} = \frac{384000000}{3 \times 10^8} = 1.28 \text{ s}$$

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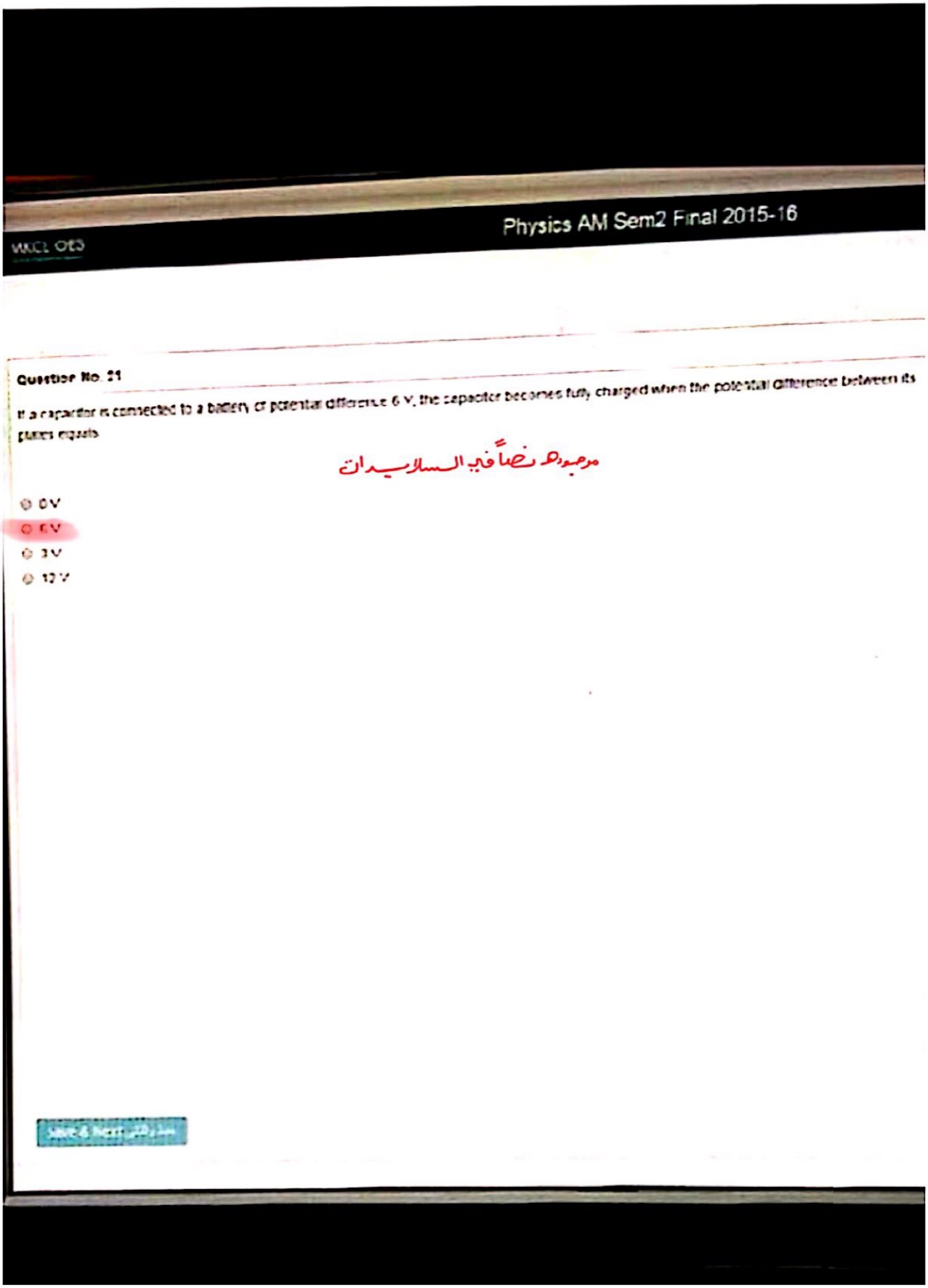

One kilowatt-hour equals (hint: 1W.s = 1J):

↓

1000 x 3600

= 3600000 W.s

= 3600000 J = 3.6 MJ

- 3.6 kJ
- 360 kJ
- 36 kJ
- 3.6 MJ

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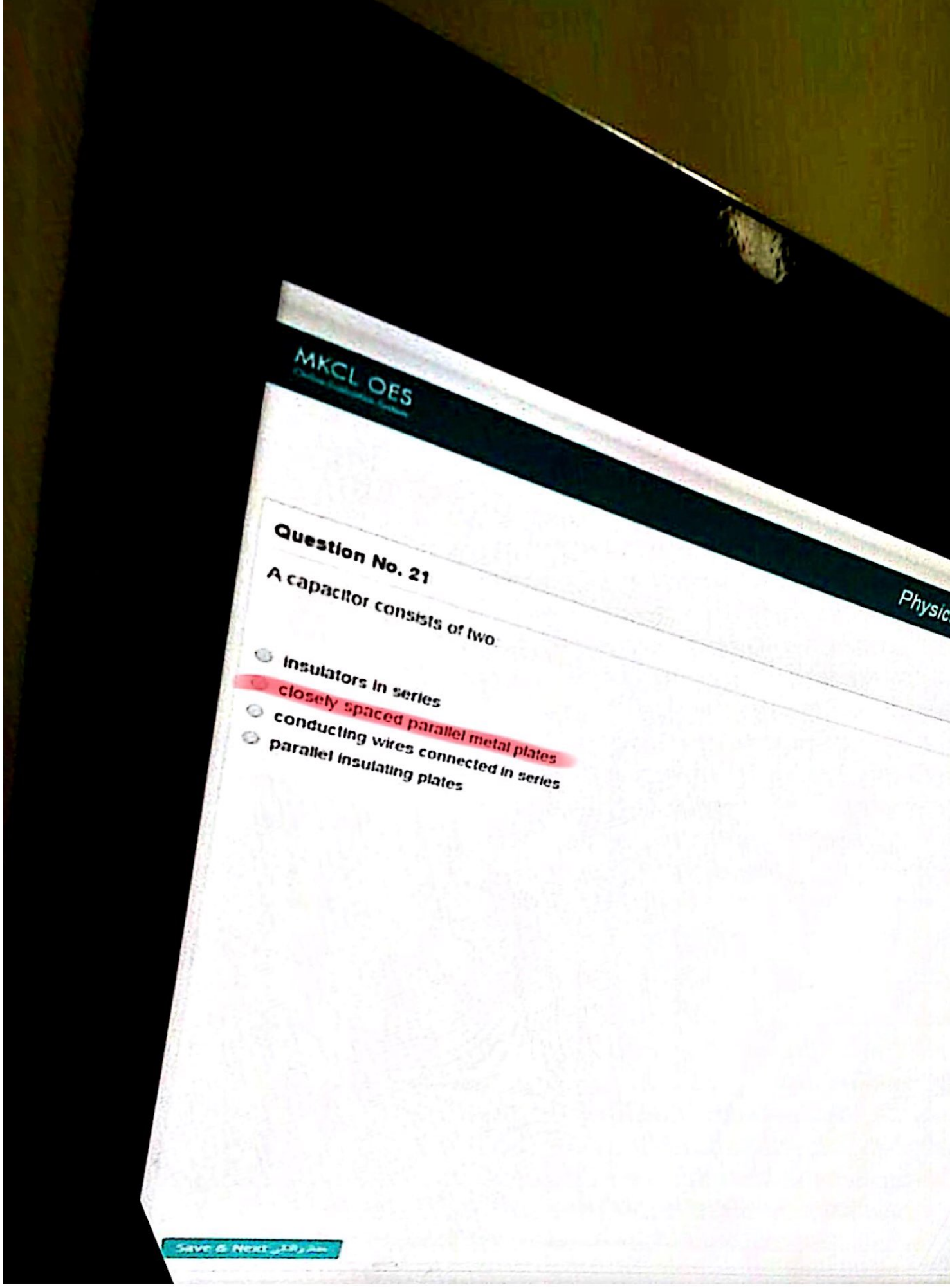

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Question No. 25

Which of the following SI units are equivalent:

$I = \frac{Q}{t} = C/s$

- volt and ampere/ohm
- volt and coulomb/second
- ampere and coulomb/second
- volt and coulomb/joule

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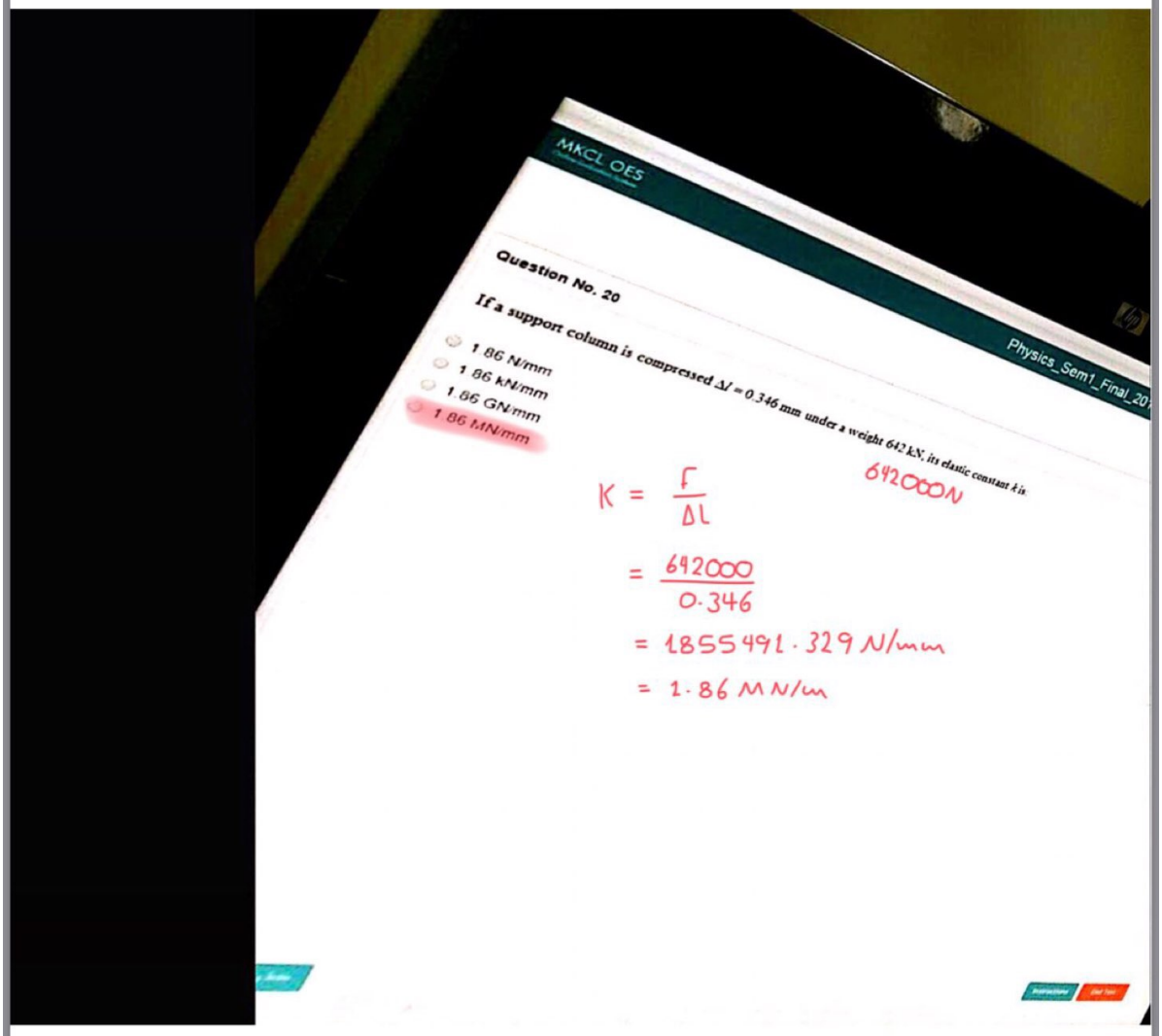
Physics_Sem1_Final_2016-…

Question No. 9

You raised a 10-kg object to a height of 2 m. and your friend raised a 30-kg object to the same height. The work done by your friend is

- double your work
- three times your work
- same as your work
- half your work



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Question No. 2

Two forces are: (F1 = 12 N, west) & (F2 = 9 N, north). The magnitude of their resultant (R) is:

$$R = \sqrt{12^2 + 9^2} = 15\ N$$

- ○ 21 N
- ○ 3 N
- ○ 15 N
- ○ 221 N

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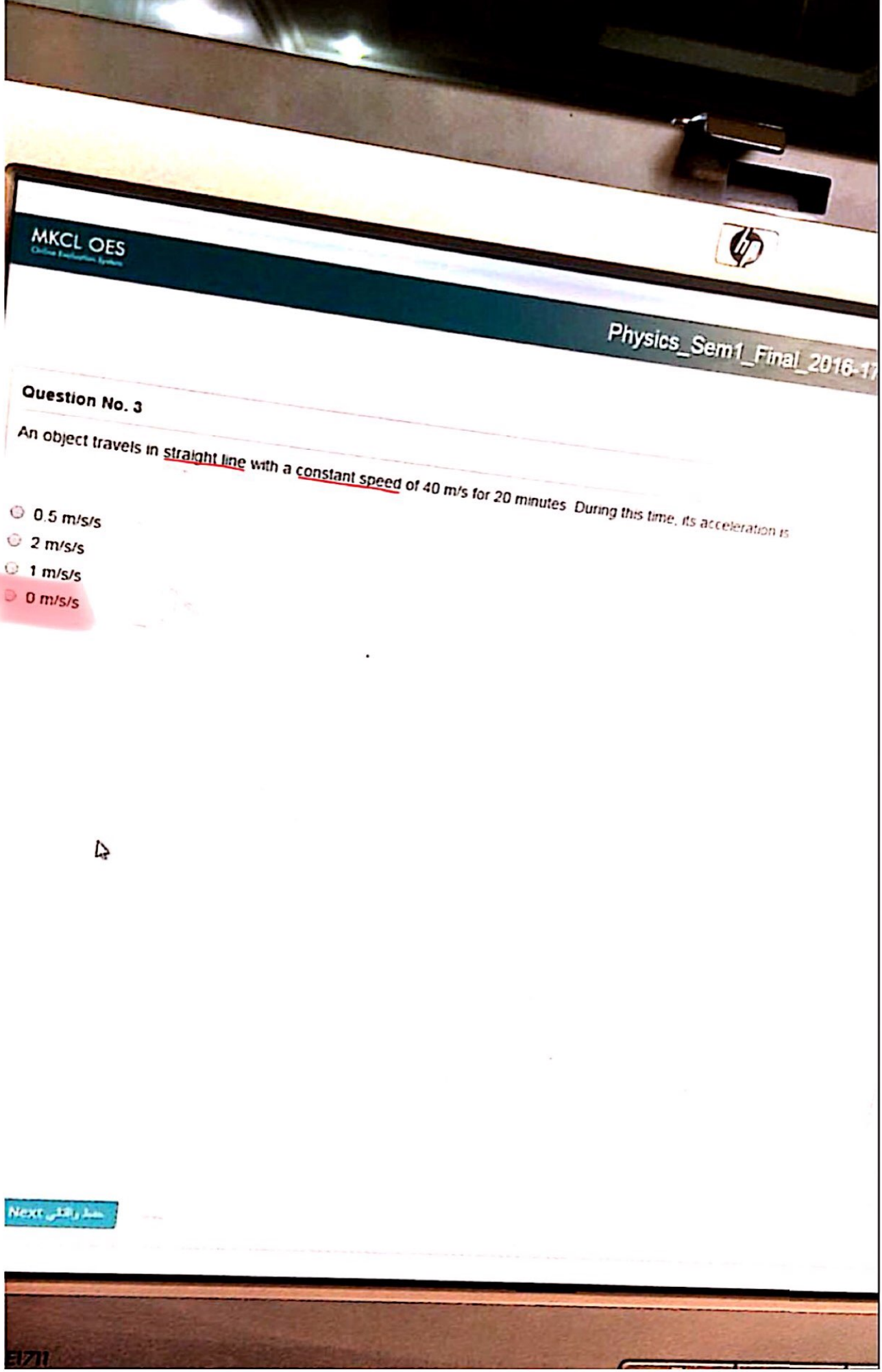

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An airplane of velocity (v1 = 80 km/h, north) faces a wind of velocity (v2 = 60 km/h, west). The resultant velocity of the plane is:

A. (140 km/h, south of west)
B. (100 km/h, south of west)
C. (140 km/h, north of west)
D. (100 km/h, north of west)

$R = \sqrt{80^2 + 60^2} = 100$ Km/h, north of west

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Question No. 3

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:

v_i v_f t

$v_f = v_i + at$

$a = \frac{v_f - v_i}{t} = \frac{-40}{10} = -4\ m/s^2$

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

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Question No. 3

u_i t a

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:

$$s = u_i t + \frac{1}{2} a t^2$$

$$s = (20 \times 20) + \frac{1}{2}(2)(20)^2 = 800 \text{ m}$$

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

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Question No. 1

A quantity that requires both magnitude and direction is called:

- vector
- order of magnitude
- scalar
- scientific notation

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Question No. 5

Friction on a non-moving object is called:

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

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Question No. 1

Three forces are: (F1 = 15 N, east), (F2 = 9 N, west) & (F3 = 3 N, west). Their resultant (R) is:

12 N, West

15 − 12 = 3 N, east

- 9 N, east
- 3 N, west
- 3 N, east
- 27 N, east

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Question No. 2

A box is pulled vertically up with rope. If the tension in the rope is 140 N, its vertical component is:

- 70 N
- 100 N
- 0 N
- 140 N

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Question No. 3

v_i v_f t

An object travels in straight line and increases its speed uniformly from rest to 30 m/s within 10 seconds. Its acceleration is:

- 1 m/s/s
- 2 m/s/s
- 0 m/s/s
- 3 m/s/s

$$v_f = v_i + at$$

$$a = \frac{v_f - v_i}{t}$$

$$a = \frac{30 - 0}{10} = 3\ m/s^2$$

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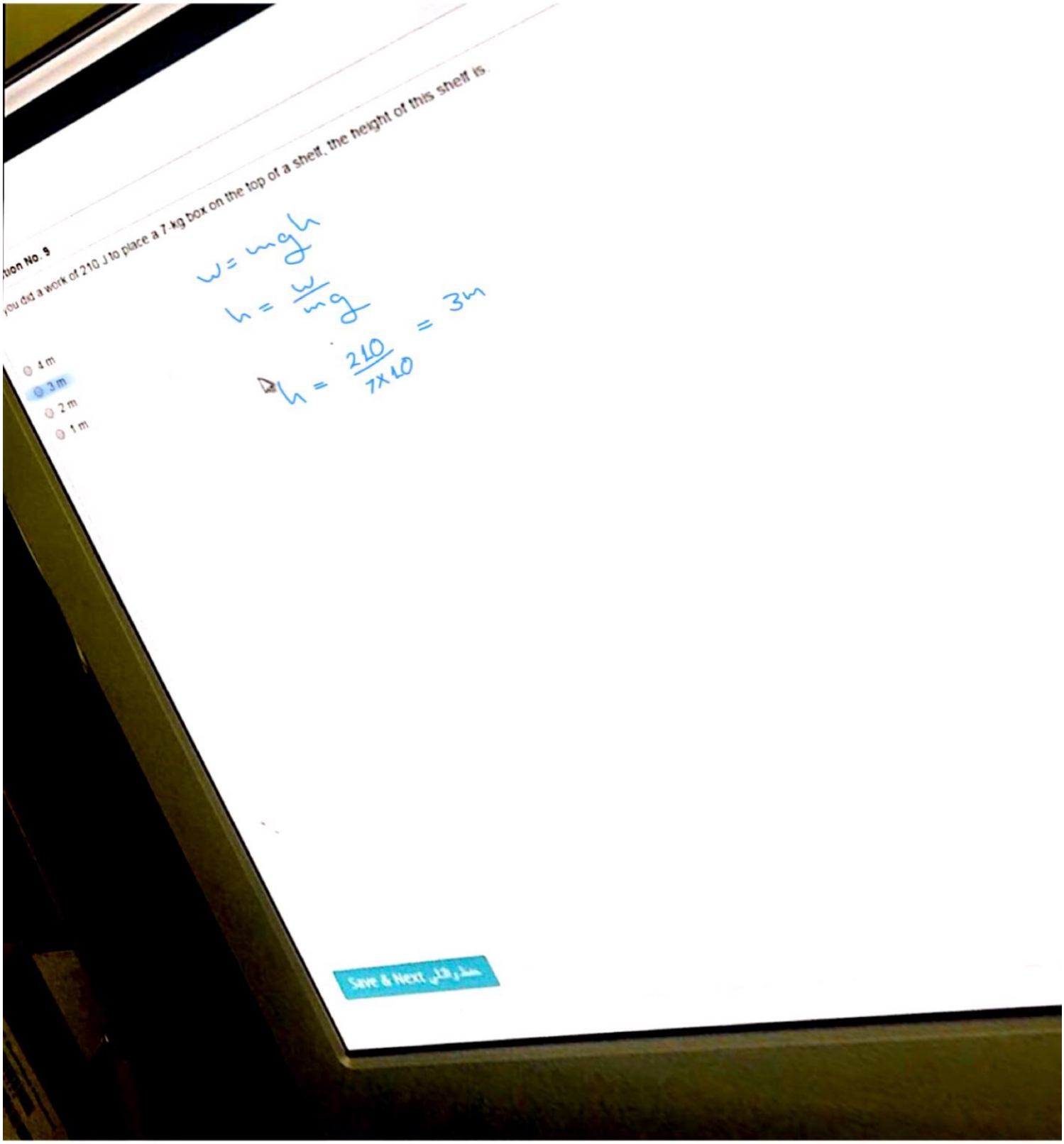

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... (F 1 = 100 N, up) & (F 2 = 100 N, up) The magnitude of their resulta...

- 200 N
- 100 N
- 140 N
- 0 N

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Question No. 4

If a stone drops in a free fall from the edge of a mountain, the distance it covers after 2 seconds is (use g = 10 m/s/s)

- 120 m
- 80 m
- 45 m
- 20 m

نهمل هذا الجزء لان السرعه الابتدائيه صفر

$S = v_i t + \frac{1}{2} a t^2$

$S = \frac{1}{2} a t^2$

$S = \frac{1}{2}(10)(2)^2$

Next

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Question No. 1

Two forces are: (F1 = 130 N, west) & (F2 = 115 N, east). Their resultant (R) is:

- 15 N, west
- 245 N, east
- 15 N, east
- 245 N, west

Save & Next جطو وقلى

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Question No. 23

Which of the following temperatures is *NOT possible*?

- -278 °C
- -200 °C
- -274 °F
- 4500 °C

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If one light-year (سنة ضوئية) is the distance light travels in 1 year, one year $\approx 3 \times 10^7$ s, and the speed of light in space is (3×10^8 m/s), one light-year is approximately: (distance = speed × time)

$3 \times 10^8 \times 3 \times 10^7 = 9 \times 10^{15} \approx 10^{16}$

- 10^{14} m
- 10^{15} m
- 10^{16} m
- 10^{12} m

Save & Next

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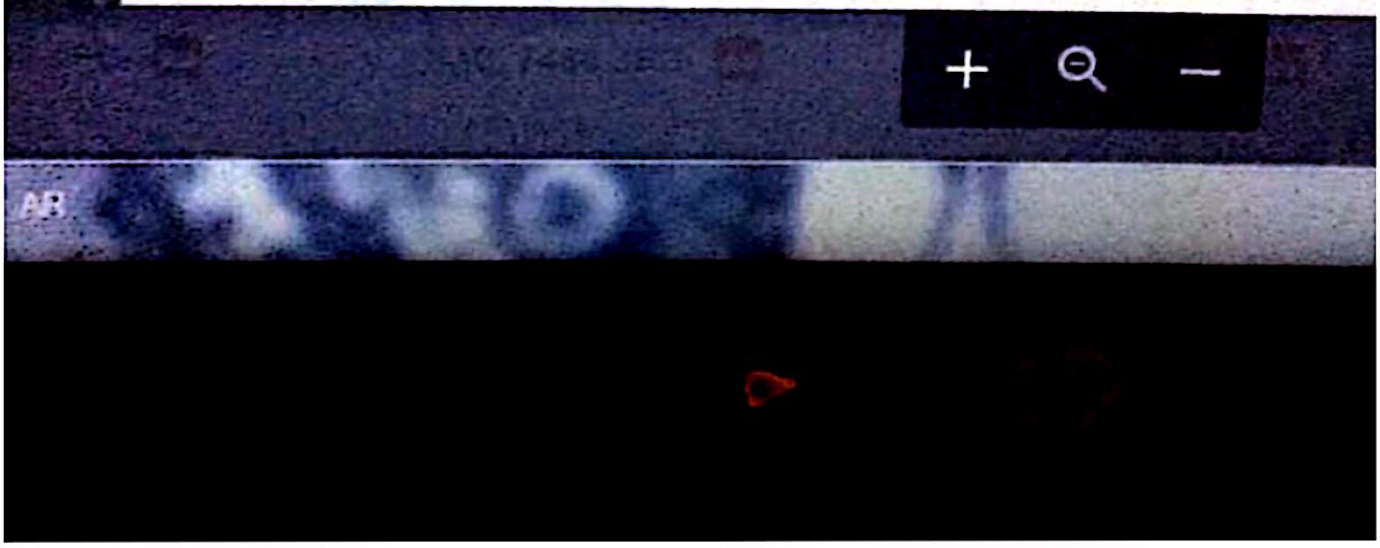
Question No. 25

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

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



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Question No. 39

The magnification of a plane mirror is:

- 10
- 0.5
- 1
- 2

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Question No. 10

The friction force always acts in a direction:

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

A

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stion No. 17

bullet is fired from a handgun with a force F1, the handgun recoils (ترتد) with a force F2. We can say that

F1 and F2 are equal and opposite

F1 and F2 are equal and in the same direction

F1 and F2 are equal and perpendicular

F1 and F2 are not equal

A

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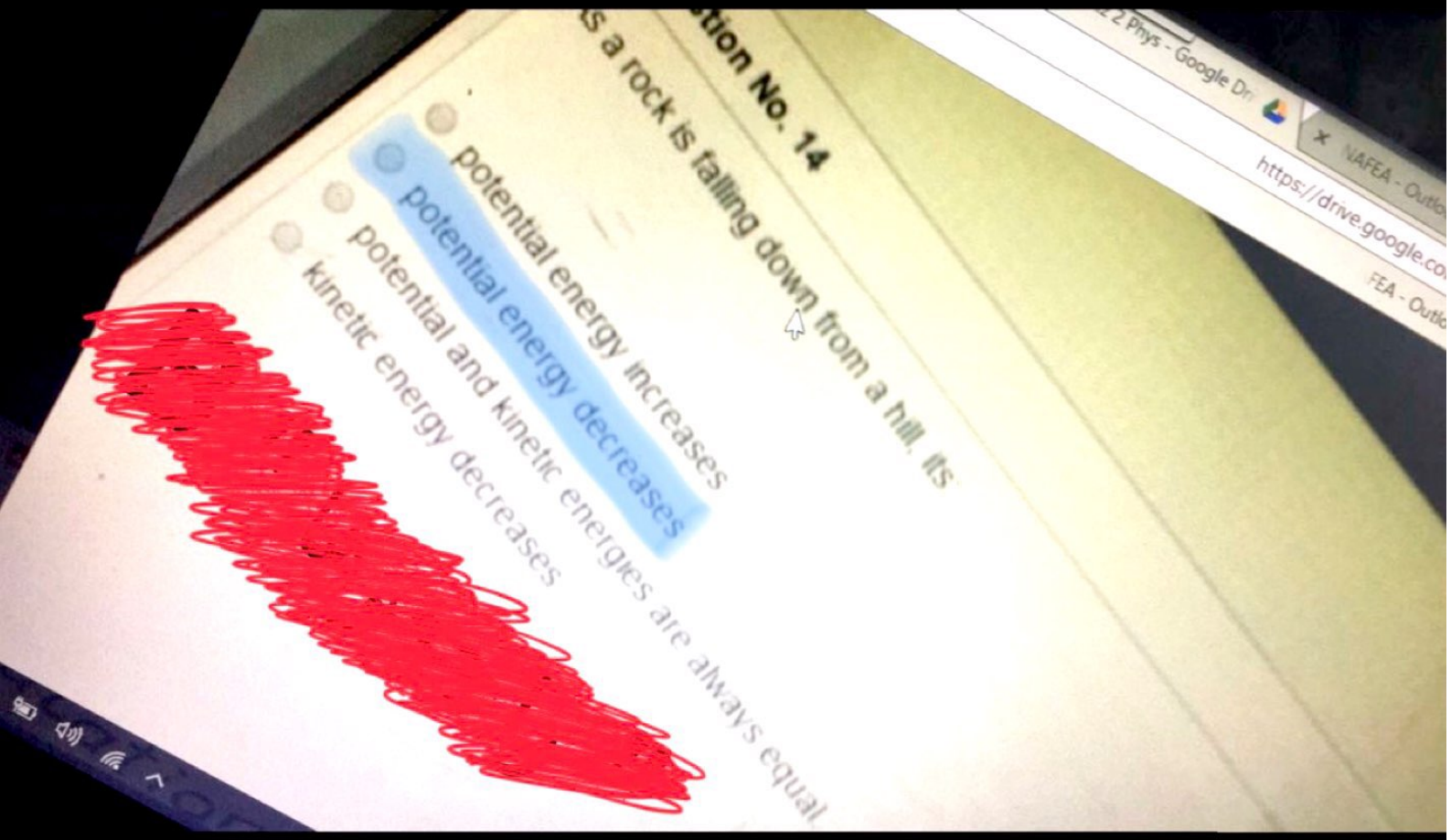

Question No. 1

An object travels in straight line with a constant speed of 40 m/s for 20 minutes. During this time, its acc

- 2 m/s/s
- 1 m/s/s
- 0 m/s/s
- 0.5 m/s/s

C

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Question No. 17

Kinetic friction is always _____ _____ the maximum static friction.

- half
- equal to
- more than
- less than

D

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Question No. 20

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

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

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

$v = \sqrt{\frac{2 \times 100}{2}} = 10 \text{ m/s}$

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

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Question No. 15

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

$F = ma \rightarrow 100 \div 0.8 = 125\,kg$

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

D

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Question No. 15

If the velocity of an object doubles, its kinetic energy

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

Save & Next

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Question No. 1

Two forces are (F1 = 30 N, north) & (F2 = 40 N, north). Their resultant (R) is

- 70 N, south
- 50 N, north-east
- 50 N, north-west
- 70 N, north

Save & Next

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Question No. 15

$a = 10$ s v_f

A pile driver falls freely from a height of 3.2 m above a pile. Its velocity as it hits the pile is:

- 2 m/s
- 8 m/s
- 4 m/s
- 6 m/s

$$2as = v_f^2 - v_i^2$$

$$v_f = \sqrt{2as + v_i^2}$$

$$v_f = \sqrt{2(10)(3.2) + (0)^2} = 8 \text{ m/s}$$

Save & Next ضط والتالي

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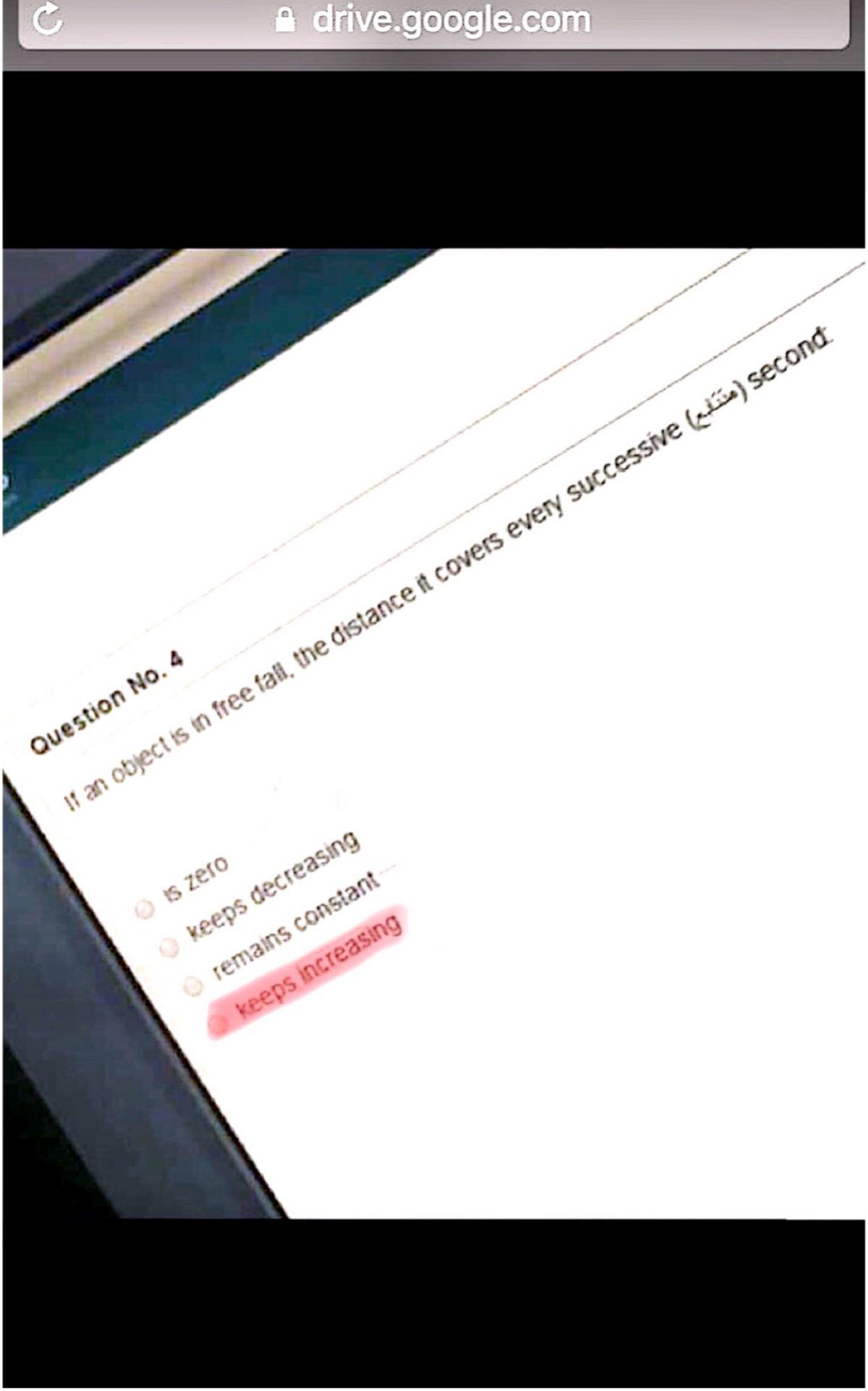
Question No. 7

An object travels in straight line and increases its speed uniformly from rest (u) to 30 (v_f) m/s within 10 (t) seconds. Its accele

$$\frac{30-0}{10} = 3\ m/s^2$$

- 0 m/s/s
- 2 m/s/s
- 1 m/s/s
- 3 m/s/s

C



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Question No. 18

A painter weighting 630 N climbs to a height of 5 m on a ladder. What is the increase in gravitational potential er

mg h

$PE = mgh$

$PE = 630 \times 5$

$PE = 3150\,J$

- 31.5 J
- 3.15 kJ
- 31.5 kJ
- 3.15 J

B

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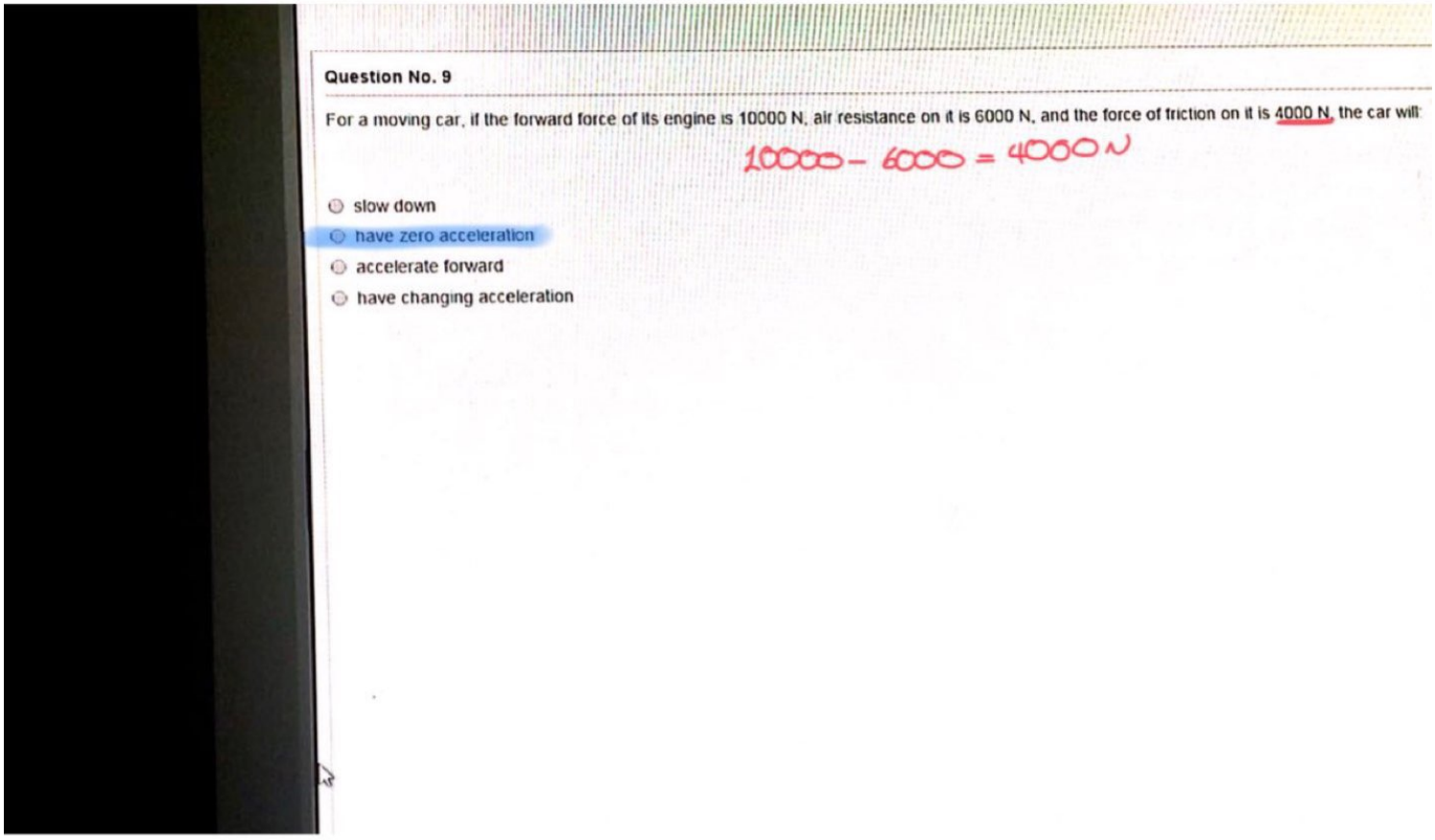

Question No. 9

For a moving car, if the forward force of its engine is 10000 N, air resistance on it is 6000 N, and the force of friction on it is 4000 N, the car will:

10000 − 6000 = 4000 N

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

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Question No. 3

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

- zero
- maximum
- > zero
- < zero

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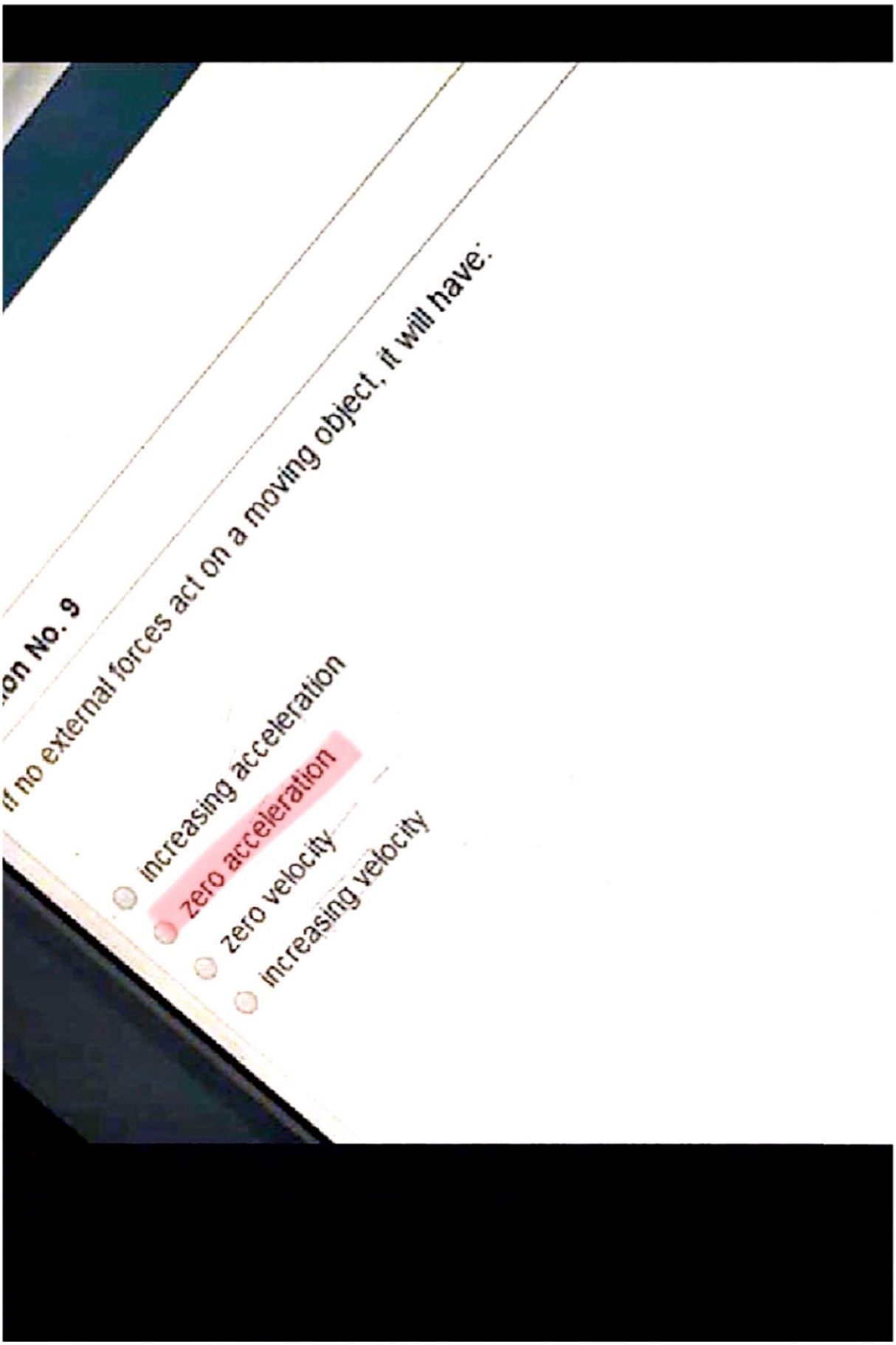

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Question No. 24

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?

$W = mgh = 400 \times 10 \times 30 = 120000\,J$

$P = \frac{W}{t} = \frac{120000}{30} = 4000\,W$

$= 4\,kW$

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

D

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MKCL OES

Physics_Sem1_Quiz-2_2016-17

Question No: 18

A force of 1 N is the same as

- 1 kg cm
- 1 kg m/s²
- 1 kg m s
- 1 kg m/s

$F = ma$

$1N = 1kg\ m/s^2$

Save & Next

Question No. 6

If a car's average speed is 100 km/h on a 3-hour trip, the total distance it covers is:

$s = v_{av}\, t \longrightarrow 100 \times 3 = 300\ Km$

- 100 km
- 300 km
- 200 km
- 400 km

B

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OES

Question No. 6

The normal force on a 20-kg brick lying on a level table is (use g = 10 m/s/s):

20 x 10 = 200 N

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

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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

لأن الارتفاع يقل

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Question No. 8

An object that has small inertia must have

- small mass
- small area
- small volume
- big mass

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Question No. 7

The friction force between two surfaces depends on:

- nature of the surfaces and the normal force
- only the normal force
- nature of the surfaces and their area
- only nature of the surfaces

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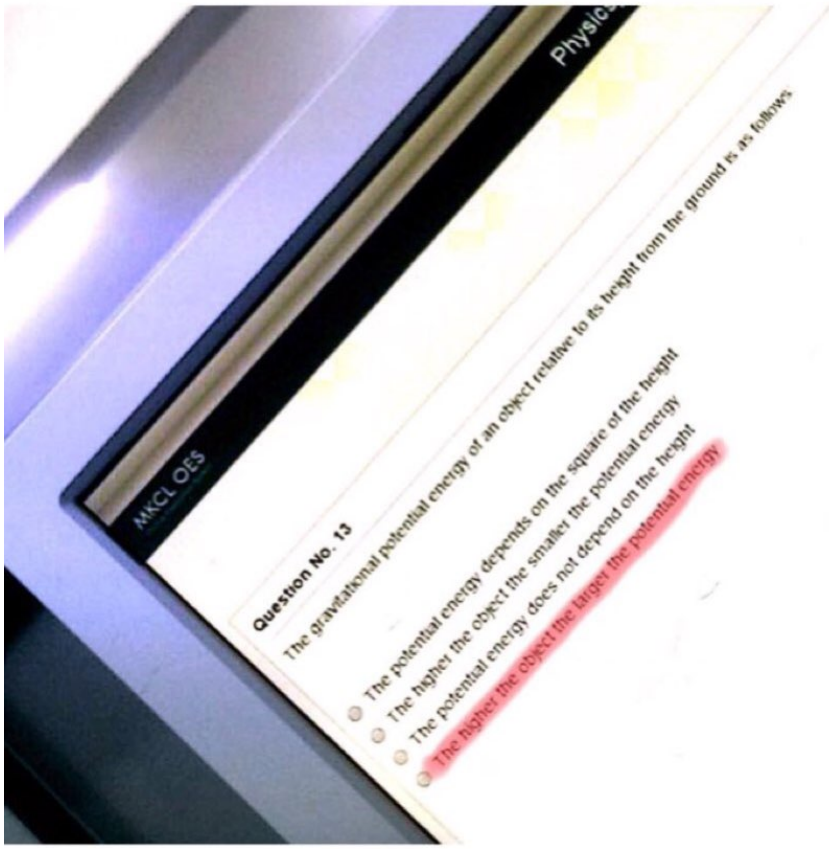

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Question No. 19

A 1500-kg car accelerates from 12 km/h to 120 km/h in 10 seconds. The net force (F = ma) on the car is (1m/s = 3.6 km/h):

- 3500 N
- 2500 N
- 4500 N
- 3000 N

هو الجيد لكن أقرب إجابة

3.33m/s ↓ 33.3m/s ↓

$a = \frac{33.3 - 3.33}{10}$: 1 نوجد التسارع

$= 2.997$

2 : نوجد محصلة القوى

$F = ma$

$= 1500 \times 2.997 = 4495.5$

Save & Next

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Question No. 12

$\times 10 = F_N = 1000$

f a man pushes a 100-kg box on a level floor and the box moves with constant velocity, the push force on the box
riction $\mu = 0.2$)

$F_f = \mu F_N$

$= (0.2)(1000)$

$F_f = 200N$

50 N

200 N

100 N

1000 N

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Question No. 10

The force that can make a 100-kg crate accelerate at 0.8 m/s/s is:

$F = ma = 100 \times 0.8 = 80N$

- 80 N
- 10 N
- 50 N
- 125 N

If a block of wood on a 0.8-m height table has a potential energy of 24 J (relative to the ground), the mass of the block is:

- 3 kg
- 7 kg
- 1 kg
- 5 kg

$$PE = mgh$$

$$m = \frac{PE}{gh}$$

$$m = \frac{24}{0.8 \times 10} = 3\,kg$$

Save & Next

Question No. 7

The coefficient of friction is always:

- less than 1
- negative
- more than 1
- dimensionless

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Question No. 25

How many kilo-joules of heat Q must be given off by 15 kg of iron (specific heat = 481 J/kg °C) to cool from 105 to 55 °C?

m, c, ΔT

- 361 kJ
- 23 kJ
- 17 kJ
- 111 kJ

$Q = cm\,\Delta T$

$Q = 481 \times 15 \times 50 = 360750\ J$

$\simeq 361\ kJ$

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Question No. 10

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

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

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Question No. 17

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

work done on your muscles

no force acted on your muscles

work done on the wall

no force acted on the wall

* ضاً خاي السلاسيدات

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Question No. 14

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

- Newton's second law
- Newton's third law
- Newton's first law
- Pythagoras principle

خطأ ←

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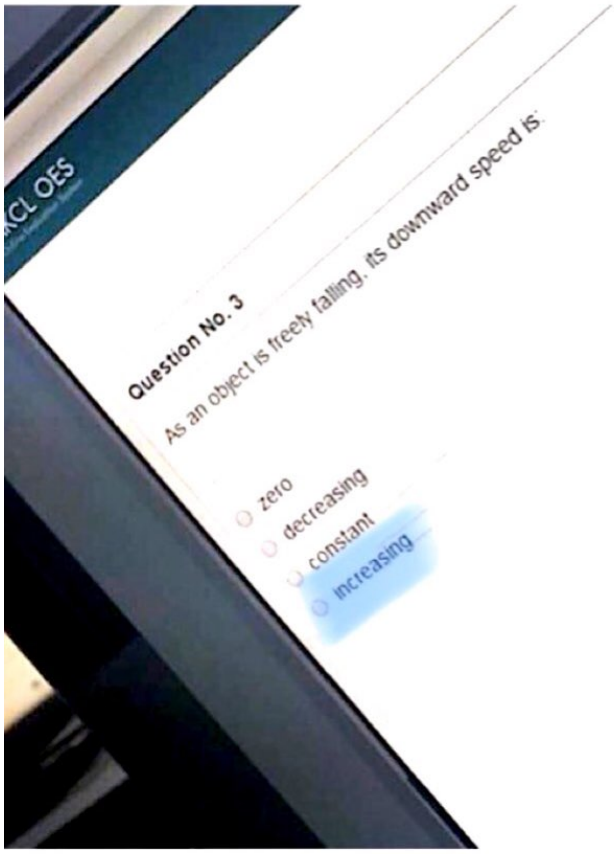

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Question No. 25

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

- converts to potential energy
- becomes zero
- decreases
- increases

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Question No. 4

After a falling object reaches terminal speed its speed is

- decreasing
- zero
- increasing
- constant

تأكد من صحة:

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$v_i = 0$

If a rock falls from a balcony and hits the ground with a speed of 20 m/s, the balcony's height is (use g = 10 m/s²)

v_f

a

- 10 m
- 30 m
- 20 m
- 40 m

$$2as = v_f^2 - v_i^2$$

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

$$s = \frac{(20)^2 - (0)^2}{10 \times 2} = 20m$$

Question No. 16

The energy units are.....

- Kilogram
- Pound
- Kilometer
- Kilocalories

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Question No. 8

The "thermodynamic" is .....

- Capacity to perform work
- Science that studies energy transformations
- Science that studies cell movement
- Quantity of food eaten

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Question No. 30

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

- 1 °C
- 10 K
- 32 °F
- 273 K

A

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stion No. 17

bullet is fired from a handgun with a force F1, the handgun recoils (ترتد) with a force F2. We can say that :

F1 and F2 are equal and opposite

F1 and F2 are equal and in the same direction

F1 and F2 are equal and perpendicular

F1 and F2 are not equal

A

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Question No. 3

Two forces are: (F1 = 12 N, west) & (F2 = 9 N, east). Their resultant (R) is:

12 - 9 = 3N, west

- 21 N, east
- 3 N, east
- 21 N, west
- 3 N, west

D

Question No. 15

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

$F = ma$

$m = \frac{F}{a} = \frac{100}{0.8} = 125\ kg$

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

D

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Question No. 21

The unit of power is:

- Joule
- Watt
- Newton
- kilogram

B

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Question No. 27

In the Fahrenheit temperature scale water boils at

- 273 °F
- 212 °F
- 373 °F
- 100 °F

B

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Question No. 5

Two forces are: (F1 = 12 N, west) & (F2 = 9 N, north). The magnitude of their resultant (R) is:

$R = \sqrt{12^2 + 9^2} = 15N$

- ○ 221 N
- ○ 15 N
- ○ 21 N
- ◉ 3 N

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Question No. 1

Two forces are: (F1 = 12 N, east) & (F2 = 9 N, west). Their resultant (R) is:

12 − 9 = 3 N, east

- (●) 21 N, east
- ( ) 3 N, east
- ( ) 21 N, west
- ( ) 3 N, west

B

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