الفيزياء

نشاط الفاينل

2020

دعواتكم 💗✨

Question No. 7

We have 100 resistances connected in parallel and each has a value of 1 kΩ. With each of these resistances we connected another resistance R in series. If the total resistance is 30 Ω, R has a value of:

- 10 kΩ
- 4 kΩ
- 2 kΩ
- 5 kΩ

Question No. 2

A charge Q = 2 μC exerts a force F on a charge q located at point (P) which is 3 cm from Q. The magnitude of the electric field resulting from Q at the point (P) equals:

- 2×10^{6} N/C
- 2×10^{7} N/C
- 2×10^{5} N/C
- 2×10^{8} N/C

Question No. 3

A sample of wood from an old boat is found to contain 6.25 % of the number of carbon-14 nuclides in an equivalent piece from a modern sample. If the half-life of carbon-14 is 5730 years, how old is the "old boat"?

- (●) 22920 years
- ( ) 17190 years
- ( ) 11460 years
- ( ) 5730 years

Question No. 4

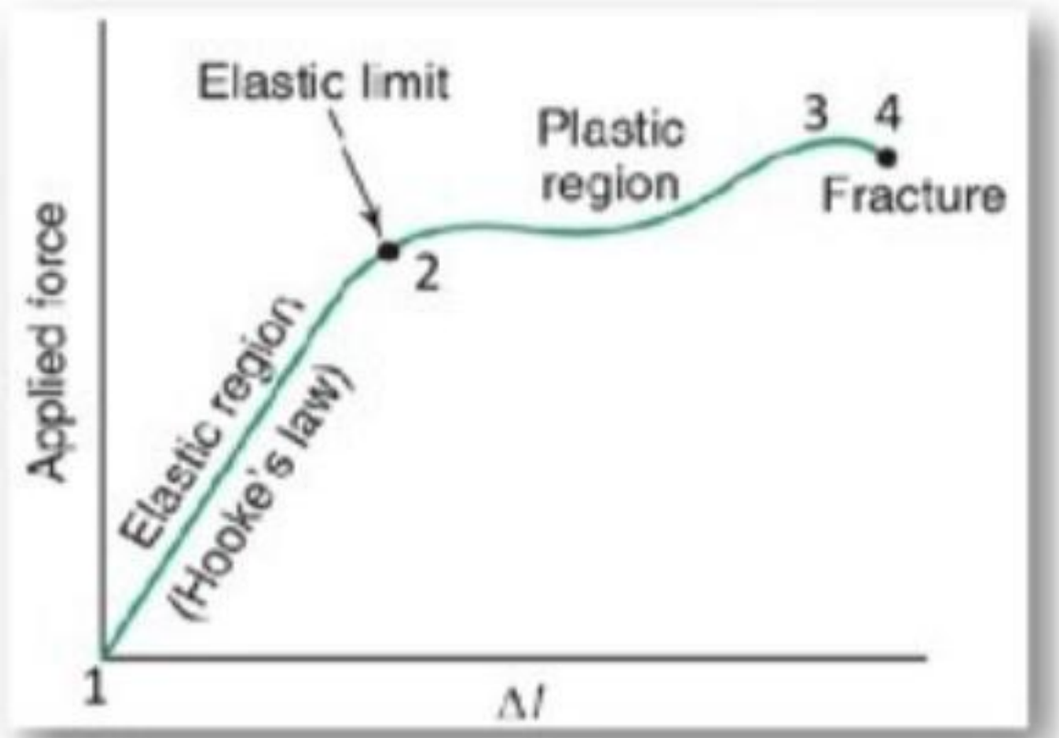
The figures below represent a direct application of Hooke's law. Which parts in the upper figure fully match those in the lower figure?

(a) Spring before stretching

(b) Spring stretched near its elastic limit

(c) Spring stretched beyond its elastic limit

(d) Spring stretched much beyond its elastic limit ... break occurs!



- (a) matches region 1-2 and point 4; (b) matches region 2-3; (c) matches region 1-2 (d) matches region 1-2
- (a), (b) and (c) match region 1-2; (d) matches region 2-3
- (a) and (b) match point 4; (c) matches region 1-2; (d) matches region 2-3
- (a) and (b) match region 1-2; (c) matches region 2-3; (d) matches point 4

Question No. 5

An object is placed 9 cm in front of a convex mirror. If an image is formed with a magnification of M = + 1/3 , the focal length of this mirror is:

- -7.5 cm
- -3 cm
- -9 cm
- -4.5 cm

Question No. 7

Two equal electric charges of 0.5 mC each separated by a distance r repel each other by a force of 25 kN. The distance r is;

- 0.3 cm
- 300 cm
- 3 cm
- 30 cm

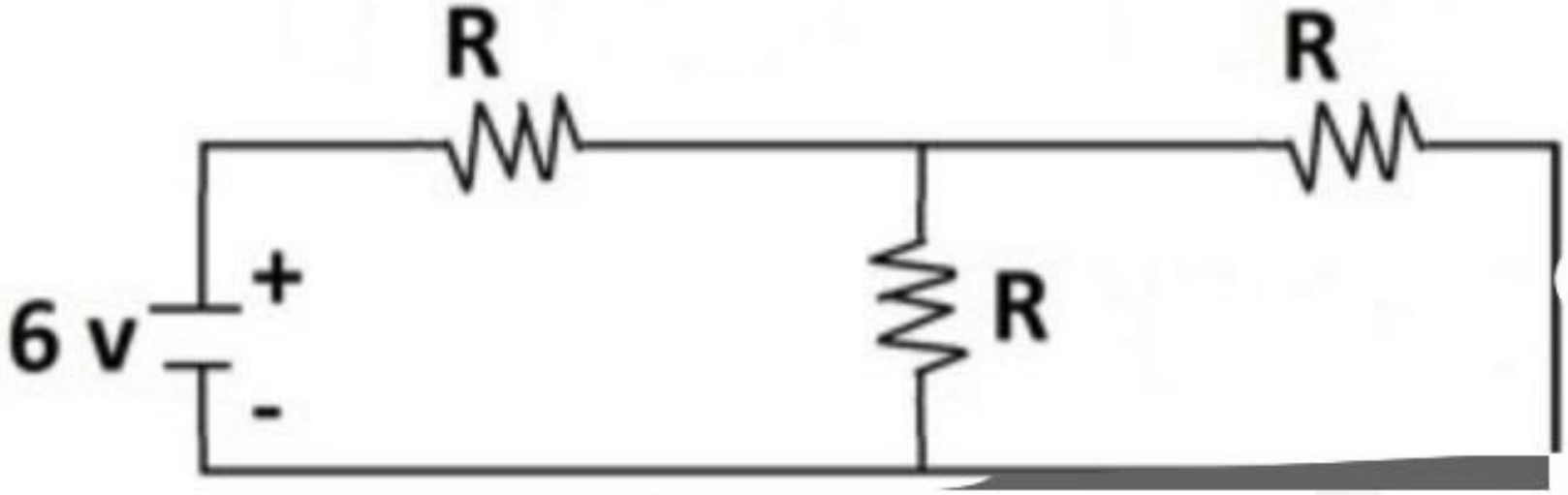
Question No. 6

Gamma rays do not deflect in a magnetic field because they are:

- (●) uncharged photons
- ( ) electrons with too much charge.
- ( ) charged photons
- ( ) charged particles

Question No. 8

In the circuit below, R = 20 Ohms. The total current in the circuit is:



- 200 mA
- 600 mA
- 300 mA
- 100 mA

Question No. 9

A building has 30 class rooms each has 40 lamps and each lamp operates at a power of 40 watts. If each class works 8 hours a day and 20 days a month, how much is the cost of the energy consumed in a month if the price of one kWh is 0.32 SAR.?

- 61.44 SAR
- 122.88 SAR
- 2457.6 SAR
- 81.92 SAR

Question No. 10

Nuclear medicine uses Tc-99 isotope, which has a half-life of 6 hours years. If the initial amount is 20 mCi, the amount of that isotope remaining after 12 hours will be (mCi is the unit of radioactivity):

- (●) 5 mCi
- ( ) 10 mCi
- ( ) 2.5 mCi
- ( ) zero.

Question No. 11

The following electromagnetic radiations are in order from high frequency to low frequency:

- ultraviolet, infrared , visible light, X-rays
- X-rays, ultraviolet, visible light, infrared
- infrared, X-rays, ultraviolet, visible light
- X-ray, infrared, ultraviolet, visible light

Question No. 12

The properties of an image formed by a convex mirror are:

- inverted, smaller and closer to the mirror than the object.
- upright, larger and closer to the mirror than the object.
- inverted, larger and closer to the mirror than the object.
- upright, smaller and closer to the mirror than the object.

Question No. 14

A billion electrons pass a given point in a heating element every 0.1 ns, which is operated at 220 V. The rate of energy consumption of this element is:

- 325 watt
- 138 watts
- 563 watts
- 352 watts

Question No. ■

A concave mirror with a focal length of 15 cm forms a real image that is magnified 3 times for an object. The object distance from the mirror is:

- 40 cm
- 20 cm
- 10 cm
- 45 cm

Question No. 13

Fill in the gaps: When a radioactive element decay by emitting alpha radiation, a new element. of mass and atomic numbers less than the parent by ____ and __ __, respectively, is formed. If this emission of radiation incident on a body of mass M, then the absorbed dose can be calculated by _____ and the results is given in _____ or _____ ?. For health effects of radiation, the dosage is expressed in the unit of _____ or _____.

- 4; 2; multiplying incident energy (J) by the mass of the body (kg); Gray; rad, Sievert, Joule
- 4; 1; dividing incident energy (J) by the mass of the body (kg); Sievert; rem, rad, Gy
- 4; 2; dividing incident energy (J) by the mass of the body (kg); Gray; rad, mSv, mrem
- 2; 2; dividing incident energy (J) by the mass of the body (kg); Gray; rad, Joule, rem

Question No. 16

The amount of heat required to change 3 liters of water at 15 Celsius to steam at 117 Celsius approximately equals:

- 7.95 Mcal
- 2.26 Mcal
- 9.15 Mcal
- 1.9 Mcal

Question No. 17

The melting point of an element is 422 R. What kelvin temperature is this?

- 243.1 K
- 373.2 K
- 273.1 K
- 234.1 K

Question No. 18

Heat is a form of _____ and _____ energies, so when we heat a block of iron, the kinetic energy of the iron atoms _____. Heat maybe transferred from an object at _____ to _____ temperature:

- kinetic, potential, increases, lower, higher
- kinetic, potential, vanishes, lower, higher
- kinetic, potential, decreases, higher, lower
- kinetic, potential, increases, higher, lower

Question No. 19

Which of the following radiation dose is lethal?

- 450 rem
- 450 mrem
- 500 mrem
- 550 rem

Question No. 20

When a ray of light is incident perpendicular to a mirror surface, its angle of incidence is:

- 45°
- 180°
- 0°
- 90°