

NTA CUET UG May and June 2025

Application No	
Candidate Name	
Roll No.	
Test Date	02/06/2025
Test Time	3:00 PM - 6:00 PM
Subject	02JuneShift2 Subject Combination 2

Section : Physics

Q.1

The drift velocity of electrons in a conductor is ' v ' when a current ' i ' flows through it. If the area of the cross-section of the conductor is reduced to half of its initial value, then the drift velocity will be:

1. $v/2$
2. v
3. $2v$
4. $4v$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707028

Option 1 ID : 2268952741326

Option 2 ID : 2268952741327

Option 3 ID : 2268952741328

Option 4 ID : 2268952741329

Status : Answered

Chosen Option : 3

Q.2

A monochromatic source emitting light of wavelength 600 nm has a power output of 66 W. The number of photons emitted by the source in 2 minutes is : (Given: $h = 6.6 \times 10^{-34} \text{ Js}$)

1. 1.2×10^{22}
2. 2.4×10^{22}
3. 12×10^{22}
4. 24×10^{22}

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707050

Option 1 ID : 2268952741414

Option 2 ID : 2268952741415

Option 3 ID : 2268952741416

Option 4 ID : 2268952741417

Status : Answered

Chosen Option : 2

Q.3

In a certain region, a uniform electric field exists in the positive x -direction. Let V_A = electric potential at point (0, 0, 0) cm, V_B = electric potential at point (5, 0, 0) cm and V_C = electric potential at point (0, 5, 0) cm. The correct relationship between them is

1. $V_A < V_C$ and $V_A = V_B$
2. $V_A = V_C$ and $V_A > V_B$
3. $V_A > V_C$ and $V_A = V_B$
4. $V_A = V_C$ and $V_A < V_B$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707021

Option 1 ID : 2268952741298

Option 2 ID : 2268952741299

Option 3 ID : 2268952741300

Option 4 ID : 2268952741301

Status : Answered

Chosen Option : 2

Q.4

A negatively charged object A is repelled by another charged object B. However, an object C is attracted to object B. Which of the following is the most probable for the charge of object C?

1. neutral or negatively charged
2. negatively charged only
3. neutral or positively charged
4. positively charged only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707058

Option 1 ID : 2268952741446

Option 2 ID : 2268952741447

Option 3 ID : 2268952741448

Option 4 ID : 2268952741449

Status : Answered

Chosen Option : 4

Q.5

A current of 15 A flows in a wire of cross-sectional area 5 mm^2 with a drift velocity of $3 \times 10^{-3} \text{ m/s}$. The electron density in the wire will be

1. $489 \times 10^{25} \text{ m}^{-3}$
2. $546 \times 10^{25} \text{ m}^{-3}$
3. $725 \times 10^{23} \text{ m}^{-3}$
4. $625 \times 10^{25} \text{ m}^{-3}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707069

Option 1 ID : 2268952741490

Option 2 ID : 2268952741491

Option 3 ID : 2268952741492

Option 4 ID : 2268952741493

Status : Answered

Chosen Option : 4

Q.6

The external diameter of a 5 m long hollow copper tube is 10 cm and the thickness of its wall is 5 mm. If the specific resistance of copper is $1.7 \times 10^{-8} \Omega \text{ m}$, then the resistance of the tube will be;

1. $7.45 \times 10^{-4} \Omega$
2. $14.9 \times 10^{-4} \Omega$
3. $5.7 \times 10^{-5} \Omega$
4. $5.7 \times 10^5 \Omega$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707031

Option 1 ID : 2268952741338

Option 2 ID : 2268952741339

Option 3 ID : 2268952741340

Option 4 ID : 2268952741341

Status : Answered

Chosen Option : 3

Q.7

In a plane electromagnetic wave, the electric field varies as $E_x = 90 \sin(500x + 20 \times 10^{10}t) \text{ V/m}$. The expression of its magnetic field variation is:

1. $27 \times 10^{-7} \sin(500x + 20 \times 10^{10}t) \text{ T}$
2. $3.3 \times 10^6 \sin(500x + 20 \times 10^{10}t) \text{ T}$
3. $27 \times 10^8 \sin(500x + 20 \times 10^{10}t) \text{ T}$
4. $3 \times 10^{-7} \sin(500x + 20 \times 10^{10}t) \text{ T}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707042

Option 1 ID : 2268952741382

Option 2 ID : 2268952741383

Option 3 ID : 2268952741384

Option 4 ID : 2268952741385

Status : Answered

Chosen Option : 4

Q.8

If we double the number of turns of coil in a moving coil galvanometer, its voltage sensitivity will:

1. reduce to half
2. remain unchanged
3. increase to twice
4. increase to 4 times

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707032

Option 1 ID : 2268952741342

Option 2 ID : 2268952741343

Option 3 ID : 2268952741344

Option 4 ID : 2268952741345

Status : Answered

Chosen Option : 3

Q.9

An iron ring of relative permeability μ_r is introduced inside a toroidal solenoid having η turns per meter. If the current in the solenoid is I , then the magnetic field in the ring is:

1. $\frac{\mu_0 \mu_r I}{\sqrt{\eta}}$
2. $\frac{\mu_0 \mu_r I}{\eta^2}$
3. $\mu_0 \mu_r \eta^2 I$
4. $\mu_0 \mu_r \eta I$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707034

Option 1 ID : 2268952741350

Option 2 ID : 2268952741351

Option 3 ID : 2268952741352

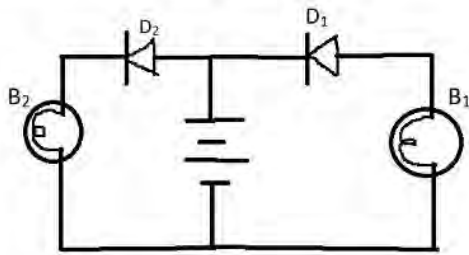
Option 4 ID : 2268952741353

Status : Answered

Chosen Option : 3

Q.10

In the circuit diagram, the battery, diodes D_1 and D_2 , bulbs B_1 and B_2 are connected as shown. Which of the following statements is true regarding bulbs B_1 and B_2 ?



1. Only B_1 will glow
2. B_1 and B_2 both will glow
3. Only B_2 will glow
4. Both B_1 and B_2 will not glow

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707066

Option 1 ID : 2268952741478

Option 2 ID : 2268952741479

Option 3 ID : 2268952741480

Option 4 ID : 2268952741481

Status : Answered

Chosen Option : 3

Q.11

Light of wavelength 300 nm is used in an experiment on photoelectric effect with lithium having a work function of 2.7 eV. The maximum kinetic energy of ejected photo-electrons will be

1. 1.60 eV
2. 1.90 eV
3. 1.75 eV
4. 1.43 eV

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707065

Option 1 ID : 2268952741474

Option 2 ID : 2268952741475

Option 3 ID : 2268952741476

Option 4 ID : 2268952741477

Status : Answered

Chosen Option : 4

Q.12

A cell of emf E is connected across an external resistance R . When a current ' I ' is drawn from the cell, the potential difference across the electrodes of the cell drops to ' V '. The internal resistance ' r ' of the cell is

1. $\left[\frac{E - V}{E} \right] R$
2. $\left[\frac{E - V}{R} \right] R$
3. $\left[\frac{E - V}{I} \right] R$
4. $\left[\frac{E - V}{V} \right] R$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707060

Option 1 ID : 2268952741454

Option 2 ID : 2268952741455

Option 3 ID : 2268952741456

Option 4 ID : 2268952741457

Status : Answered

Chosen Option : 1

Q.13

The element having the highest binding energy per nucleon among the following is:

1. ${}^6\text{Li}$
2. ${}^{14}\text{N}$
3. ${}^{12}\text{C}$
4. ${}^{16}\text{O}$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707051

Option 1 ID : 2268952741418

Option 2 ID : 2268952741419

Option 3 ID : 2268952741420

Option 4 ID : 2268952741421

Status : Answered

Chosen Option : 2

Q.14

Three resistors of resistance $15\ \Omega$ each are to be connected in combination. The ratio of maximum equivalent resistance to the minimum equivalent resistance is:

1. 3 : 1
2. 6 : 1
3. 9 : 1
4. 12 : 1

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707029**

Option 1 ID : **2268952741330**

Option 2 ID : **2268952741331**

Option 3 ID : **2268952741332**

Option 4 ID : **2268952741333**

Status : **Answered**

Chosen Option : **1**

Q.15

A symmetrical double convex lens is cut into two equal parts by a plane containing the principal axis:

The power of the divided lens is:

1. Half of the original lens
2. equal to that of the original lens
3. double of the original lens
4. four times of the original lens

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707045**

Option 1 ID : **2268952741394**

Option 2 ID : **2268952741395**

Option 3 ID : **2268952741396**

Option 4 ID : **2268952741397**

Status : **Answered**

Chosen Option : **2**

Q.16

The atomic hydrogen emits a line spectrum consisting of different series. The ratio of frequencies of the first line in Lyman and Balmer series is:

1. 3 : 5
2. 9 : 5
3. 27 : 5
4. 5 : 27

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707053**

Option 1 ID : **2268952741426**

Option 2 ID : **2268952741427**

Option 3 ID : **2268952741428**

Option 4 ID : **2268952741429**

Status : **Answered**

Chosen Option : **3**

Q.17

A charging capacitor has

1. Only conduction current present in connecting wire
2. Only displacement current present in the space between plates
3. Both displacement and conduction currents present
4. No current present in different regions of space

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707041**

Option 1 ID : **2268952741378**

Option 2 ID : **2268952741379**

Option 3 ID : **2268952741380**

Option 4 ID : **2268952741381**

Status : **Answered**

Chosen Option : **3**

Q.18

A long wire is bent into a circular coil of one turn and then into a circular coil of smaller radius having n turns. If the same current passes in both the cases, then the ratio of the magnetic fields produced at the centers in two cases will be:

1. $1 : n^2$
2. $1 : n$
3. $\sqrt{n} : 1$
4. $1 : n^3$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707035**

Option 1 ID : **2268952741354**

Option 2 ID : **2268952741355**

Option 3 ID : **2268952741356**

Option 4 ID : **2268952741357**

Status : **Answered**

Chosen Option : **2**

Q.19

Two point charges, $q_1 = 36 \mu\text{C}$ and $q_2 = -9 \mu\text{C}$ are placed at a distance of 30 cm. The distance from q_1 , where the net electric field is zero, will be

1. 10 cm
2. 20 cm
3. 60 cm
4. 30 cm

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707025**

Option 1 ID : **2268952741314**

Option 2 ID : **2268952741315**

Option 3 ID : **2268952741316**

Option 4 ID : **2268952741317**

Status : **Answered**

Chosen Option : **3**

Q.20

The smallest wavelength in the spectral lines of the Paschen series in the hydrogen atom is: (R is the Rydberg's constant in $\text{\AA}^{-1}$)

1. $\frac{9}{R} \text{\AA}$

2. $\frac{R}{9} \text{\AA}$

3. $\frac{9R}{21} \text{\AA}$

4. $\frac{21}{R} \text{\AA}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707054

Option 1 ID : 2268952741430

Option 2 ID : 2268952741431

Option 3 ID : 2268952741432

Option 4 ID : 2268952741433

Status : Answered

Chosen Option : 2

Q.21

A short bar magnet of magnetic moment $5.25 \times 10^{-2} \text{ J/T}$ is placed with its axis perpendicular to earth's magnetic field direction. The distance of the point from the center of magnet on its perpendicular bisector, where the resultant field is 45° to the earth's field will be: (Earth's field at that place is 0.42 G)

1. $6.3 \times 10^{-2} \text{ m}$

2. $5 \times 10^{-2} \text{ m}$

3. $6.3 \times 10^{-3} \text{ m}$

4. $5 \times 10^{-3} \text{ m}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707056

Option 1 ID : 2268952741438

Option 2 ID : 2268952741439

Option 3 ID : 2268952741440

Option 4 ID : 2268952741441

Status : Answered

Chosen Option : 2

Q.22

The electric field in a region is given by $\vec{E} = (6\hat{i} + 3\hat{j} + 5\hat{k})$ N/C. The electric flux due to this electric field through an area 100 cm^2 lying in the X-Y plane is:

1. $5 \times 10^2 \text{ Nm}^2/\text{C}$
2. $5 \times 10^1 \text{ Nm}^2/\text{C}$
3. $5 \times 10^{-1} \text{ Nm}^2/\text{C}$
4. $5 \times 10^{-2} \text{ Nm}^2/\text{C}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707023

Option 1 ID : 2268952741306

Option 2 ID : 2268952741307

Option 3 ID : 2268952741308

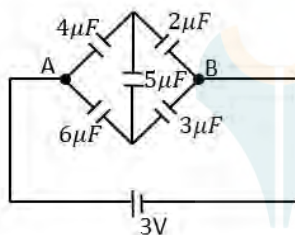
Option 4 ID : 2268952741309

Status : Answered

Chosen Option : 2

Q.23

A network of five capacitors is shown in the figure. The total charge stored in the network connected between A and B is:



1. $8 \mu\text{C}$
2. $10 \mu\text{C}$
3. 9 mC
4. 10 mC

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707024

Option 1 ID : 2268952741310

Option 2 ID : 2268952741311

Option 3 ID : 2268952741312

Option 4 ID : 2268952741313

Status : Answered

Chosen Option : 1

Q.24

The mutual inductance of two co-axial coils is 2 H. If the current in one coil changes uniformly from zero to 1.0 A in 100 ms, the emf induced in the other coil is

1. 10 V
2. 20 V
3. -10 V
4. -20 V

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707070**

Option 1 ID : **2268952741494**

Option 2 ID : **2268952741495**

Option 3 ID : **2268952741496**

Option 4 ID : **2268952741497**

Status : **Answered**

Chosen Option : **2**

Q.25

If the ratio of mass number of two nuclei is 8:27, then the ratio of the volumes of their nuclei is:

1. 8 : 27
2. 4 : 9
3. 2 : 3
4. 1 : 1

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707052**

Option 1 ID : **2268952741422**

Option 2 ID : **2268952741423**

Option 3 ID : **2268952741424**

Option 4 ID : **2268952741425**

Status : **Answered**

Chosen Option : **4**

Q.26

A long solenoid with 30 turns/cm has a small loop of area 3 cm^2 placed inside it normal to its axis. If the current carried by the solenoid changes steadily from 3.0 A to 6.0 A in 0.1 s, the induced emf in the loop is

1. $3\pi \times 10^{-7} \text{ V}$
2. $9\pi \times 10^{-7} \text{ V}$
3. $18\pi \times 10^{-7} \text{ V}$
4. $108\pi \times 10^{-7} \text{ V}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **226895707040**

Option 1 ID : **2268952741374**

Option 2 ID : **2268952741375**

Option 3 ID : **2268952741376**

Option 4 ID : **2268952741377**

Status : **Answered**

Chosen Option : **2**



Q.27

Match **List-I** with **List-II**

List-I	List-II
(A) E is independent of r	(I) For a point charge
(B) $E \propto \frac{1}{r}$	(II) For a short dipole
(C) $E \propto \frac{1}{r^2}$	(III) For a linear charge distribution
(D) $E \propto \frac{1}{r^3}$	(IV) For a surface charge distribution on an infinite plane sheet

Choose the **correct** answer from the options given below:

1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
3. (A) - (IV), (B) - (III), (C) - (I), (D) - (II)
4. (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707022

Option 1 ID : 2268952741302

Option 2 ID : 2268952741303

Option 3 ID : 2268952741304

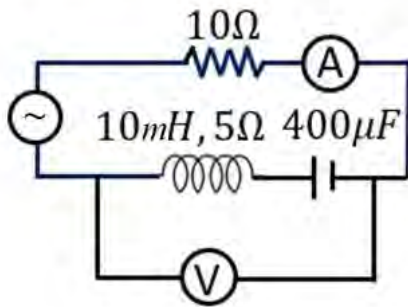
Option 4 ID : 2268952741305

Status : Answered

Chosen Option : 4

Q.28

In the circuit shown in the figure, the ac source gives a voltage of $V = 10 \cos(500t)$. The ammeter reading will be:



1. $\frac{2\sqrt{3}}{3}$ A
2. $\frac{3\sqrt{2}}{3}$ A
3. $\frac{\sqrt{2}}{3}$ A
4. $\sqrt{2}$ A

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707039

Option 1 ID : 2268952741370

Option 2 ID : 2268952741371

Option 3 ID : 2268952741372

Option 4 ID : 2268952741373

Status : Answered

Chosen Option : 3

Q.29

A long straight wire of radius 'a' carries a steady current 'I'. The current is uniformly distributed across its area of cross-section. The ratio of magnitude of magnetic fields B_1 at a distance $a/2$ and B_2 at a distance $2a$ from the axis of the wire.

1. 1 : 2
2. 1 : 1
3. 2 : 1
4. 4 : 1

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707062

Option 1 ID : 2268952741462

Option 2 ID : 2268952741463

Option 3 ID : 2268952741464

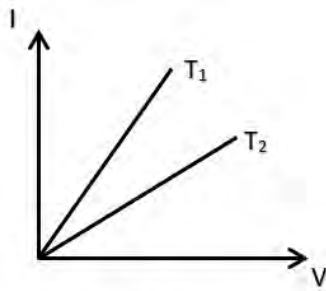
Option 4 ID : 2268952741465

Status : Answered

Chosen Option : 2

Q.30

The current-voltage graphs for a given metallic wire at two different temperatures, T_1 and T_2 are shown in the figure. The correct relation of temperatures and resistances will be :



1. $R_{T_2} = R_{T_1}, T_1 > T_2$
2. $R_{T_2} < R_{T_1}, T_1 > T_2$
3. $R_{T_2} > R_{T_1}, T_2 > T_1$
4. $R_{T_2} < R_{T_1}, T_2 > T_1$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707030

Option 1 ID : 2268952741334

Option 2 ID : 2268952741335

Option 3 ID : 2268952741336

Option 4 ID : 2268952741337

Status : Answered

Chosen Option : 3

Q.31

An infinitely long line charge distribution produces a field of $9 \times 10^4 \text{ NC}^{-1}$ at a distance of 2 cm. The linear charge density of the distribution is:

1. $0.01 \mu\text{C m}^{-1}$
2. $0.1 \mu\text{C m}^{-1}$
3. $1 \mu\text{C m}^{-1}$
4. $2 \mu\text{C m}^{-1}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707026

Option 1 ID : 2268952741318

Option 2 ID : 2268952741319

Option 3 ID : 2268952741320

Option 4 ID : 2268952741321

Status : Answered

Chosen Option : 2

Q.32

A coil having area A_0 is placed in a magnetic field. The magnetic field is perpendicular to the plane of the coil. When the magnetic field changes from B_0 to $4B_0$ in a time interval t , the magnitude of emf induced in the coil will be:

1. $\frac{3 A_0 B_0}{t}$
2. $\frac{4 A_0 B_0}{t}$
3. $\frac{3 B_0}{A_0 t}$
4. $\frac{4 B_0}{A_0 t}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707037

Option 1 ID : 2268952741362

Option 2 ID : 2268952741363

Option 3 ID : 2268952741364

Option 4 ID : 2268952741365

Status : Answered

Chosen Option : 3

Q.33

If n_i is the concentration of intrinsic charge carriers in a pure semiconductor and n_e and n_h be the concentrations of electrons and holes, respectively after the semiconductor is doped, then at thermal equilibrium.

1. $n_e n_h = n_i$
2. $n_e n_h = n_i^2$
3. $\frac{n_e}{n_h} = n_i^2$
4. $\frac{n_h}{n_e} = n_i^2$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707057

Option 1 ID : 2268952741442

Option 2 ID : 2268952741443

Option 3 ID : 2268952741444

Option 4 ID : 2268952741445

Status : Answered

Chosen Option : 2

Q.34

A ray of light from air passes through an equilateral triangular glass prism and undergoes minimum deviation when the angle of incidence is $\frac{3}{4}$ of the angle of the prism. The speed of light in prism is

1. 1.15×10^8 m/s
2. 2.12×10^8 m/s
3. 2.78×10^8 m/s
4. 3×10^8 m/s

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707048**

Option 1 ID : **2268952741406**

Option 2 ID : **2268952741407**

Option 3 ID : **2268952741408**

Option 4 ID : **2268952741409**

Status : **Answered**

Chosen Option : **2**



Match **List-I** with **List-II**

List-I	List-II
AC circuit	Features
(A) Only resistor in a circuit	(I) Current leads or lags the voltage
(B) Only capacitor in a circuit	(II) Voltage and current are in phase
(C) Only inductor in a circuit	(III) The current lags the voltage by $\frac{\pi}{2}$
(D) Series LCR circuit $X_C \neq X_L$ and $R \neq 0$	(IV) The current leads the voltage by $\frac{\pi}{2}$

Choose the **correct** answer from the options given below:

- (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
- (A) - (II), (B) - (IV), (C) - (III), (D) - (I)
- (A) - (III), (B) - (II), (C) - (IV), (D) - (I)
- (A) - (IV), (B) - (II), (C) - (III), (D) - (I)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707038

Option 1 ID : 2268952741366

Option 2 ID : 2268952741367

Option 3 ID : 2268952741368

Option 4 ID : 2268952741369

Status : Answered

Chosen Option : 2

Q.36

Young's double slit experiment is carried out by using green, yellow, red and blue lights one by one. Arrange the expected values of fringe width (β) in increasing order

(A) β_{Green}

(B) β_{Yellow}

(C) β_{Blue}

(D) β_{Red}

Choose the **correct** answer from the options given below:

1. (B), (C), (D), (A)

2. (A), (C), (D), (B)

3. (C), (A), (B), (D)

4. (C), (A), (D), (B)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707044

Option 1 ID : 2268952741390

Option 2 ID : 2268952741391

Option 3 ID : 2268952741392

Option 4 ID : 2268952741393

Status : Answered

Chosen Option : 2

Q.37

Interference fringes may be observed due to the superposition of two light waves represented by:

1. $y_1 = a \sin \omega t$ and $y_2 = a \sin 2\omega t$

2. $y_1 = a \sin \omega t$ and $y_2 = 2a \sin(2\omega t + \delta)$

3. $y_1 = 2a \sin 2\omega t$ and $y_2 = 2a \sin 2(\omega t + \delta)$

4. $y_1 = 2a \sin \omega t$ and $y_2 = 2a \sin(2\omega t + \delta)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707043

Option 1 ID : 2268952741386

Option 2 ID : 2268952741387

Option 3 ID : 2268952741388

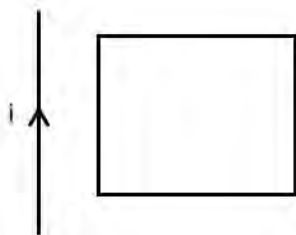
Option 4 ID : 2268952741389

Status : Answered

Chosen Option : 3

Q.38

A square loop is placed near a long straight current carrying wire as shown in figure. If the loop is moved away from the wire



1. Induced current in loop will be anti-clockwise
2. Wire will exert net attractive force on the loop
3. Wire will exert net repulsive force on the loop
4. No current is induced in the loop

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707036

Option 1 ID : 2268952741358

Option 2 ID : 2268952741359

Option 3 ID : 2268952741360

Option 4 ID : 2268952741361

Status : Answered

Chosen Option : 2



shiksha

Q.39

Match **List-I** with **List-II**

List-I	List-II
Motion of a charge particle	Path
(A) Initial velocity of charge particle parallel to B	(I) Circular path
(B) Initial velocity of charge particle perpendicular to B	(II) Helical path
(C) Initial velocity of charge particle inclined to B	(III) Straight path
(D) Initial velocity of charge particle perpendicular to E	(IV) Parabolic path

Choose the **correct** answer from the options given below:

1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
3. (A) - (III), (B) - (I), (C) - (II), (D) - (IV)
4. (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707033

Option 1 ID : 2268952741346

Option 2 ID : 2268952741347

Option 3 ID : 2268952741348

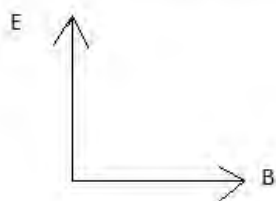
Option 4 ID : 2268952741349

Status : Answered

Chosen Option : 1

Q.40

From the following diagram, determine the direction of propagation of an electromagnetic wave.



1. In the direction of electric field
2. In the direction of magnetic field
3. Inward to the plane of paper
4. Outward from the plane of paper

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707067

Option 1 ID : 2268952741482

Option 2 ID : 2268952741483

Option 3 ID : 2268952741484

Option 4 ID : 2268952741485

Status : Answered

Chosen Option : 4



shiksha

Q.41

Match **List-I** with **List-II**

List-I	List-II
Potential difference across the terminal of a battery	Situations
(A) $V = E$	(I) cell is being charged.
(B) $V = 0$	(II) The internal resistance of a cell is zero.
(C) $V = E - ir$	(III) cell is short-circuited.
(D) $V = E + ir$	(IV) current is being drawn from a cell.

Choose the **correct** answer from the options given below:

- (A) - (II), (B) - (III), (C) - (I), (D) - (IV)
- (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
- (A) - (III), (B) - (II), (C) - (IV), (D) - (I)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707027

Option 1 ID : 2268952741322

Option 2 ID : 2268952741323

Option 3 ID : 2268952741324

Option 4 ID : 2268952741325

Status : Answered

Chosen Option : 2

Q.42

The magnifying power of a compound microscope is high, if

1. objective has long focal length and eyepiece has short focal length
2. objective has short focal length and eyepiece has long focal length
3. Both objective and eyepiece have short focal length
4. Both objective and eyepiece have long focal length

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707063

Option 1 ID : 2268952741466

Option 2 ID : 2268952741467

Option 3 ID : 2268952741468

Option 4 ID : 2268952741469

Status : Answered

Chosen Option : 2

Q.43

A body of 20 g and +50 μC charge is suspended from the ceiling by a string. If a horizontal electric field of 10 kV/m is applied, the angle between the string and vertical direction is

(Take $g=10 \text{ N/kg}$.)

1. $\tan^{-1}$ (2.50)
2. $\tan^{-1}$ (3.00)
3. $\tan^{-1}$ (3.50)
4. $\sin^{-1}$ (2.50)

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707059

Option 1 ID : 2268952741450

Option 2 ID : 2268952741451

Option 3 ID : 2268952741452

Option 4 ID : 2268952741453

Status : Answered

Chosen Option : 2

Q.44

In a series LCR circuit $C = 5 \mu\text{F}$ and $\omega = 1000 \text{ rads}^{-1}$. The value of inductance L for which the current is maximum in this circuit will be

1. 100 mH
2. 10 mH
3. 50 mH
4. 200 mH

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707068**

Option 1 ID : **2268952741486**

Option 2 ID : **2268952741487**

Option 3 ID : **2268952741488**

Option 4 ID : **2268952741489**

Status : **Answered**

Chosen Option : **2**

Q.45

When white light consisting of wavelengths ranging from 400 nm to 700 nm passes through water ($\mu = 4/3$), then the wavelength range in water will be:

1. 300 nm - 525 nm
2. 500 nm - 700 nm
3. 700 nm - 850 nm
4. $450 \text{ \AA} - 750 \text{ \AA}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707046**

Option 1 ID : **2268952741398**

Option 2 ID : **2268952741399**

Option 3 ID : **2268952741400**

Option 4 ID : **2268952741401**

Status : **Answered**

Chosen Option : **3**

Q.46

In an intrinsic semiconductor at room temperature;

1. the number of free electrons are much larger than the number of holes
2. the number of holes are much larger than the number of free electrons
3. the number of free electrons and the number of holes are equal and non-zero
4. the number of free electrons and the number of holes are zero

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707055

Option 1 ID : 2268952741434

Option 2 ID : 2268952741435

Option 3 ID : 2268952741436

Option 4 ID : 2268952741437

Status : Answered

Chosen Option : 3

Q.47

Two Polaroids are placed in such a way that their axes make an angle of 60° with each other. If an unpolarized light is incident on a system of these Polaroids, the fraction of transmitted light to the incident light will be

1. zero

2. $1/8$

3. $3/8$

4. $5/8$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895707064

Option 1 ID : 2268952741470

Option 2 ID : 2268952741471

Option 3 ID : 2268952741472

Option 4 ID : 2268952741473

Status : Answered

Chosen Option : 3

Q.48

If h is the Planck's constant, then the momentum of the photon having frequency ν is represented by

1. $h\nu$
2. $h\nu/c$
3. hc/ν
4. $h/c\nu$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707049

Option 1 ID : 2268952741410

Option 2 ID : 2268952741411

Option 3 ID : 2268952741412

Option 4 ID : 2268952741413

Status : Answered

Chosen Option : 3

Q.49

The current sensitivity of a galvanometer increases by 10%. If its resistance also increases by 20%, the voltage sensitivity will

1. decrease by 8.3 %
2. increase by 8.3 %
3. decrease by 21.5%
4. remain unaffected

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895707061

Option 1 ID : 2268952741458

Option 2 ID : 2268952741459

Option 3 ID : 2268952741460

Option 4 ID : 2268952741461

Status : Answered

Chosen Option : 3

Q.50

An equiconvex lens has a focal length $\frac{2}{3}$ times the radius of curvature of either surface. The refractive index of the material of the lens is:

1. 1.29
2. 1.52
3. 1.63
4. 1.75

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895707047**

Option 1 ID : **2268952741402**

Option 2 ID : **2268952741403**

Option 3 ID : **2268952741404**

Option 4 ID : **2268952741405**

Status : **Answered**

Chosen Option : **3**

