

Question 4

Not yet answered

Marked out of 1

[Flag question](#)

Magnitude of induced e.m.f is proportional to

Select one:

- ☒ a. rate of change of current
- ☐ b. rate of change of voltage
- ☐ c. rate of change of magnetic flux linkage
- ☐ d. rate of change of resistance

Question 5

Not yet answered

Marked out of 1

[Flag question](#)

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Question 15

Not yet answered

Marked out of 1

Flag question

Which of the following is correct about Coulomb's law?

- I. The bodies were small compared to the distance between them.
- II. The force, F (of attraction or repulsion) was directly proportional to product of the two charges, and inversely proportional to the square of distance between them
- III. The bodies were appreciably large compared to the distance between the bodies.

Select one:

- ☐ a. I and II only
- ☐ b. II and III only
- ☐ c. I and III only
- ☐ d. I, II and III

Finish attempt

- ☐ d. The magnitude of the electric current

Question 13

Not yet answered

Marked out of 1

 Flag question

An electron in the conduction band

Select one:

- ☐ a. losses its charge easily
- ☐ b. jumps to the tip of the crystal
- ☐ c. has higher energy than the electron in the valence band
- ☐ d. has lower energy than the electron in the valence band

Question 14

Not yet answered

Marked out of 1

 Flag question



The energy stored in a 10 μ F capacitor

Question 4

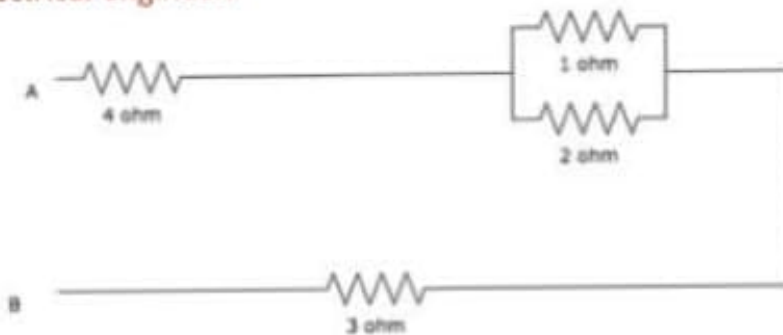
Not yet answered

Marked out of 1

Flag question

Calculate the total resistance between the points A and B.

<https://www.sanfoundry.com/wp-content/uploads/2018/02/basic-electrical-engineeri>



Select one:

- ☐ a. 7 ohm
- ☐ b. 0 ohm
- ☒ c. 7.67 ohm
- ☐ d. 0.48 ohm

Question 5

Not yet answered

Marked out of 1

Flag question

Why is electrical energy usually transmitted at high voltage?

Select one:

- ☐ a. the resistance of the transmission cables is as small as possible
- ☐ b. the transmission cables are safer to handle
- ☒ c. as little energy as possible is wasted in the transmission cables
- ☐ d. the transmission system does not require transformers e. the current in the transmission cables is as large as possible

Question 6

Not yet answered

Marked out of 1

Flag question

The strength of a semiconductor crystal comes from

Select one:

- ☐ a. forces between nuclei
- ☐ b. forces between protons
- ☒ c. electron - pair bonds

☒ d. 4.60

Question 10

Not yet answered

Marked out of 1

 Flag question

When three capacitors are joined in series, the total capacitance is?

Select one:

- ☐ a. Equal to the sum of the capacitance
- ☐ b. Less than the value of the minimum capacitance
- ☐ c. Greater than the value of the maximum capacitance
- ☐ d. No correct option

Question 11

Not yet answered

- ☐ d. The time constant would decrease to one-half its original value.
- ☐ e. The time constant would decrease to one-fourth its original value.

Question 6

Not yet answered

Marked out of 1

[Flag question](#)

Two identical conducting plates of plate area A are separated by a distance d to form a parallel plate air capacitor. Now a metal sheet of thickness $d/2$ is inserted between the plates of the capacitor. The ratio of capacitance before the insertion of plate and after the insertion of plate is

Select one:

- ☐ a. 1:2
- ☐ b. 1:1
- ☐ c. 1:2
- ☐ d. $\sqrt{2}$:1

Question 7

Not yet answered

Marked out of 1

[Flag question](#)

A series R-L-C circuit has $R=10\ \Omega$, $L=0.5\text{H}$ and $C=10\mu\text{F}$. Calculate the frequency for maximum current flow in this circuit if it is connected to a source 100V.

Select one:

- ☐ a. 50Hz
- ☐ b. 60Hz
- ☐ c. 70Hz
- ☒ d. 71Hz

Question 4

Not yet answered

Marked out of 1

 Flag question

Ohm's law can be used only to a _____ circuit or component

Select one:

- ☐ a. Unilateral
- ☐ b. Exponential
- ☐ c. Trivalent
- ☒ d. Linear

Question 5

Not yet answered

Marked out of 1

 Flag question



- ☐ b. Energy - kW
- ☐ c. Potential difference - J/C
- ☒ d. Current - A/s

Question 7

Not yet answered

Marked out of 1

 Flag question

The S.I unit of potential difference is?

Select one:

- ☒ a. Volt(J/C)
- ☐ b. N/C
- ☐ c. J/m
- ☐ d. Volt (C/J)

Question 8

Not yet answered

Marked out of 1

 Flag question

have a uniform electric field

Question 10

Not yet answered

Marked out of 1

Flag question

A battery of fixed emf E and internal resistance r is connected to a variable external resistor R . what would be the relation between R and r when maximum power is delivered.

Select one:

- ☐ a. $R=2r$
- ☐ b. $R=r$
- ☐ c. $R=r^2$
- ☐ d. $R=\sqrt{r}\sqrt{r}$

Question

Answered

Marked out of 1

Flag question

What element is present in a semiconductor?

Select one:

- ☐ a. Monovalent
- ☐ b. Bivalent
- ☐ c. Trivalent
- ☐ d. Covalent

Question 5

Not yet answered

Marked out of 1

Flag question

When a battery, a resistor, a switch, and an inductor form a circuit, and the switch is closed, the inductor acts to oppose the change in the current. How is the time constant of the inductor affected by doubling its inductance?

Select one:

- ☐ a. The time constant would increase to four times its original value.
- ☐ b. The time constant would increase to twice its original value.
- ☐ c. The time constant would remain the same.
- ☐ d. The time constant would decrease to one-half its original value.
- ☐ e. The time constant would decrease to one-fourth its original value.

Question 6

Not yet answered

Marked out of 1

Flag question

represented by a distance d to form a parallel

Select one:

- ☐ a. Forces between nuclei
- ☐ b. Forces between protons
- ☒ c. Electron-pair bonds
- ☐ d. None of the above

Question 13

Not yet answered

Marked out of 1

[Flag question](#)

A copper coil has a resistance of 200 ohms when its mean temperature is 0 degree centigrade. Calculate the resistance of the coil when its mean temperature is 80 degree centigrade. Temperature coefficient of copper is $0.004041 \text{ } ^\circ\text{C}^{-1}$

Select one:

- ☐ a. 264.65 ohm
- ☐ b. 264.65 kilo-ohm
- ☐ c. 286.65 ohm
- ☐ d. 286.65 kilo-ohm

Question 14

Not yet answered

Marked out of 1

[Flag question](#)

In a loss-free R-L-C circuit, the transient current is

Select one:

- ☐ a. Oscillating
- ☐ b. Square wave

Question 12 not yet answered Marked out of 1 Flag question

The mass number of a neutral atom of a cell is 12.

- ☐ a. 12
- ☐ b. 12 and 12
- ☐ c. 12 and 12
- ☐ d. 12 and 12
- ☐ e. 12 and 12

Question 13 not yet answered Marked out of 1 Flag question

Two capacitors $C_1 = 5\mu F$ and $C_2 = 8\mu F$ are connected in series across a 9V battery. How much energy do they store?

- ☐ a. $1.25 \times 10^{-4} J$
- ☐ b. $1.25 \times 10^{-4} J$
- ☐ c. $1.25 \times 10^{-4} J$
- ☐ d. $1.25 \times 10^{-4} J$
- ☐ e. $1.25 \times 10^{-4} J$

Question 15 not yet answered Marked out of 1 Flag question

Calculate the force between two protons placed at the distance 1m.

- ☐ a. $2.2 \times 10^{-36} N$, attraction
- ☐ b. $2.2 \times 10^{-36} N$, repulsion
- ☐ c. $2.2 \times 10^{-36} N$, attraction
- ☐ d. $2.2 \times 10^{-36} N$, repulsion

Flag question

Jump to...



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☐ c. Resistor

☐ d. Capacitor

Question 3

Not yet answered

Marked out of 1

Flag question

A parallel plate air capacitor is made using two plates 0.2 m^2 spaced 1 cm apart. It is connected to a 50 V battery. What is the charge on each plate?

Select one:

☐ a. 2.85 nC

☒ b. 9.15 nC

☐ c. 8.85 nC

☐ d. 2.05 nC

Question 4

Not yet answered

Marked out of 1

Flag question

The diagram below shows a positive point charge Q .



Which of the following describes the magnitude and direction of the electric field at points r and s respectively?

<https://www.scribbr.com/essays/essay-structure/>



The potential of a charge in two dimension is given as $V(x,y) = 3x + 4y$. Determine the electric field intensity of the charge in V/m .

Select one:

- ☐ a. -7
- ☐ b. 7
- ☐ c. 5
- ☒ d. -5



d. only when there is no current in the battery

Question 8

Not yet answered

Marked out of 1

 Flag question

A parallel plate capacitor has an area of 2000 cm^2 , and the plates are 1 cm apart. The original potential difference between them, V_0 , is 3000 volts, and it decreases to 1000 volts when a sheet of dielectric is inserted between the plates. Compute the electric intensity E after insertion of the dielectric.

Select one:

- ☐ a. $7.0 \times 10^5 \text{ V/m}$
- ☐ b. $6.0 \times 10^5 \text{ V/m}$
- ☐ c. $1.3 \times 10^5 \text{ V/m}$
- ☐ d. $1.0 \times 10^5 \text{ V/m}$

Question 9

Not yet answered

Marked out of 1

 Flag question

In A.C. circuits, one of the following statements is incorrect



Let the emf in the primary coil of a transformer be $\dot{a}_1$, and emf in the secondary coil of a transformer be $\dot{a}_2$, then the mutual inductance M is

Select one:

☐ a. $M = -\epsilon_1 \frac{dt}{dI_1}$

☐ b. $M = -\epsilon_1 \frac{dt}{dI_1}$

☐ c. $M = -\epsilon_1 \frac{dI_1}{dt}$

☐ d. $M = -\epsilon_2 \frac{dI_1}{dt}$

- ☐ a. 0.82m
- ☐ b. 82m
- ☐ c. 0.82m
- ☐ d. 8.2m

Question 15

Not yet answered

Marked out of 1

Flag question

Which of the following is/are correct?

- I. The resistance of semi-conductors decrease with increasing temperature.
- II. The removal of small amounts of impurity from crystals of pure semi-conductors is called DOPING
- III. Doping of silicon with boron gives an N-type semi-conductor.

Select one:

- ☐ a. I, II and III
- ☒ b. I and III
- ☐ c. II and III
- ☐ d. I only

Finish

→ Announcements

Jump to...



ade rubs a piece of fur on a hard rubber rod, giving the rod a negative charge. What happens?

Select one:

- ☐ a. Protons are removed from the rod.
- ☐ b. Electrons are added to the rod.
- ☐ c. The fur is also charged negatively.
- ☒ d. The fur is left neutral.

Question 7

Not yet answered

Marked out of 1

Flag question

The return spring of a galvanometer has a spring constant of 0.5 N/m . If the coil has an area of $2.25 \times 10^{-4} \text{ m}^2$ and 75 turns, calculate the sensitivity of the galvanometer if the magnetic field strength is 0.4 T

Select one:

- ☐ a. $0.527^\circ/\text{I}$
- ☐ b. $0.216^\circ/\text{I}$
- ☐ c. $0.0552^\circ/\text{I}$
- ☐ d. $0.0135^\circ/\text{I}$

**Question 4**

Not yet answered

Marked out of 1

Flag question

The current is zero in a conductor when no potential difference is applied because:

Select one:

- ☐ a. the electrons are not moving
- ☐ b. the electrons are not moving fast enough
- ☐ c. for every electron with a given velocity there is another with a velocity of equal magnitude and opposite direction.
- ☐ d. equal numbers of electrons and protons are moving together

Question 5

Not yet answered

Marked out of 1

Flag question

Under normal conditions a diode conducts current when it is

Select one:

- ☐ a. Reversed biased
- ☐ b. Forward biased
- ☐ c. Avalanched

Question 7

Not yet answered

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A loop of wire of 25 turns has an area of $2.0 \times 10^{-2} \text{ m}^2$. A current of 1.25A flows in the loop. Calculate the torque on the loop when its plane is parallel to a uniform magnetic field of 0.2T

Select one:

- ☐ a. $4.10 \times 10^{-1} \text{ Nm}$
- ☐ b. $3.26 \times 10^{-1} \text{ Nm}$
- ☐ c. $2.47 \times 10^{-1} \text{ Nm}$
- ☐ d. $1.25 \times 10^{-1} \text{ Nm}$

Question 8

Not yet answered

Marked out of 1

 Flag question

The part of a solid which electrons cannot occupy is called

Select one:

Calculate the electric field outside a spherical Gaussian surface at a point three-times its radius given that the enclosed charge is 10^{-8} C and the diameter is 15cm.

Select one:

- ☐ a. 17kN/C
- ☐ b. 16kN/C
- ☐ c. 189V/m
- ☒ d. 1600V/m

Question 2

Not yet answered

Marked out of 1

Flag question

- ☒ a. forbidden bands
- ☐ c. forbidden bands
- ☐ d. free bands

Question 9

Not yet answered

Marked out of 1

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Suppose we have a wire, with cross section area, AA , length L . and a charge Q flows through the wire in a time t . What is the current density?

Select one:

- ☐ a. $\frac{Q}{LA} \frac{Q}{LA}$
- ☐ b. $\frac{Q}{At}$
- ☐ c. $\frac{AQ}{t} \frac{AQ}{t}$
- ☐ d. $\frac{LAQ}{t} \frac{LAQ}{t}$

Question 10

Not yet answered

Marked out of 1

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☐ c. $1 \times 10^{-8} \text{ C}$ and $3 \times 10^{-8} \text{ C}$

☐ d. $1 \times 10^{-9} \text{ C}$ and $3 \times 10^{-9} \text{ C}$

Question 5

Not yet answered

Marked out of 1

🚩 Flag question

Faraday's law indicates that a changing magnetic field produces

Select one:

- ☒ a. an electric field.
- ☐ b. an induced magnetic field.
- ☐ c. a force field.
- ☐ d. light.

Question 6

Not yet answered

Marked out of 1

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What is the value of capacitance of a capacitor which has a



84°F

Mostly cloudy



Search



When the speed at which a conductor is moved through a magnetic field is increased, the induced voltage

Select one:

- ☐ a. Increases
- ☐ b. Decreases
- ☐ c. Remains constant
- ☐ d. none of the above

Question 3

Not yet answered

Marked out of 1

Flag question

A battery is used to charge a parallel-plate capacitor, after which it is disconnected. Then the plates are pulled apart to twice their original separation. This process will double the:

Select one:

- ☐ a. capacitance
- ☐ b. surface charge density on each plate
- ☐ c. stored energy
- ☐ d. electric field between the two plates

Question 4

Not yet answered

Marked out of 1

Flag question

Question 3

Not yet answered

Marked out of 1

Flag question

A parallel plate air capacitor is made using two plates 0.2 m^2 spaced 1 cm apart. It is connected to a 50 V battery. What is the charge on each plate?

Select one:

- ☐ a. 2.85nC
- ☐ b. 9.15nC
- ☐ c. 8.85nC
- ☐ d. 2.05nC

Question 4

Not yet answered

Marked out of 1

Flag question

The constant k_e , which appears in Coulomb's law formula, is equivalent dimensionally to which of the following?

**Question 5**

Not yet answered

Marked out of 1

Flag question

A straight wire of length 0.20 m moves at a speed of 3.0 m s^{-1} 90° to magnetic field of flux density 0.10 T. Find the induced e.m.f

Select one:

- ☐ a. 0.5 V
- ☒ b. 0.06 V
- ☐ c. 0.05 V
- ☐ d. 0.04 V

Question 6

Not yet answered

Marked out of 1

Flag question

If a $50\mu\text{F}$ capacitor is connected across an alternating electromotive force describe by



c. 1:2

☒ d. $V_2:1$ **Question 10**

Not yet answered

Marked out of 1

[Flag question](#)

When DC voltage is applied to a capacitor, it

Select one:

- ☐ a. Acts as a short circuit at the instance of applied voltage and then as an open circuit once fully charged
- ☐ b. Acts as an open circuit from the beginning
- ☐ c. Acts as a short circuit
- ☐ d. None of these

Question 11

Not yet answered

Marked out of 1

[Flag question](#)

An inductor of inductance 4.0mH has a resistance of 15Ω . What is its impedance when its inductive reactance is equal to its resistance.

Question 9

Not yet answered

Marked out of 1

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Two identical conducting plates of plate area A are separated by a distance d to form a parallel plate air capacitor. Now a metal sheet of thickness $d/2$ is inserted between the plates of the capacitor. The ratio of capacitance before the insertion and after the insertion of plate is

Select one:

- ☐ a. 1:2
- ☐ b. 1:1
- ☐ c. 1:2
- ☒ d. $\sqrt{2}$:1

Question 10

Not yet answered

Marked out of 1

 Flag question

When DC voltage is applied to a capacitor, it

Select one:

- ☐ a. Acts as a short circuit at the instance of applied voltage and then as an

- ☐ c. $V = \frac{3q}{4\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$ $V = \frac{3q}{4\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$
☐ d. $V = \frac{q}{12\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$ $V = \frac{q}{12\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$

Question 6

Not yet answered

Marked out of 1

Flag question

Calculate the flux through a coil loop of area 0.45m^2 when its plane is inclined at an angle of 60° to a magnetic field of 1.15T

Select one:

- ☐ a. 0.17wb/m^2
☐ b. 0.45wb/m^2
☐ c. 4.06wb/m^2
☐ d. 5.73wb/m^2

Question 7

Not yet answered

Marked out of 1

Flag question

The sum of the emf's and potential differences around a closed loop equals zero" is a consequence of:

A simple electric motor needs to supply a maximum torque of 10 Nm. It uses 0.1 A current. The magnetic field in the motor is 0.2 T. If the coil is a circle with radius 2 cm, how many turns are expected to be in the coil?

Select one:

- ☐ a. $\sim 3 \times 10^6$ turns
- ☐ b. $\sim 2 \times 10^6$ turns
- ☐ c. $\sim 1 \times 10^6$ turns
- ☐ d. $\sim 4 \times 10^6$ turns



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How many excess electrons must be placed on each of two small spheres spaced 3 cm apart, if the repulsive force between the spheres is to be 10^{-18} N? ($e = 1.6 \times 10^{-19}$ C, $k = 9 \times 10^9$ $\text{Nm}^2 \text{C}^{-2}$)

Select one:

- ☐ a. 5.00×10^0 electrons
- ☐ b. 1.98×10^3 electrons
- ☐ c. 3.16×10^{16} electrons
- ☐ d. 3.16×10^{-16} electrons



Question 9

Not yet answered

Marked out of 1

[Flag question](#)

Three point charges lie along the x -axis. The positive charge $q_1 = 15.0 \text{ nC}$ is at $d = 2.00 \text{ m}$ from the origin, the positive charge $q_2 = 6.00 \text{ nC}$ is at the origin, and the resultant force acting on q_3 (which is negative) is zero. What is the x coordinate of q_3 ?

Select one:

- ☐ a. 0.775 m
- ☐ b. 0.376 m
- ☐ c. 0.875 m
- ☐ d. 0.795 m

Question 10

Not yet answered

Marked out of 1

[Flag question](#)

A resistor, $100 \text{ }\Omega$, is connected to an a.c. source given as $v = 300\sin \omega t$. If $\omega = 1256 \text{ rad/s}$, find the power dissipated by the resistor.

Select one:

- ☐ a. 900W
- ☐ b. 700W
- ☐ c. 450W
- ☐ d. 300W

An electron is travelling at right angles to a uniform magnetic field of flux density 1.2 mT with a speed of $8 \times 10^6 \text{ m s}^{-1}$, radius of circular path followed by electron is

Select one:

- ☐ a. **3.8 cm**
- ☐ b. **3.7 cm**
- ☐ c. **3.6 cm**
- ☐ d. **3.5 cm**

- ☐ b. 0.39A
- ☐ c. 0.72A

Question 14

Not yet answered

Marked out of 1

 Flag question

Four wires meet at a junction. The first carries 4 A into the junction, the second carries 5 A out of the junction, and the third carries 2 A out of the junction. The fourth carries:

Select one:

- ☐ a. 3 A into the junction
- ☐ b. 7 A out of the junction
- ☐ c. 7 A into the junction
- ☐ d. 3 A out of the junction

Question 15

Not yet answered

Marked out of 1

 Flag question



Question 15

Not yet answered

Marked out of 1

 Flag question

Two identical batteries, each with an emf of 18 V and an internal resistance of $1\ \Omega$, are wired in parallel by connecting their positive terminals together and connecting their negative terminals together. The combination is then wired across a $4\text{-}\Omega$ resistor. The current in the $4\text{-}\Omega$ resistor is:

Select one:

- ☐ a. 1.0 A
- ☐ b. 2.0 A
- ☐ c. 4.0 A
- ☐ d. 3.6 A

Finish attempt ...

 Announcements

Jump to...

A long wire carries a steady current. It is bent into a circle of one turn and the magnetic field at the centre of the coil is B . It is then bent into a circular loop of n turns. The magnetic field at the centre of the coil for same current will be

Select one:

- ☐ a. nB
- ☐ b. $n^2 B$
- ☐ c. $2nB$
- ☐ d. $2n^2 B$



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- ☐ d. conservation of momentum

Question 8

Not yet answered

Marked out of 1

🚩 Flag question

Which is/are correct about the direction of electric field E at a point P ? The field is i. radially outward if the field is positive; ii. radially inward if the field is negative; iii. radially inward if the field is positive; iv. radially outward if the field is negative.

Select one:

- ☐ a. i & ii
- ☐ b. ii & iii
- ☐ c. iii & iv
- ☐ d. i, ii, iii & iv

Question 9

Not yet answered

Marked out of 1

🚩 Flag question



An electron is travelling at right angles to a uniform magnetic field of flux density 1.2 mT with a speed of $8 \times 10^6 \text{ m s}^{-1}$, radius of circular path followed by electron is

Select one:

- ☐ a. **3.8 cm**
- ☐ b. **3.7 cm**
- ☐ c. **3.6 cm**
- ☐ d. **3.5 cm**

The part of a solid which electrons cannot occupy is called

Select one:

- ☐ a. conduction bands
- ☐ b. valence bands
- ☒ c. forbidden bands
- ☐ d. free bands

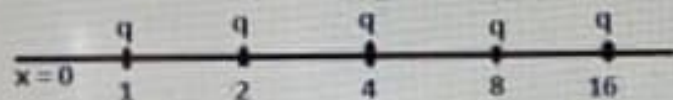
Question 5

Not yet answered

Marked out of 1

[Flag question](#)

An infinite number of charges each equal to q are placed along the x -axis at $x = 1, x = 2, x = 4, x = 8$, and so on. Find the potential and the electric field at the point $x = 0$ due to this set of charges.



Select one:

- ☐ a. $V = \frac{2q}{4\pi\epsilon_0}$ and $E = \frac{4q}{12\pi\epsilon_0}$ $V = \frac{2q}{4\pi\epsilon_0}$ and $E = \frac{4q}{12\pi\epsilon_0}$
- ☐ b. $V = \frac{q}{4\pi\epsilon_0}$ and $E = \frac{2q}{4\pi\epsilon_0}$ $V = \frac{q}{4\pi\epsilon_0}$ and $E = \frac{2q}{4\pi\epsilon_0}$
- ☐ c. $V = \frac{3q}{4\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$ $V = \frac{3q}{4\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$
- ☐ d. $V = \frac{q}{12\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$ $V = \frac{q}{12\pi\epsilon_0}$ and $E = \frac{5q}{4\pi\epsilon_0}$

What is wrong with this picture BELOW? An ammeter is connected to a coil of wire. A magnet is sitting motionless next to the wire such that its south end is near the coil and perpendicular to the plane of the coil as shown BELOW. The meter indicates that a current is flowing through the wire from the left toward the right.



Select one:

- ☐ a. The current should be flowing from the right toward the left.
- ☐ b. The needle should be slanted toward the right.
- ☐ c. The needle should indicate that there is no current flowing.
- ☐ d. There is nothing wrong with the picture

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c. 0.95

d. 1.00

Question 14

Not yet answered

Marked out of 1

Flag question

The potential of a charge in two dimension is given as $V(x,y) = 3x + 4y$. Determine the electric field intensity of the charge in $V/mV/m$

Select one:

a. -7

b. 7

c. 5

Question 15

false

A $10\mu\text{F}$ capacitor is charged by a 24V battery through a $400\text{k}\Omega$ resistor. After 1s, what is the voltage across the resistor?

Select one:

- ☐ a. 5.3V
- ☐ b. 24V
- ☐ c. 29.3V
- ☐ d. 18.7V

☐ d. attraction

Question 9

Not yet answered

Marked out of 1

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Two identical conducting plates of plate area A are separated by a distance d to form a parallel plate air capacitor. Now a metal sheet of thickness $d/2$ is inserted between the plates of the capacitor. The ratio of capacitance before the insertion of plate and after the insertion of plate is

Select one:

- ☐ a. 1:2
- ☐ b. 1:1
- ☐ c. 1:2
- ☐ d. $\sqrt{2}$:1

Question 10

Not yet answered

Marked out of 1

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When DC voltage is applied to a capacitor, it

- ☐ d. Semiconductors are ohmic resistors

Question 2

Not yet answered

Marked out of 1

 Flag question

A dielectric slab is slowly inserted between the plates of a parallel plate capacitor, while the potential difference between the plates is held constant by a battery. As it is being inserted:

Select one:

- ☐ a. the capacitance, the potential difference between the plates, and the charge on the positive plate all increase
- ☐ b. the capacitance and the charge on the positive plate increase but the potential difference between the plates remains the same
- ☐ c. the capacitance, the potential difference between the plates, and the charge on the positive plate all decrease
- ☐ d. the potential difference between the plates increases, the charge on the positive plate decreases, and the capacitance remains the same

Question 3

Not yet answered

Marked out of 1

 Flag question

A 2 m wire is in a 2×10^{-6} T magnetic field pointing into the page. It carries 2 A of current flowing up.

**Question 1**

Not yet answered

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Flag question

If a parallel plate capacitor of plate area 2m^2 and plate separation 1m store the charge of $1.77 \times 10^{-11}\text{ C}$.

What is the voltage across the capacitor?

Select one:

- ☐ a. 1V
- ☐ b. 2V
- ☐ c. 3V
- ☐ d. 4V

Question 2

Not yet answered

Marked out of 1

Flag question

The electric field associated with a uniformly charged hollow metallic sphere is the greatest at:

Question 13

Not yet answered

Marked out of 1

Flag question

What is the relation between current and voltage in a capacitor?

Select one:

- ☐ a. $I = \frac{1}{C} \int V dt$
- ☐ b. $I = C \frac{dV}{dt}$
- ☐ c. $I = \frac{1}{C} \frac{dV}{dt}$
- ☐ d. $I = Ct$

Question 14

Not yet answered

Marked out of 1

Flag question

Which of the following is **TRUE** of THE APPLICATION OF Gauss's law

Select one:

- ☐ a. For spherical charge distribution, the Gaussian surface is a sphere
- ☐ b. For a charge distributions that have the symmetry of an infinite surface uniform plane, the Gaussian surface is a plane
- ☐ c. For a charge distributions that have the symmetry of an infinite surface uniform plane, the Gaussian surface is a "coin-shaped" flat cylinder.
- ☐ d. For charge distribution that have the symmetry of an infinitely long cylinder or wire, the Gaussian surface is coaxial cylinder

Question 15

Not yet answered

Marked out of 1

Flag question

Question 3

Not yet answered

Marked out of 1

🚩 Flag question

Four cells each of e.m.f 1.5 V are connected together in parallel to form a battery. The equivalent e.m.f of the battery is?

Select one:

- ☐ a. 6.0 V
- ☐ b. 1.5 V
- ☐ c. 0.375 V
- ☐ d. 2.667 V

Question 4

Not yet answered

Marked out of 1

🚩 Flag question

The emf of a battery is equal to its terminal potential difference:

Select one:

- ☐ a. under all conditions
- ☐ b. only when the battery is being charged



Question 5

Not yet answered

Marked out of 1

Flag question

An inductor, $L = 0.5H$, in series with a resistor, $R = 250 \Omega$, are connected to an a.c. source $100V$, $50Hz$. Determine the apparent power of the circuit.

Select one:

- ☐ a. 33.9VA
- ☐ b. 34VA
- ☐ c. 68VA
- ☐ d. 17VA

Question 6

Not yet answered

Marked out of 1

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Why is electrical energy usually transmitted at high voltage?

Select one: