

Question 6

Not yet answered

Marked out of 1

 Flag question

Which of the following is true about p-n junction diode? i. Forward bias current rises linearly. Reverse bias current is absolutely zero. iii. Width of depletion region is unchanged when forward biased.

Select one:

- ☐ a. i, iii.
- ☐ b. ii, iii.
- ☐ c. 1, ii
- ☐ d. none

Question 7

Not yet answered

Marked out of 1

 Flag question

Question 6

Not yet answered

Marked out of 1

Flag question

Direction of conventional current is

Select one:

- ☐ a. direction of neutron flow
- ☐ b. direction of electron flow
- ☐ c. direction of flow of positive charge
- ☐ d. same as that of electric current

Question 7

Not yet answered

Marked out of 1

Flag question

Which of following statements is **CORRECT**?

Select one:

- ☐ a. In theoretical calculation it usually of potential of isolated system it is usually convenient to take a point at infinite distance as infinite potential
- ☐ b. For most practical situation, the earth is taken as having zero potential
- ☐ c. For most practical situation, the earth is taken as having infinite potential
- ☐ d. In theoretical calculation it usually of potential of isolated system it is usually convenient to take a point at infinite distance as non-zero potential

Question 8

Not yet answered

Marked out of 1

Flag question

Which of the following is not true about doping of semiconductor?

Select one:

- ☐ a. doping with group III element leads to p-type semiconductor.
- ☐ b. doping with group V element leads to n-type semiconductor.
- ☐ c. doping with group III elements leads to excess holes in valency band.
- ☐ d. doping with group V elements leads to excess holes in the conduction band.

Question 9

Not yet answered

Marked out of 1

Flag question

A parallel plate air capacitor with no dielectric between the plates is connected to the constant voltage source. How would capacitance and charge change if dielectric of dielectric constant $K=2$ is inserted between the plates. C_1 and Q_1 are

Question 6

Not yet answered

Marked out of 1

Flag question

Consider the figure and value of capacitances given in the Question 9 if a 4Volt battery is connected between points A and B total charge stored on the capacitors would be

Select one:

- ☐ a. 13.8 μC
- ☐ b. 10 μC
- ☐ c. 22 μC
- ☐ d. 4 μC

Question 7

Not yet answered

Marked out of 1

Flag question

The weight of a charge-bearing oil droplet with charge 10^{-10} e in an electric field in Millikan's apparatus is 10^{-5} kg . If the droplet is located midway between the plates which are 10cm apart, determine the electric field strength needed to keep the droplet suspended.

Select one:

- ☐ a. $1.25 \times 10^4 \text{ V/m}$
- ☐ b. $2 \times 10^4 \text{ V/m}$
- ☐ c. $2 \times 10^{-14} \text{ V/m}$
- ☐ d. $1.25 \times 10^5 \text{ V/m}$

☒ d. joule second

Question 8

Not yet answered

Marked out of 1

 Flag question

Three charges $q_1 = 1\text{mC}$, $q_2 = 5\text{mC}$ and $q_3 = 9\text{mC}$ are arranged on a line with q_2 at the middle of the other two. If the distance between q_1 and q_2 is 7cm while between q_1 and q_3 is 16cm, determine the total force acting on q_2 as well as the direction.

Select one:

- ☐ a. $4.1 \times 10^7 \text{ N}$, towards q_1
- ☐ b. $4.1 \times 10^7 \text{ N}$, towards q_3
- ☐ c. $2.8 \times 10^{-9} \text{ N}$, left
- ☐ d. $2.8 \times 10^{-9} \text{ N}$, right

Question 9

Not yet answered

Marked out of 1

 Flag question



Question 2

Not yet answered

Marked out of 1

 Flag question

A galvanometer of 50 Ω gives full scale deflection with 2 mA current. To convert it into ammeter, range of 10 A is connected with it, shunt resistance should be

Select one:

- ☐ a. 0.1 Ω
- ☐ b. 0.2 Ω
- ☐ c. 0.01 Ω
- ☐ d. 0.02 Ω

Question 3

Not yet answered

Marked out of 1

 Flag question

The resonant frequency of a circuit is 1000KHz. If each of the capacitance and inductance in the circuit is reduced by 50% and other changes

- ☐ b. normal to the wire
- ☒ c. tangent to the wire
- ☐ d. circular

Question 12

Not yet answered

Marked out of 1

[Flag question](#)

In a p-type semiconductor, the current conduction is due to

Select one:

- ☐ a. Holes
- ☐ b. Atoms
- ☐ c. Electrons
- ☐ d. Protons

Question 13

Not yet answered

Marked out of 1

[Flag question](#)

Light bulb has input power consumption of 50 watts. The light bulb was activated for 60 seconds and produced heat of 2400 joules. Find the efficiency of the light bulb.

Select one:

- ☐ a. 20%
- ☐ b. 80%
- ☐ c. 12.5%
- ☐ d. 60%

Question 14

Not yet answered

Marked out of 1

[Flag question](#)

Three resistors (2 Ohms, 4 Ohms, 5 Ohms) are connected in parallel with a potential difference of 20v maintained across them find the total current

Select one:

- ☐ a. 10A
- ☐ b. 2A
- ☐ c. 11A
- ☐ d. 19A

Question 15

Not yet answered

Marked out of 1

[Flag question](#)

The capacitor has a capacitance of 4.0 μF . 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. 40A, 40 μC
- ☐ b. 400A, 400 μC
- ☐ c. 400A, 40 μC
- ☐ d. 4.0A, 4.0 μC

Question 6

Not yet answered

Marked out of 1

 Flag question

Total potential difference across the combination of three cells becomes maximum when?

Select one:

- ☐ a. Two cells are connected in parallel and third cells in series with combination.
- ☐ b. All three cells are connected in series
- ☐ c. All three cells are connected in parallel
- ☐ d. Two cells are connected in series and third cells in parallel with the combination.



Question 4

Not yet answered

Marked out of 1

 **Flag question**

The plates of a parallel plate air capacitor are charged to 100 V. A 2mm plate is inserted between the plates of the capacitor. To maintain the same potential difference, the distance between the capacitor plates is increased by 1.6mm. The dielectric constant of the plate is

Select one:

- ☐ a. 1.25
- ☐ b. 5
- ☐ c. 2.5
- ☐ d. 4

Question 5

Not yet answered

Marked out of 1

 **Flag question**

When a diode is forward biased, the depletion region...

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

A 0

Select one:

- ☐ a. **0.84**
- ☐ b. **0.85**
- ☐ c. **1.00**



Question 7

Not yet answered

Marked out of 1

 Flag question

The flux linking a coil changes from 5.0×10^{-4} wb to 2.2×10^{-4} wb in 0.025 seconds. Calculate the average e.m.f. induced in the coil if it has 500 turns

Select one:

- ☐ a. -5.6V
- ☐ b. -4.3V
- ☐ c. -3.8V
- ☐ d. -2.7V

Question 8

Not yet answered

Marked out of 1

 Flag question

In transformer, core is made up of soft iron in order to pass maximum

Question 9

Not yet answered

Marked out of 1

Flag question

A parallel plate air capacitor with no dielectric between the plates is connected to the constant voltage source. How would capacitance and charge change if dielectric of dielectric constant $K=2$ is inserted between the plates. C_0 and Q_0 are the capacitance and charge of the capacitor before the introduction of the dielectric.

Select one:

- ☐ a. $C=C_0/2$ and $Q=2Q_0$
- ☐ b. $C=2C_0$ and $Q=Q_0/2$
- ☐ c. $C=C_0/2$ and $Q=Q_0/2$
- ☐ d. $C=2C_0$ and $Q=2Q_0$

Question 10

Not yet answered

Marked out of 1

Flag question

A galvanometer has spring constant 'k', a magnetic field 'B' and deflection angle θ . The coil has N turns and an area A . Which of the following is the condition for equilibrium of the coil when current I flows in the galvanometer.

Select one:

- ☐ a. $KB = \theta IAN$
- ☐ b. $K\theta = BIAN$
- ☐ c. $BI = K\theta AN$
- ☐ d. $K\theta = BA/IN$

Question 11

Not yet answered

Marked out of 1

Flag question

Field which does not have magnetic poles is

Select one:

- ☐ a. straight lined
- ☐ b. normal to the wire
- ☐ c. tangent to the wire
- ☐ d. circular

Question 12

Not yet answered

Marked out of 1

Flag question

In a p-type semiconductor, the current conduction is due to

Select one:

- ☐ a. Holes
- ☐ b. Atoms
- ☐ c. Electrons
- ☐ d. Protons

Question 12

Not yet answered

Marked out of 1

 Flag question

A transformer assumed to be 100% efficient has 2500 turns at the primary and 50 turns at the secondary. What is the value of the primary voltage that is required to produce 4.4V at the secondary.

Select one:

- ☐ a. 110V
- ☐ b. 160V
- ☐ c. 180V
- ☒ d. 220V

Question 13

Not yet answered

Marked out of 1

 Flag question

Question 15

Not yet answered

Marked out of 1

 Flag question

If electrons flow from the earth to a body, the body is said to have

Select one:

- ☐ a. Zero potential
- ☒ b. Negative potential
- ☐ c. Positive potential
- ☐ d. Absolute potential

Finish after

Question 1

Not yet answered

Marked out of 1

Flag question

The force on a charged particle depends on which of the following factors?

- I. The charge on the body
- II. The strength of the intensity of the field
- III. The distance between the body and a test charge

Select one:

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

Question 2

Not yet answered

Marked out of 1

Flag question

Which of the following is not true with respect to semiconductors?

Select one:

- ☐ a. doping alters the balance of carriers in intrinsic material.
- ☐ b. doping improves conductivity.
- ☐ c. doped materials are immune to

Select one:

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

Question 2

Not yet answered

Marked out of 1

Flag question

Which of the following is not true with respect to semiconductors?

Select one:

- ☐ a. doping alters the balance of carriers in intrinsic material.
- ☐ b. doping improves conductivity.
- ☐ c. doped materials are immune to temperature effect.
- ☐ d. carriers travel with the same speed in extrinsic materials.

Question 3

Not yet answered

Marked out of 1

Flag question

Which of the following materials behave like a dielectric?

Question 9

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. none of the above

Question 10

Not yet answered

Marked out of 1

 Flag question

Which is/are correct about Coulomb's law? i. For similar charges, force is positive; ii. For non-identical charges, the force is

Question 1

Not yet answered

Marked out of 1

 Flag question

The electric field everywhere on the surface of a hollow sphere of radius 6cm is measured to be 2.9×10^4 N/C. what is the charge enclosed by the surface?

A. $1.3 \mu\text{C}$

Select one:

- ☐ a. $5.1 \mu\text{C}$
- ☐ b. $0.051 \mu\text{C}$
- ☐ c. $0.012 \mu\text{C}$

Question 2

Not yet answered

Marked out of 1

 Remove flag

QUESTION BLANK

Select one:

- ☐ a. CHOICE BLANK
- ☐ b. CHOICE BLANK

Select one:

- ☐ a. Power – $\text{kW}\cdot\text{h}$
- ☐ b. Energy – kW
- ☒ c. Potential difference – J/C
- ☐ d. Current – A/s

Question 14

Not yet answered

Marked out of 1

 Flag question

An alternating voltage whose peak value is 80 volts is connected across a 60 ohms. What is the value of *rmsrms* current?

Select one:

- ☐ a. 1.33 A
- ☐ b. 0.94 A
- ☐ c. 1.88A
- ☐ d. 0.67A

Question 15

Not yet answered

Marked out of 1

 Flag question

..... is used for measuring potential difference.

Select one:

Question 4

Not yet answered

Marked out of 1

Flag question

The total charge density on the entire surface is given by?

Select one:

- ☐ a. $Q = \iint \sigma(r)$
- ☐ b. $Q = \iint \sigma(r) dv$
- ☐ c. $Q = \iint \sigma(r) dA$
- ☐ d. $Q = \iiint \sigma(r) dr$

Question 5

Not yet answered

Marked out of 1

Flag question

Strength of magnetic field is known as

Select one:

- ☐ a. flux
- ☐ b. density
- ☐ c. magnetic strength
- ☐ d. magnetic flux density

- ☐ 38.8V
- ☐ c. 41.5V
- ☐ d. 235V

Question 12

Not yet answered

Marked out of 1

Flag question

A potential difference of 2V is connected to a uniform resistance of length 2.0m and cross-sectional area $8 \times 10^{-9} \text{m}^2$. A current 0.1A then flows in the wire. Find the conductivity of the material.

Select one:

- ☐ a. $8.12 \times 10^{-8} \text{m}^{-1} \Omega^{-1}$
- ☐ b. $9.0 \times 10^{-7} \text{m}^{-1} \Omega^{-1}$
- ☐ c. $1.25 \times 10^{-7} \text{m}^{-1} \Omega^{-1}$
- ☐ d. $1.25 \times 10^{-8} \text{m}^{-1} \Omega^{-1}$

Question 13

Not yet answered

Flag question

Which of the following quantities is measured in its unit?

- ☐ b. 30 W
- ☐ c. 810 W
- ☐ d. 10 W

Question 6

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

Question 7

Not yet answered

Marked out of 1

Flag question

The process of adding impurities to a semiconductor is known as

Select one:

- ☐ a. diffusion
- ☐ b. recombination
- ☐ c. mixing
- ☒ d. doping

Question 8

Not yet answered

Marked out of 1

Flag question

A P-type semiconductor is produced when

- ☐ c. $2 \times 10^{-5} \text{ V/m}$
- ☐ d. $1.25 \times 10^5 \text{ V/m}$

Question 15

Not yet answered

Marked out of 1

 Flag question

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%



sectional area?

Select one:

- ☐ a. 30ohms
- ☐ b. 20ohms
- ☒ c. 15ohms
- ☐ d. 7.5ohms

Question 12

Not yet answered

Marked out of 1

[Flag question](#)

It is important to boost the generated electric current from the *Kainji* dam hydroelectric generator before transmitting it for distribution to consumers. The transformer that does this has N turns in the primary and n turns in the secondary and the coils are wound one on top of the other. In this action, they are wound on top of each other such that

Select one:

- ☐ a. $N > n$, to ensure current interaction between the coils and the wires are uncoated.
- ☐ b. $N < n$, to ensure field interaction between the coils and the wires are coated.
- ☐ c. $N > n$, to ensure field and current interaction between the coils and the wires are coated.
- ☐ d. $N < n$, to ensure field and current interaction between the coils and the wires are uncoated.

Question 13

Not yet answered

Marked out of 1

[Flag question](#)

Question 12

Not yet answered

Marked out of 1

Flag question

A potential difference of 2v is connected to a uniform resistance of length 2.0m and cross-sectional area $8 \times 10^{-8} \text{m}^2$. A current 0.1A then flows in the wire. Find the conductivity of the material.

Select one:

- ☒ a. $8.12 \times 10^{-8} \text{m}^{-1} \Omega^{-1}$
- ☐ b. $9.0 \times 10^{-7} \text{m}^{-1} \Omega^{-1}$
- ☐ c. $1.25 \times 10^{-7} \text{m}^{-1} \Omega^{-1}$
- ☐ d. $1.25 \times 10^{-8} \text{m}^{-1} \Omega^{-1}$

Question 13

Not yet answered

Marked out of 1

Flag question

Which one of the following quantities is correctly matched to its unit?

Select one:

- ☐ a. Power – kW·h
- ☐ b. Energy – kW

Question 8

Not yet answered

Marked out of 1

Flag question

Lenz' law states that the direction of the induced emf and hence current

Select one:

- ☐ a. is determined by the rate of current flux
- ☐ b. is found by the right hand rule
- ☐ c. is found by the left hand rule
- ☐ d. always opposes the cause producing it

Question 9

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

$$v = 30 \sin(2000\pi t)$$

b. 6 A

c. 5 A

d. 3 A

Question 3

Not yet answered

Marked out of 1

 Flag question

By accelerating magnet inside coil, current in it

Select one:

- ☐ a. **increases**
- ☐ b. **decreases**
- ☐ c. **remains constant**
- ☐ d. **reverses**

Question 4

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?

[Dashboard](#)[OverLap](#)[My courses](#)

Home > My courses > Physics > Electricity & Magnetism > Question 1 > Question 1

Question 1

[Unattempted](#)[Attempted](#)[Flag question](#)

What is the electric field at a point P which is 30 cm to the right of a point charge $Q = -3.0 \mu\text{C}$?

Answer:

- ☐ $3.0 \times 10^5 \text{ N/C}$, pointing towards P
- ☐ $3.0 \times 10^5 \text{ N/C}$, pointing towards Q
- ☐ $3.0 \times 10^5 \text{ N/C}$, pointing towards Q
- ☐ $3.0 \times 10^5 \text{ N/C}$, pointing towards P

Question 2

[Unattempted](#)[Attempted](#)[Flag question](#)

Full question details

Answer:

- ☐ a conductor at relatively high temperatures only
- ☐ a conductor at low temperatures only
- ☐ a conductor at all temperatures
- ☐ a better or insulator at high temperatures

Question 3

[Unattempted](#)[Attempted](#)[Flag question](#)



Question 1

Not yet answered

Marked out of 1

Flag question

What is the electric field at a point P which is 30 cm to the right of a point charge $Q = -3.0\mu\text{C}$?

Select one:

- ☐ a. $9 \times 10^5 \text{ N/C}$, pointing towards P
- ☐ b. $9 \times 10^5 \text{ N/C}$, pointing towards Q
- ☒ c. $3 \times 10^5 \text{ N/C}$, pointing towards Q
- ☐ d. $3 \times 10^5 \text{ N/C}$, pointing towards P

Question 2

Not yet answered

Marked out of 1

Flag question

Pure semiconductors

Select one:

- ☒ a. conducts at relatively high temperatures only.
- ☐ b. conducts at low temperatures only
- ☐ c. conducts at all temperatures
- ☐ d. behave as insulators at high temperatures

Question 1

Not yet answered

Marked out of 1

 Flag question

A reverse biased PN junction has

Select one:

- ☐ a. very narrow depletion region
- ☐ b. very high current
- ☐ c. very low resistance
- ☐ d. almost no current

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 plates is held constant by a battery. As it is being inserted,

☐ c. $2.83 \times 10^{-11} F$ $2.83 \times 10^{-11} F$

☐ d. $3.54 \times 10^{-10} F$ $3.54 \times 10^{-10} F$

Question 15

Not yet answered

Marked out of 1

 Flag question

Which of the following statements is NOT true of electric fields?

Select one:

- ☐ a. The magnitude of the field is dependent on the test charge placed there
- ☐ b. It is a vector field that can be associated each point in space
- ☐ c. It is the force per unit charge exerted on a test positive charge at rest at that point
- ☐ d. It can be generated by electric charges or by time-varying magnetic fields

Finish attempt ...

[◀ Announcements](#)

Jump to... 

Question 9

Not yet answered

Marked out of 1

Flag question

The current measured at the secondary of a 240V / 12V transformer is 2A. Calculate the current that flows in the primary

Select one:

- ☐ a. 0.11A
- ☐ b. 1A
- ☐ c. 0.1A
- ☐ d. 10A

Question 10

Not yet answered

Marked out of 1

Flag question

For a cell with EMF, E and internal resistance, r connected with an external resistor of resistance R in a closed circuit. The EMF can be expressed as.....?

Select one:

- ☐ a. $E = IR + Ir$
- ☐ b. $E = IR - Ir$
- ☐ c. $E = IR/Ir$
- ☐ d. $E = IR(Ir)$

Question 11

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 1.15

Select one:

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

- ☐ c. a scientific curiosity with no practical application.
- ☒ d. called electromagnetic induction.

Question 12

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. mutual induction
- ☐ c. Faraday's law
- ☐ d. Electromagnetic interference

Question 13

Not yet answered

Marked out of 1

Flag question

The magnitude of the induced emf in a conductor depends on

Select one:

- ☐ a. flux density of the magnetic field
- ☐ b. amount of flux cut
- ☐ c. amount of flux linkage
- ☐ d. rate of change of flux linkage

Question 14

Not yet answered

Marked out of 1

Flag question

Calculate the resonant frequency of a R-C-L series circuit with $R = 300\Omega$, $C = 470\mu\text{F}$ and $L = 35\text{H}$.

Select one:

- ☐ a. 1.27Hz
- ☐ b. 3.51Hz
- ☐ c. 12.36Hz
- ☐ d. 20.50Hz

Question 15

Not yet answered

Marked out of 1

Flag question

Which of the following is true about p-n junction diode? i. Forward bias current rises linearly. Reverse bias current is absolutely zero. iii. Width of depletion region is unchanged when forward biased.

Select one:

- ☐ a. i, iii.
- ☐ b. ii, iii.
- ☐ c. i, ii
- ☐ d. none

Finish attempt ...

Question 6

Not yet answered

Marked out of 1

Flag question

Two plates of a capacitor are 2.70 m apart while the potential difference at the plates is 76.0 volts. What is the electric field intensity on each of the plates?

Select one:

- ☐ a. 28.1 V/m
- ☐ b. 205.2 V/m
- ☐ c. 25.8 V/m
- ☐ d. 20 V/m

Question 7

Not yet answered

Marked out of 1

Flag question

A parallel plate air capacitor with no dielectric between the plates is connected to the constant voltage source. How would capacitance and charge change if dielectric of dielectric constant $K=2$ is inserted between the plates. C_0 and Q_0 are the capacitance and charge of the capacitor before the introduction of the dielectric.

Select one:

- ☐ a. $C=C_0/2$ and $Q=2Q_0$
- ☐ b. $C=2C_0$ and $Q=Q_0/2$
- ☐ c. $C=C_0/2$ and $Q=Q_0/2$
- ☐ d. $C=2C_0$ and $Q=2Q_0$

- ☒ a. $4.0 \times 10^{-8} \text{ C}$
- ☐ b. $8.0 \times 10^{-8} \text{ C}$
- ☐ c. $1.2 \times 10^{-7} \text{ C}$
- ☐ d. $1.6 \times 10^{-7} \text{ C}$

Question 14

Not yet answered

Marked out of 1

 Flag question

Find the distance between point charges $q_1 = 26.0 \text{ iC}$ and $q_2 = 47.0 \text{ iC}$, if a force of 5.70 N is acting between them.

Select one:

- ☐ a. 1.929 m
- ☐ b. 1.389 m
- ☐ c. 0.5 m
- ☐ d. 2.680 m

Question 15

Not yet answered

Marked out of 1

 Flag question

An equipotential surface is adjacent points with:

Select one:

- ☒ a. same electric potential
- ☐ b. zero electric potential
- ☐ c. opposite electric potential
- ☐ d. varying electric potential

 Announcements

Jump to...



Question 15

Not yet answered

Marked out of 1

 Flag question

Which of the following is true about p-n junction diode? i. Forward bias current rises linearly. Reverse bias current is absolutely zero. Iii. Width of depletion region is unchanged when forward biased.

Select one:

- ☐ a. i, iii.
- ☐ b. ii, iii.
- ☐ c. 1, ii
- ☒ d. none

Question 7

Not yet answered

Marked out of 1

 Flag question

The plates of a parallel-plate capacitor are 2 mm apart and 5 m^2 in area. The plates are in a vacuum. A potential difference of 2000 volts is applied across the capacitor. Calculate the magnitude of the electric field between the plates.

Select one:

- ☐ a. $2.8 \times 10^6 \text{ V/m}$
- ☐ b. $1.0 \times 10^6 \text{ V/m}$
- ☐ c. $2.5 \times 10^6 \text{ V/m}$
- ☐ d. $2.0 \times 10^6 \text{ V/m}$



- ☐ d. same as that of electric current

Question 10

Not yet answered

Marked out of 1

Flag question

A 30cm long solenoid has 2000 loops of wire on an iron rod whose cross-sectional area is 1.5cm^2 . Calculate the average emf induced in the solenoid as the current in it is decreased from 0.6A to 0.1A in a time of 0.03s? the relative permeability of its iron core is 600 .

Select one:

- ☐ a. $\epsilon = 2.5V$ $\epsilon = 2.5V$
- ☐ b. $\epsilon = 0.25V$ $\epsilon = 0.25V$
- ☐ c. $\epsilon = -25V$ $\epsilon = -25V$
- ☐ d. $\epsilon = +25V$ $\epsilon = +25V$

Question 11

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 0.5m in length and 0.001m in width, and the space between the plates is 1.5cm. What is the voltage difference across the capacitor?

Select one:

- ☐ a. 0.475 V
- ☐ b. 5.5 V
- ☐ c. 61.5 V
- ☐ d. 0.615 V

Question 12

Not yet answered

Marked out of 1

Flag question

A resistor, 100 Ω , 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

Question 13

Not yet answered

Marked out of 1

Flag question

When a voltage of 1 kV is applied to a capacitor, the charge on the

Question 1

Not yet answered

Marked out of 1

 Flag question

The total charge density on the entire surface is given by?

Select one:

- ☐ a. $Q = \iint \sigma(r)$
- ☐ b. $Q = \iint \sigma(r) dv$
- ☐ c. $Q = \iint \sigma(r) dA$
- ☐ d. $Q = \iiint \sigma(r) dr$

Question 2

Not yet answered

Marked out of 1

 Flag question

Two capacitors, each of capacitance $2\mu\text{f}$ are connected in parallel. If the

Question 15

Not yet answered

Marked out of 1

 Flag question

An electron moves in a uniform magnetic field B with a velocity of 10^7 m/s. If the force on the electron is 1.6×10^{-13} N, calculate the magnetic field strength B

Select one:

- ☐ a. **1.0T**
- ☐ b. **2.6T**
- ☐ c. **3.2T**
- ☐ d. **4.0T**

Finish attempt ...

[← Announcements](#)

Jump to...



- ☐ d. 20kOhms

Question 9

Not yet answered

Marked out of 1

[Flag question](#)

Direction of conventional current is

Select one:

- ☐ a. direction of neutron flow
- ☐ b. direction of electron flow
- ☒ c. direction of flow of positive charge
- ☐ d. same as that of electric current

Question 10

Not yet answered

Marked out of 1

[Flag question](#)

A 30cm long solenoid has 2000 loops of wire on an iron rod whose cross-sectional area is 1.5cm^2 . Calculate the average emf induced in the solenoid as the current in it is decreased from 0.6A to 0.1A in a time of 0.03s? the relative permeability of its iron core is 600 .

Select one:

- ☐ a. $\epsilon = 2.5\text{V}$ $\epsilon = 2.5\text{V}$
- ☐ b. $\epsilon = 0.25\text{V}$ $\epsilon = 0.25\text{V}$
- ☐ c. $\epsilon = -25\text{V}$ $\epsilon = -25\text{V}$
- ☐ d. $\epsilon = +25\text{V}$ $\epsilon = +25\text{V}$

Question 11

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 0.5m in length and 0.001m in width, and the space between the plates is 1.5cm. What is the voltage difference across the capacitor?

Select one:

- ☐ a. 0.475 V
- ☐ b. 5.5 V
- ☐ c. 61.5 V
- ☐ d. 0.615 V

Question 12

Not yet answered

Marked out of 1

[Flag question](#)

Question 5

Not yet answered

Marked out of 1

 Flag question

A $2\mu\text{F}$ capacitor is charged to 50V and then discharged through a $1\text{ M}\Omega$ resistor. Find the time for the capacitor voltage to drop to 25V.

Select one:

- ☐ a. 0.5s
- ☐ b. 0.72s
- ☐ c. 0.27s
- ☐ d. 1.39s

Question 7

Not yet answered

Marked out of 1

Flag question

Find the total flux (in N/m^2) when two charges $q_1 = 15 \mu\text{C}$ and $q_2 = -17 \mu\text{C}$ are placed within a spherical surface of 20 cm.

Select one:

- ☐ a. 2.26×10^{-5}
- ☐ b. -2.26×10^5
- ☐ c. 2.26×10^5
- ☐ d. -2.26×10^{-5}

- ☐ a. **0.84**
- ☒ b. **0.85**
- ☐ c. **1.00**

Question 5

Not yet answered

Marked out of 1

 **Flag question**

Which of the following is the unit for electric field strength?

Select one:

- ☐ a. **V m**
- ☐ b. **V m⁻²**
- ☒ c. **kg m s⁻¹ C⁻¹**
- ☐ d. **kg s m⁻¹ C**

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

Select one:

☐ a. $\frac{4BD}{\mu_0}$

☒ b. $\frac{4\pi BD}{\mu_0}$

☐ c. $\frac{4BD}{\pi\mu_0}$

☐ d. $\frac{2BD}{\mu_0}$



The plates of a parallel plate air capacitor are charged to 100 V. A 2mm plate is inserted between the plates of the capacitor. To maintain the same potential difference, the distance between the capacitor plates is increased by 1.6mm. The dielectric constant of the plate is

Select one:

- ☐ a. 1.25
- ☐ b. 5
- ☐ c. 2.5
- ☐ d. 4

🚩 Flag question

When a charged particle moves at right angle to a magnetic field, the quantity that changes is

Select one:

- ☐ a. momentum
- ☐ b. speed
- ☐ c. energy
- ☐ d. moment of inertia

Question 2

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 1

Not yet answered

Marked out of 1

Flag question

Can magnetic flux lines be seen?

Select one:

- ☐ a. Yes
- ☐ b. No
- ☐ c. Depends on the strength of the field
- ☐ d. Only when the field strength is very large

Question 2

Not yet answered

Marked out of 1

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 3

Not yet answered

Marked out of 1

Flag question

Energy stored in a capacitor can be expressed as:

Select one:

- ☐ a. $\frac{1}{2} CV$
- ☐ b. $\frac{1}{2} CV^2$
- ☐ c. $\frac{1}{2} CV^3$
- ☐ d. $\frac{1}{2} CV^2$

Question 4

Not yet answered

Marked out of 1

Flag question

Capacitance of a parallel plate air capacitor depends on the following except?

Select one:

- ☐ a. Thickness of conducting plates
- ☐ b. Charge on the conducting plates
- ☐ c. Area of the conducting plates
- ☐ d. Distance of separation between the conducting plates

Question 5

Not yet answered

Marked out of 1

Flag question



Question 1

Not yet answered

Marked out of 1

Flag question

The equation of alternating **current** is $i = 42.4 \sin 628t$. Then the average value of **current** is

Select one:

- ☐ a. 2A
- ☐ b. 38 A.
- ☐ c. 22 A.
- ☐ d. 42.42 A.

Question 2

Not yet answered

Marked out of 1

Flag question

The presence of a dielectric between the plates of a capacitor results in?

Select one:

- ☐ a. decreasing its capacitance
- ☐ b. increasing its capacitance
- ☐ c. Zero capacitance
- ☐ d. constant capacitance

Question 3

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

Question 4

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



Finish

Time left

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

Question 15

Not yet answered

Marked out of 1

Flag question

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

Finish attempt ...





Gone Far
Zinoleesky



(media)

**I left dem post on my
Instagram**

**So, you can see there was a
turnin' point**

There is no method or diagram

**Omo ogbon, shebi you know
where I was comin' from?**

Now, look at me, I've gone far

Dem no know when I run pass

More money, more respect

**Give them what they don't
expect**



0:28

2:28

