

Question 12

Not yet answered

Marked out of 1

Four $20\text{-}\Omega$ resistors are connected in parallel and the combination is connected to a 20-V emf device. The current in the device is:

Select one:

- ☐ a. 0.25 A
- ☐ b. 1.0 A
- ☒ c. 4.0 A
- ☐ d. 5.0 A

Question 13

Not yet answered

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What unit is used for inductance?

Select one:



Select one:

Network connection restored. You may continue safely.

- ☐ a. towards side AB
- ☐ b. towards side BC
- ☐ c. towards side AC
- ☐ d. no direction

Question 15

Not yet answered

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An a.c. waveform given as $v = 290 \sin \omega t$. If $\omega = 1256 \text{ rad/s}$, find the r.m.s and instantaneous voltages respectively at time 0.5s and the period.

Select one:

- ☐ a. 205v, -290v, 5ms
- ☐ b. 289v, 205v, 500ms
- ☐ c. 290v, 290v, 0.5ms
- ☐ d. -290v, 205v, 50ms

[Flag question](#)

- ☒ c. The acceleration is in the direction of the electric field
- ☐ d. The acceleration is infinitely large

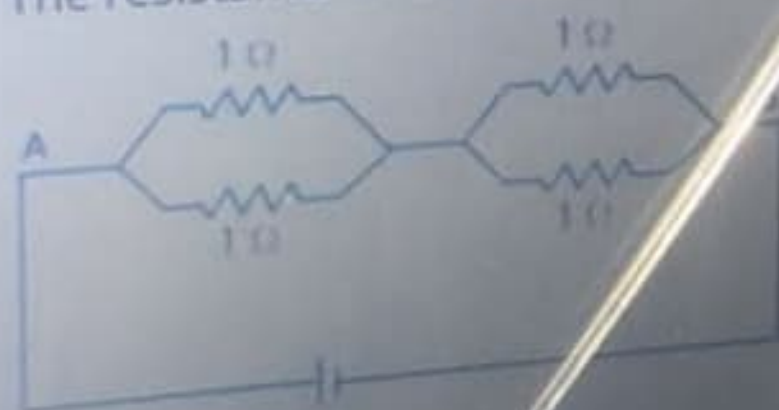
Question 2

Not yet answered

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The resistance across AB is



Select one:

- ☐ a. 4Ω
- ☐ b. 2Ω
- ☐ c. 0.5Ω
- ☐ d. 1Ω

Question 1

Not yet answered

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Flag question

Which of the following is correct about the acceleration of a positively charged particle?

Select one:

- ☐ a. The acceleration is against the direction of the electric field
- ☐ b. The acceleration is uniform
- ☒ c. The acceleration is in the direction of the electric field
- ☐ d. The acceleration is infinitely large

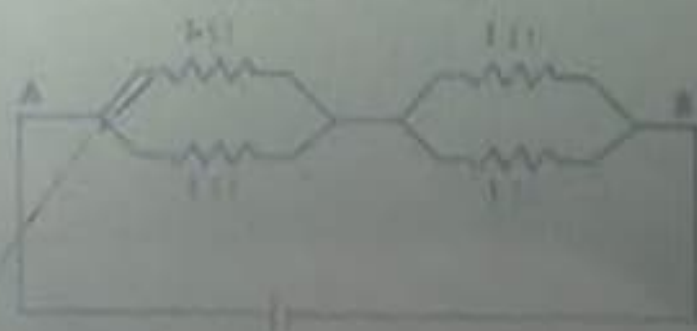
Question 2

Not yet answered

Marked out of 1

Flag question

The resistance across AB is



Select one:

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

Question 3

Not yet answered

Marked out of 1

 Flag question

At what distance of separation would the attractive force between a positive charge and a negative charge be equal to 2 N?

Select one:

- ☐ a. 0.76×10^{-14} m
- ☐ b. 1.52×10^{-14} m
- ☐ c. 0 m
- ☐ d. 4.56×10^{-14} m



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- ☐ a. 88.2%
- ☒ b. 30.6%
- ☐ c. 69.4%

Question 13

Not yet answered

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If the two charges are similar, then Coulomb's law implies that the force F is:

I. attractive; II. repulsive; III. neutral

Select one:

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

Question 14

Not yet answered

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- ☐ c. magnetic flux density
- ☒ d. all of above

Question 6

Not yet answered

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In moving coil galvanometer, pole faces of U-shaped magnet are made concave

Select one:

- ☐ a. to make the field radial
- ☐ b. to increase the field
- ☐ c. to weaken field
- ☒ d. both a and b

Question 7

Not yet answered

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Determine the force on an electron of charge $1.6 \times 10^{-19} \text{C}$ which is placed in a uniform electric field.



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DENTISTRY)

Question 1

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**The current flowing in a semi-circular
shaped conductor forming diameter D in
a field B is given as:**

Select one:

- ☐ a. $\frac{4BD}{\mu_o}$
- ☒ b. $\frac{4\pi BD}{\mu_o}$
- ☐ c. $\frac{4BD}{\pi\mu_o}$
- ☐ d. $\frac{2BD}{\mu_o}$

Question 2

Not yet answered

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A cyclotron is used to

Select one:

- ☒ a. **accelerate charged particles**
- ☐ b. **slow down charged particles**
- ☐ c. **heat up charged particles**



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E.

Question 2

Not yet answered

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A cylindrical surface of radius $5c$ and height 2.5cm is placed in a uniform electric field of 250N/C . Find the maximum electric flux that can pass through the surface.

Select one:

- ☐ a. $1.963 \text{ C}^2 \cdot \text{N}^{-1} \cdot \text{m}^{-2}$
- ☒ b. $1.963 \text{ Nm}^2 \cdot \text{C}^{-1}$
- ☐ c. $0.982 \text{ Nm}^2 \cdot \text{C}^{-1}$
- ☐ d. $0.982 \text{ C}^2 \cdot \text{N}^{-1} \cdot \text{m}^{-2}$

Question 3

Not yet answered

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Flag question

Calculate the capacitance of two plates of area 4cm^2 separated by 1mm

Select one:



Question 9

Not yet answered

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Flag question

In a parallel-plate capacitor, the distance d between the plates is 3cm, the area of each plate is 15cm^2 , and the voltage across them is 5V. Calculate the capacitance. Take permittivity of free space to be $\epsilon_0 = 8.854 \times 10^{-12} \text{C/Nm}^2$.

Select one:

- ☐ a. $3.33 \times 10^{-13} \text{F}$
- ☐ b. $9.31 \times 10^{-11} \text{F}$
- ☒ c. $4.43 \times 10^{-13} \text{F}$
- ☐ d. $1.29 \times 10^{-12} \text{F}$

Question 10

Not yet answered

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Flag question

A coil has 45 turns and an area of $1.8 \times 10^{-2} \text{m}^2$. If the torque on the coil is

$2.5 \times 10^{-2} \text{Nm}$ when placed in a magnetic field of 0.08T, calculate the current flowing in the coil.

A 0.05A

Question 7

Not yet answered

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 Flag question

A given RLC circuit has $R = 100\Omega$, $L = 1\text{H}$ and $C = 10\mu\text{F}$ all connected in series with a source of $200\sin \omega t$ with $\omega = 400$. Calculate the rms current

Select one:

- ☐ a. 0.74A
- ☐ b. 0.78A
- ☐ c. 0.72A
- ☐ d. 1.11A

Question 8

Not yet answered

Marked out of 1

 Flag question

The part of a solid which electrons cannot occupy is called

Select one:

- ☐ a. conduction bands

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

Question 3

Not yet answered

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Flag question

Find the value of two equal charges that repel each other with a force of 0.5N when placed 50cm in vacuum
($k = 9 \times 10^9 \text{ F/M}$)

A. 10.86 μF

Select one:

- ☐ a. 1.7 μF
- ☐ b. 1.67 μF
- ☐ c. 1.086 μF

Question 4

Not yet answered

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Flag question

The field due to its spin on its axis. The field is similar to that created by a current of $1.05 \times 10^4 \text{ A}$.

Question 9

Not yet answered

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 Flag question

In a parallel plate capacitor, the distance d between the plates is 3cm, the area of each plate is 15cm^2 , and the voltage across them is 5V. Calculate the capacitance. Take permittivity of free space to be $\epsilon_0 = 8.854 \times 10^{-12} \text{C/Nm}^2$ $\epsilon_0 = 8.854 \times 10^{-12} \text{C/Nm}^2$.

Select one:

- ☐ a. $3.33 \times 10^{-13} \text{F}$ $3.33 \times 10^{-13} \text{F}$
- ☐ b. $9.31 \times 10^{-13} \text{F}$ $9.31 \times 10^{-13} \text{F}$
- ☐ c. $4.43 \times 10^{-13} \text{F}$ $4.43 \times 10^{-13} \text{F}$
- ☐ d. $1.29 \times 10^{-12} \text{F}$ $1.29 \times 10^{-12} \text{F}$

Question 10

Not yet answered

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 Flag question

A coil has 45 turns and an area of $1.8 \times 10^{-2} \text{m}^2$. If the torque on the coil is

$2.5 \times 10^{-2} \text{Nm}$ when placed in a magnetic field of 0.08T, calculate the current flowing in the coil.

☐ d. 0.2749A

Question 10

Not yet answered

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[Flag question](#)

Which of the following is TRUE about the valence band of phosphorus in an N-type semiconductor.

Select one:

- ☒ a. It is closer to the conduction band than the valence band of the semiconductor.
- ☐ b. It is closer to the valence band than the conduction band of the semiconductor.
- ☐ c. It overlaps with the valence band of the semiconductor
- ☐ d. It overlaps with the conduction band of the semiconductor.

Question 11

Not yet answered

Marked out of 1

[Flag question](#)

The process by which an emf and hence current is generated or induced in a conductor when there is a change in the magnetic flux linking the conductor is called

Select one:

- ☐ a. electromagnetic induction

- ☐ b. $9.31 \times 10^{-11} F$ $9.31 \times 10^{-11} F$
- ☐ c. $4.43 \times 10^{-13} F$ $4.43 \times 10^{-13} F$
- ☐ d. $1.29 \times 10^{-12} F$ $1.29 \times 10^{-12} F$

Question 10

Not yet answered

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[Flag question](#)

A coil has 45 turns and an area of $1.8 \times 10^{-2} m^2$. If the torque on the coil is

$2.5 \times 10^{-2} Nm$ when placed in a magnetic field of $0.08 T$, calculate the current flowing in the coil.

A 0.05A

Select one:

- ☐ a. 0.08A
- ☐ b. 0.39A
- ☐ c. 0.72A

Question 11

Not yet answered

Marked out of 1

[Flag question](#)

The energy band in which free electrons exist is

Not yet answered

Marked out of 1

Flag question

Which of the following is not correct about Gauss's law?

- I. The net charge q_{enc} is the algebraic sum of all the enclosed positive and negative charges.
- II. The net charge q_{enc} can be positive, negative or zero
- III. The net charge q_{enc} cannot be determined
- IV. The net charge q_{enc} is in the direction of the applied field

Select one:

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

Question 3

Not yet answered

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... with a force of 0.5N when placed 50cm in vacuum

- ☒ d. Carbon

Question 7

Not yet answered

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 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 induced charge Q_{ind} on each face of the dielectric.

Select one:

- ☐ a. $0.00354 \times 10^{-8} \text{ C}$
- ☐ b. $0.354 \times 10^{-8} \text{ C}$
- ☐ c. $3.54 \times 10^{-8} \text{ C}$
- ☐ d. $35.4 \times 10^{-8} \text{ C}$

Question 8

Not yet answered

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A 6 mF capacitor and a 3 mF capacitor are connected in series across an 18 volts d.c source. Calculate the charge on each capacitor.

Select one:



☐ c. $1.086 \mu\text{F}$

Question 4

Not yet answered

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A proton has magnetic field due to its spin on its axis. The field is similar to that created by a circular current loop $0.650 \times 10^{-15} \text{ m}$ in radius with a current of $1.05 \times 10^4 \text{ A}$. Find the maximum torque on a proton in a 2.50 T field

Select one:

- ☐ a. $3.84 \times 10^{-26} \text{ N}\cdot\text{m}$
- ☐ b. $3.48 \times 10^{-26} \text{ N}\cdot\text{m}$
- ☐ c. $38.4 \times 10^{-26} \text{ N}\cdot\text{m}$
- ☐ d. $34.8 \times 10^{-26} \text{ N}\cdot\text{m}$

Question 5

Not yet answered

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When a glass rod is rubbed with silk, which of the following statements best describes what happens?

The period of a given sinusoidal a.c. waveform is 0.005s, which of the following best represents that waveform?

Select one:

- ☐ a. $v = V \sin 1257\omega t$
- ☐ b. $v = V \sin 0.005 \omega t$
- ☒ c. $v = V \sin 1257t$
- ☐ d. $v = V \cos \omega t$

Question 2

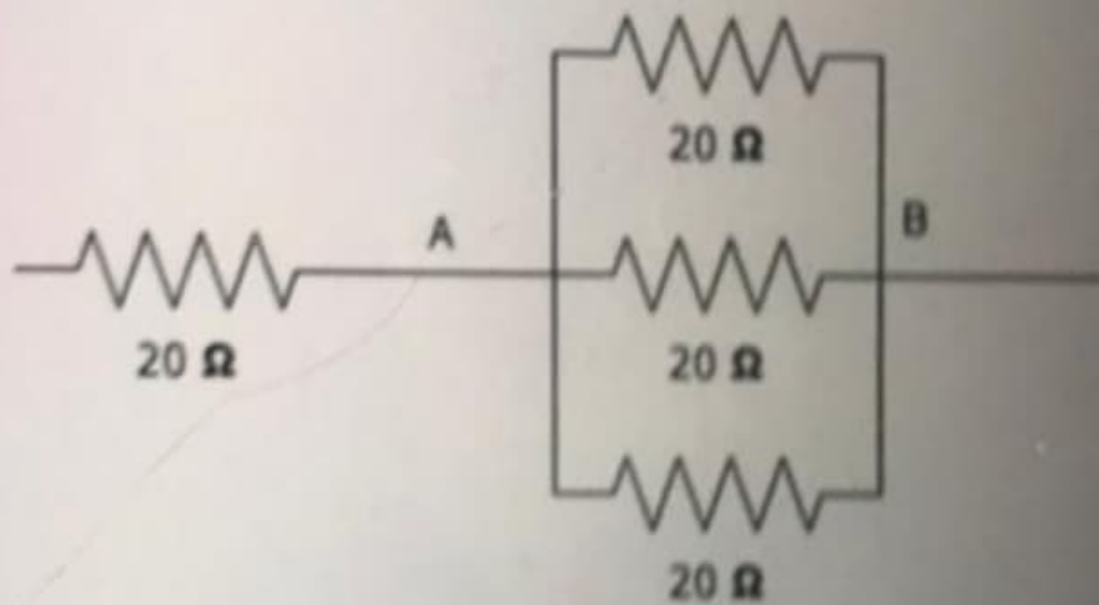
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Calculate the equivalent resistance between A and B.

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



Select one:

- ☐ a. 6.67 ohm
- ☐ b. 46.67 ohm
- ☐ c. 26.67 ohm
- ☐ d. 10.67 ohm

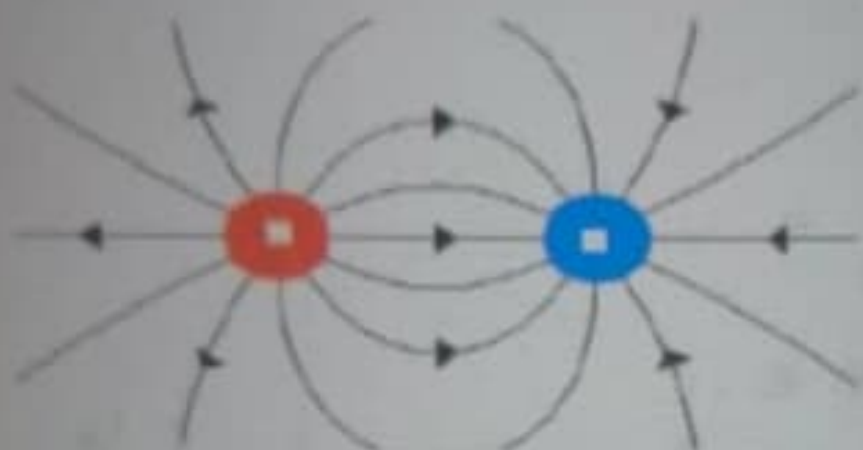
Question 11

Not yet answered

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In the figure below, a, b are:



Select one:

- ☐ a. (+, -)
- ☐ b. (+, +)
- ☐ c. (-, +)
- ☐ d. (-, -)

Question 12

Not yet answered

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☐ d. (-, -)

Question 12

Not yet answered

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A transformer which is 80% efficient gives an output of 12V and 4A. What is the input power?

Select one:

- ☐ a. 13W
- ☐ b. 38W
- ☐ c. 60W
- ☐ d. 154W

Question 13

Not yet answered

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 Flag question

Capacitance 15F and 5F are connected in

- ☒ a. electromagnetic induction
- ☐ b. mutual induction
- ☐ c. Faraday's law
- ☐ d. Electromagnetic interference

Question 12

Not yet answered

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Flag question

Which of the following statement(s) is/are correct?

- I. intrinsic conduction is by majority carriers
- II. doping is addition of electrons to a semiconductor
- III. Extrinsic conduction is by minority carriers

Select one:

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

Question 4

Not yet answered

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Two long parallel wire are 40mm apart. If current of 20A and 30A are applied to the wire in the same direction. Find the force of attraction of wire per unit length.

A. 0.003N/m

Select one:

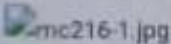
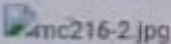
- ☒ a. 0.3N/m
- ☐ b. 3N/m
- ☐ c. 30N/m

Question 5

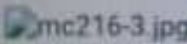
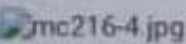
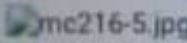
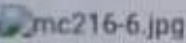
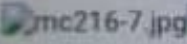
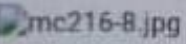
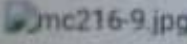
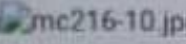
Not yet answered

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Flag question

In a parallel-plate capacitor, the distance d between the plates is 3cm, the area of each plate is 15cm^2 , and the voltage across them is 5V. Calculate the capacitance. Take permittivity of free space to be  

Select one:

- ☐ a.  
- ☐ b.  
- ☐ c.  
- ☐ d.  

Question 6

Not yet answered

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Flag question

When a quadrivalent element is doped with a pentavalent element, it becomes

Select one:

- ☐ a. neutral semi-conductor
- ☐ b. P-type semi-conductor
- ☐ c. pure semi-conductor
- ☒ d. N-type semi-conductor

Question 7

Not yet answered

Marked out of 1

Flag question

Select the option that best describes a dielectric.

Select one:

- ☐ a. neutral semi-conductor
- ☐ b. P-type semi-conductor
- ☐ c. pure semi-conductor
- ☒ d. N-type semi-conductor

Question 7

Not yet answered

Marked out of 1

Flag question

Select the option that best describes a dielectric.

Select one:

- ☐ a. A dielectric is a non-conducting material.
- ☐ b. A dielectric is the material when placed between the plates of a capacitor will increase the electric field.
- ☐ c. A dielectric is something that when placed between the plates decreases the capacitance of the capacitor.
- ☐ d. All of these choices are true

Question 8

Not yet answered

Marked out of 1

Flag question

The battery connection required to forward bias PN junction are

Select one:

- ☐ a. +ve terminal to P and -ve terminal to N
- ☐ b. -ve terminal to P and +ve terminal to N
- ☐ c. -ve terminal to P and -ve terminal to N
- ☐ d. none of the above

Question 9

Not yet answered

Marked out of 1

Flag question

Which of the following cannot be the units of electric intensity?

Select one:

- ☒ a. N/C
- ☐ b. J/C
- ☐ c. J/Cm

- ☐ a. I, II
- ☐ b. I, II & III
- ☐ c. II & III
- ☐ d. I & III

Question 14

Not yet answered

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Work done in charging a capacitor is given by

Select one:

- ☐ a. $(1/2)QV$
- ☐ b. $2QV$
- ☐ c. QV
- ☐ d. $2V$

Question 15

Not yet answered

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 Flag question

The number of electrons in the valence shell of a semiconductor is

Select one:

- ☐ a. 1
- ☐ b. 2
- ☐ c. 3
- ☐ d. 4

Question 8

Not yet answered

Marked out of 1

 Flag question

A charged particle is placed in a uniform magnetic field and negligible gravitational field. When released it will exhibit constant

Select one:

- ☐ a. Acceleration
- ☐ b. velocity
- ☐ c. speed
- ☐ d. position



☐ b. 20m/s

D. 1m/s

Question 4

Not yet answered

Marked out of 1

 Flag question

In the circuit below the voltmeter reading will be....?

Select one:

☐ a. 2 V

☐ b. 0.5 V

☐ c. 1 V

☐ d. 0 V

Question 5

Not yet answered

Marked out of 1

 Flag question

Out of the following statements concerning an electric field, which

Question 15

Not yet answered

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Flag question

The equation of a sinusoidal waveform is given by $i = 15 \sin \omega t$. Calculate the r.m.s value of current at $t = 5s$.

Select one:

- ☐ a. 21.7A
- ☐ b. 15.8A
- ☐ c. 10.6A
- ☐ d. 7.5A

Finish attempt ...

← Announcements

Jump to... 

Question 3

Not yet answered

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Flag question

A -2.3×10^{-6} C charge exerts a repulsive force of magnitude 0.35 N on an unknown charge 0.20 m away. What are the magnitude and polarity of the unknown charge?

Select one:

- ☐ a. 6.8×10^{-7} C Negative
- ☐ b. 6.8×10^{-7} C Positive
- ☐ c. 1.2×10^{-6} C Negative
- ☐ d. 1.2×10^{-6} C Positive

Question 4

Not yet answered

Marked out of 1

Flag question

the resistivity of

- ☐ d. none of the above

Question 2

Not yet answered

Marked out of 1

Flag question

Emf induced in a coil rotating in a uniform magnetic field will be maximum when the

Select one:

- ☐ a. the flux linking with the coil is maximum
- ☐ b. rate of change of flux linkage is maximum
- ☐ c. rate of change of flux linkage is minimum
- ☐ d. the rate of cutting flux by the coil is minimum

Question 3

Not yet answered

Marked out of 1

Flag question

A battery of emf 4v and internal resistance of 2 Ohms is joined to a resistor of 8 Ohms. Calculate the terminal p.d

Select one:

- ☐ a. 3.2v
- ☐ b. 4.8v
- ☐ c. 24v
- ☐ d. 4.8v

Question 4

Not yet answered

Marked out of 1

Flag question

Two long parallel wire are 40mm apart. If current of 20A and 30A are applied to the wire in the same direction. Find the force of attraction of wire per unit length.

A. 0.003N/m

Select one:

- ☐ a. 0.3N/m
- ☐ b. 3N/m
- ☐ c. 30N/m

Question 5

Not yet answered

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Flag question

In a parallel-plate capacitor, the distance d between the plates is 3cm, the area of each plate is 15cm^2 , and the voltage across them is 5V. Calculate the capacitance. Take permittivity of free space to be $\epsilon_0 = 8.854 \times 10^{-12} \text{C/Nm}^2$.

Select one:

The capacitance of a capacitor is the ratio

Select one:

- ☒ a. charge to p.d. between plates
- ☐ b. p.d. between plates to plate spacing
- ☐ c. p.d. between plates to thickness of dielectric
- ☐ d. p.d. between plates to charge

Question 13

Not yet answered

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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

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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

Energy stored in 2000mF capacitor charged to a potential difference of 10V is?

Select one:

- ☒ a. 100J
- ☐ b. 200J
- ☐ c. 300J
- ☐ d. 400J



Finish attempt

$$\phi = \tan^{-1}(X_L - X_C)$$

Question 13

Not yet answered

Marked out of 1

 **Flag question**

Which of the following copper conductor that has the least resistance is:

Select one:

- ☐ a. thin, long and hot
- ☐ b. thick, short and cool
- ☐ c. thick, long and hot
- ☐ d. thin, short and cool

Question 14

Not yet answered

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 **Flag question**

The resistivity of a semiconductor depends on its



AA



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Marked out of 1

Flag question

The capacitor has a capacitance of $4.0 \mu\text{F}$. The resistor has resistance of $2.5 \text{ M}\Omega$. Calculate the maximum value of the charging current and the charge stored by the capacitor when the capacitor is fully charged.

Select one:

- ☐ a. $4 \mu\text{A}$, $40 \mu\text{C}$
- ☐ b. $40 \mu\text{A}$, $400 \mu\text{C}$
- ☐ c. $40 \mu\text{A}$, $40 \mu\text{C}$
- ☐ d. $4.0 \mu\text{A}$, $4.0 \mu\text{C}$

Question 10

Not yet answered

Marked out of 1

Flag question



Magnetic lines of force have all but



Question 9

Not yet answered

Marked out of 1

Flag question

If the separation of plates of a parallel plate capacitor is halved, its capacitance?

Select one:

- ☒ a. is increases by two times
- ☐ b. will remain same
- ☐ c. is decreases by two times
- ☐ d. None of these

Question 10

Not yet answered

Marked out of 1

Flag question

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 11

Not yet answered

Marked out of 1

Flag question

When an alternating signal flows through a capacitor,

Select one:

- ☐ a. Voltage leads current by 90°
- ☐ b. current leads voltage by 90°
- ☐ c. current lags voltage by 90°
- ☒ d. current and voltage are in phase

Question 12

Not yet answered

Marked out of 1

Flag question

The capacitance of a capacitor is the ratio

Select one:

- ☒ a. charge to p.d. between plates
- ☐ b. p.d. between plates to plate spacing
- ☐ c. p.d. between plates to thickness of dielectric
- ☐ d. p.d. between plates to charge

Question 13

Not yet answered

Marked out of 1

Flag question

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

Calculate the efficiency of a motor of 240v that requires 12A to lift a 600kg load at a rate of 0.15m/s.

Select one:

- ☐ a. 28.80%
- ☐ b. 88.2%
- ☐ c. 30.6%
- ☐ D. 69.4%

Question 9

Not yet answered

Marked out of 1

 **Flag question**

The capacitor has a capacitance of $4.0 \mu\text{F}$. The resistor has resistance of $2.5 \text{ M}\Omega$. Calculate the maximum value of the charging current and the charge stored by the capacitor when the capacitor is fully charged.

Select one:

- ☐ a. $4 \mu\text{A}$, $40 \mu\text{C}$
- ☐ b. $40 \mu\text{A}$, $400 \mu\text{C}$
- ☐ c. $40 \mu\text{A}$, $40 \mu\text{C}$
- ☐ d. $4.0 \mu\text{A}$, $4.0 \mu\text{C}$

Question 10

Not yet answered

Marked out of 1

 **Flag question**

Magnetic lines of force have all but one of the following characteristics.



d. valence band

Question 5

Not yet answered

Marked out of 1

Flag question

Which of the following factors does **not** affect the capacitance of a capacitor.

Select one:

- ☐ a. common area of plates
- ☐ b. distance between plates
- ☐ c. permittivity of di-electric
- ☐ d. permeability of di-electric

Question 6

Not yet answered

Marked out of 1

Flag question

In a semiconductor, what is responsible for conduction?

Select one:

- ☐ a. Electrons only
- ☐ b. Holes only
- ☐ c. Both electrons and holes
- ☐ d. Neither electrons nor holes

Question 7

Not yet answered

Marked out of 1

Flag question

When field is parallel to plane of area, magnetic flux through coil is

Select one:

- ☐ a. zero
- ☐ b. infinite
- ☐ c. 2
- ☐ d. 5

Question 8

Not yet answered

Marked out of 1

Flag question

Find the work done (in eV) by an agent in taken a charge $q_0 = 20 \mu\text{C}$ from point X to point Y if the electric potential between X and Y is 35 V.

Select one:

- ☐ a. 7.0×10^{-4}
- ☐ b. 3.6×10^{14}
- ☐ c. 2.2×10^{15}
- ☐ d. 0

Question 9

Not yet answered

Marked out of 1

Flag question

force acting on conductor is

Select one:

- ☐ a. $BIL \cos \theta$
- ☒ b. $BIL \sin \theta$
- ☐ c. $BIL \tan \theta$
- ☐ d. $BL \sin \theta$

Question 13

Not yet answered

Marked out of 1

Flag question

The total flux emerging from a given charge is independent of the medium surrounding it. This is the statement of

Select one:

- ☐ a. Gauss's law
- ☐ b. Kirchhoff's law
- ☐ c. Ohm's law
- ☐ d. Coulomb's law

Question 14

Not yet answered

Marked out of 1

Flag question

From the Coulomb's law, what will be the slope of the graph of $\log F$ vs $\log r$?

Select one:

- ☐ a. $\frac{1}{2}$
- ☐ b. 2
- ☐ c. $-\log 2$
- ☐ d. -2

Question 15

Not yet answered

Marked out of 1

Flag question

Suppose I have a uniform electric field within a parallel plate capacitor with field strength $E = 41 \text{ NC}$. Suppose the capacitor's plates are 0.5 m in length and 0.001 m in width, and the space between the plates is 1.5 cm . What is the voltage difference across the capacitor?

Select one:

- ☐ a. 0.475 V
- ☐ b. 5.5 V
- ☐ c. 61.5 V

Question 8

Not yet answered

Marked out of 1

Flag question

Find the work done (in eV) by an agent in taken a charge $q_0 = 20 \mu\text{C}$ from point X to point Y if the electric potential between X and Y is 35 V.

Select one:

- ☐ a. 7.0×10^{-4}
- ☐ b. 3.6×10^{14}
- ☐ c. 2.2×10^{15}
- ☐ d. 0

Question 9

Not yet answered

Marked out of 1

Flag question

A 20kOhms resistor is connected in series with a resistance of 40kOhms. What resistance R must be connected in parallel with its equivalent resistance to give 20kOhms

Select one:

- ☐ a. 120kOhms
- ☐ b. 30kOhms
- ☐ c. 10kOhms
- ☐ d. 20kOhms

Question 10

Not yet answered

Marked out of 1

Flag question

In a parallel-plate capacitor, the distance d between the plates is 3cm, the area of each plate is 15cm^2 , and the voltage across them is 5V. Calculate the capacitance. Take permittivity of free space to be $\epsilon_0 = 8.854 \times 10^{-12} \text{C/Nm}^2$.

Select one:

- ☐ a. $3.33 \times 10^{-13} \text{F}$ $3.33 \times 10^{-13} \text{F}$
- ☐ b. $9.31 \times 10^{-11} \text{F}$ $9.31 \times 10^{-11} \text{F}$
- ☐ c. $4.43 \times 10^{-13} \text{F}$ $4.43 \times 10^{-13} \text{F}$
- ☐ d. $1.29 \times 10^{-12} \text{F}$ $1.29 \times 10^{-12} \text{F}$

Question 11

Not yet answered

Marked out of 1

Flag question

Calculate the force on a wire of length 5cm carrying a current of 30A if it is placed perpendicular to a magnetic field of intensity 0.8T.

Select one:

- ☐ a. 10.5N
- ☐ b. 5.4N
- ☐ c. 3.8N

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Question 1

Not yet answered

Marked out of 1

Flag question

The phenomenon of producing an induced emf with the aid of a magnetic field is

Select one:

- ☐ a. called electromotive production.
- ☐ b. almost never observed.
- ☐ c. a scientific curiosity with no practical application.
- ☐ d. called electromagnetic induction.

Question 2

Not yet answered

Marked out of 1

Flag question

A dielectric $K = 2$ is inserted between the plates of a $20\mu\text{F}$ capacitor. Its capacitance will become?

Select one:

- ☐ a. $18\mu\text{F}$
- ☐ b. $28\mu\text{F}$
- ☐ c. $12\mu\text{F}$
- ☐ d. $40\mu\text{F}$

Question 3

Not yet answered

Marked out of 1

Flag question

KCL deals with the conservation of?

Select one:

- ☐ a. Momentum
- ☐ b. Mass

AA

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