CUET UG - 2022
(CANDIDATE RESPONSE SHEET)

Paper/Subject	PHYSICS
Exam Date	22 Aug 2022
Exam Slot	2

Question ID:1102951
Section Name:PHYSICS
Question:

When a charged particle moves with a velocity $\vec{V}$ in a uniform external magnetic field $\vec{B}$ such that $\vec{V}$ and $\vec{B}$ are perpendicular to each other, then the charged particle describes one of the following paths :

(1) Helical path
(2) Circular path
(3) Straight line path
(4) Spiral path (Circular path of increasing radius)

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102952
Section Name:PHYSICS
Question:

A solenoid of length 1 m has a radius of 1 cm and it is made up of 500 turns. It carries a current of 5 A. The magnitude of the magnetic field inside the solenoid is :

(1) 3.24×10^{-4} T
(2) 3.14×10^{-3} T
(3) 6.28×10^{-4} T
(4) 6.28×10^{-3} T

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102953
Section Name:PHYSICS

Question:

A short bar magnet placed with it's axis at 30° in a uniform external magnetic field of 0.50 T experiences a torque of 4.5×10^{-2} Nm. The magnitude of magnetic moment of the magnet is :

(1) 12 JT^{-1}

(2) 18 JT^{-1}

(3) 20 JT^{-1}

(4) 36 JT^{-1}

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102954
Section Name:PHYSICS
Question:

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

	List - I		**List - II**
(A)	Diamagnetic	(I)	Lodestone
(B)	Paramagnetic	(II)	Iron
(C)	Hard Ferromagnetic	(III)	NaCl
(D)	Soft Ferromagnetic	(IV)	Na

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

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

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

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

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

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102955
Section Name:PHYSICS

Question:

A straight wire of mass 'm' and length 'l' carrying current 'i' is suspended in mid air by a uniform perpendicular magnetic field. Magnitude of magnetic field will be :

(1) $\frac{il}{mg}$

(2) $\frac{img}{l}$

(3) $\frac{mg}{il}$

(4) $\frac{lmg}{i}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102956
Section Name:PHYSICS
Question:

A solenoid is connected to a battery such that a steady current flows through it. If an iron core is inserted into the solenoid, the current :

(1) increases

(2) decreases

(3) first increases then becomes constant

(4) no change

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102957
Section Name:PHYSICS
Question:

Eddy currents are desirable in :

(1) Induction furnace

(2) Transformer

(3) Electric motor

(4) AC generator

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102958
Section Name:PHYSICS
Question:

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

List - I (AC circuits)		**List - II (Phase differences between V and I)**	
(A)	Pure Inductive (L)	(I)	Current lags behind the voltage by $\phi = \pi/4$
(B)	Pure Capacitor (C)	(II)	Current leads the voltage by $\phi = \pi/4$
(C)	L-R circuit with $(X_L = R)$	(III)	Current leads the voltage by $\phi = 90°$
(D)	R-C circuit with $(X_C = R)$	(IV)	Current lags behind the voltage by $\phi = 90°$

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

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

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102959
Section Name:PHYSICS
Question:

An alternating voltage of frequency 'ω' is induced in a circuit consisting of a resistor, an inductor and a capacitor connected in series.

(1) The current is minimum when $\omega^2 = \frac{1}{LC}$

(2) The current is maximum when $\omega^2 = \frac{1}{LC}$

(3) The impedance is maximum when $\omega^2 = \frac{1}{LC}$

(4) Power factor is zero when $\omega^2 = \frac{1}{LC}$

A 1

B 2

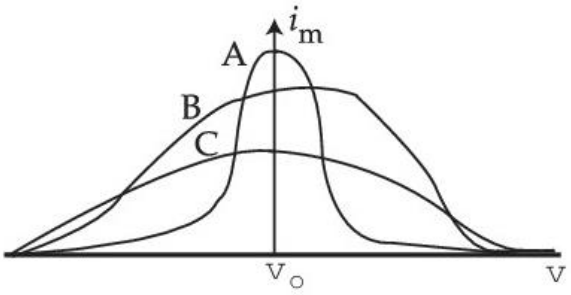
C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102960
Section Name:PHYSICS
Question:

Variation of alternating peak currents with angular frequency in series LCR circuit is shown by three curves. Following observations are made from the curves.



(A) Quality factor is maximum for A
(B) Bandwidth is maximum for A
(C) Sharpness of resonance is maximum for C
(D) Resistance is maximum for C
(E) Resonance frequency is same for each curve

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

(1) Only (A), (D) and (E) are correct statements
(2) Only (A), (C) and (E) are correct statements
(3) Only (A) and (E) are correct statements
(4) Only (A) is correct statements

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102961
Section Name:PHYSICS
Question:

The power factor of a series LCR circuit at resonance is equal to :

(1) 1
(2) -1
(3) 0
(4) Infinity

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102962
Section Name:PHYSICS

Question:

A moving coil galvanometer can be converted to an ammeter by introducing :

(1) a resistance of large value in series

(2) a resistance of large value in parallel

(3) a resistance of small value in series

(4) a resistance of small value in parallel

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

Question ID:1102963
Section Name:PHYSICS
Question:

The capacitance of a parallel plate capacitor with air as a medium between plates in C_0. Now a dielectric slab of dielectric constant K is placed between plates of a parallel plate capacitor. Area of slab is same as that of plates of capacitor. The thickness of slab is $\frac{3}{4}$ times the distance between the plates of capacitor. The capacitance of a capacitor will be :

(1) $\frac{5KC_0}{K+6}$

(2) $\frac{3KC_0}{K+4}$

(3) $\frac{4KC_0}{K+3}$

(4) $\frac{6KC_0}{K+5}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

Question ID:1102964
Section Name:PHYSICS

Question:

Consider a uniform electric field $\vec{E} = 3\times 10^3 \hat{i}$ N/C. The amount of flux of this field passing through a square of side 20 cm, whose plane is parallel to yz plane, will be :

(1) 6×10^3 Nm^2C^{-1}

(2) 20×10^3 Nm^2C^{-1}

(3) 120×10^3 Nm^2C^{-1}

(4) 150×10^3 Nm^2C^{-1}

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102965
Section Name:PHYSICS
Question:

Two tiny spheres carrying charges of 1.5 μC and 2.5 μC are located 30 cm apart respectively. The potential at the midpoint of line joining the two charges, will be :

(1) 2.4×10^5 V

(2) 4.8×10^5 V

(3) 8.2×10^5 V

(4) 9.4×10^5 V

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102966
Section Name:PHYSICS
Question:

An ideal electric dipole of dipole moment (P) is placed in stable equilibrium in uniform electric field (E). The work done in rotating this dipole from the position of stable equilibrium to the position of unstable equilibrium is :

(1) PE

(2) $-$PE

(3) 2PE

(4) $-$2PE

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102967
Section Name:PHYSICS

Question:

Match **List - I** with **List - II**, all the notations having their usual meaning.

	List - I		**List - II**
(A)	Electric field intensity	(I)	V-m
(B)	Electric potential	(II)	V-C
(C)	Electric flux	(III)	Vm^{-1}
(D)	Electrostatic potential energy	(IV)	JC^{-1}

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

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

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

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

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

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102968
Section Name:PHYSICS
Question:

Two metal spheres, one of radius R and the other of radius 3R, both have same surface charge density σ. They are brought in contact and separated again. The respective new surface charge density on them are :

(1) $\frac{5}{2}\sigma, \frac{15}{2}\sigma$

(2) $\frac{10}{3}\sigma, \frac{15}{2}\sigma$

(3) $\frac{5}{2}\sigma, \frac{5}{6}\sigma$

(4) $\frac{7}{2}\sigma, \frac{7}{2}\sigma$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102969
Section Name:PHYSICS

Question:

A mobile phone battery of 3.7 V and internal resistance 0.65 Ω is being charged by 100 V dc supply using a series resistance of 47.5 Ω. Calculate terminal voltage of battery during charging.

(1) 5.0 V

(2) 96.3 V

(3) 2.40 V

(4) 3.7 V

A 1

B 2

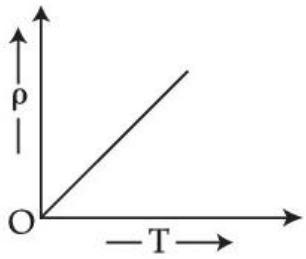
C 3

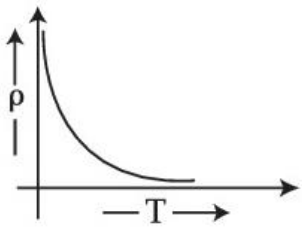
D 4

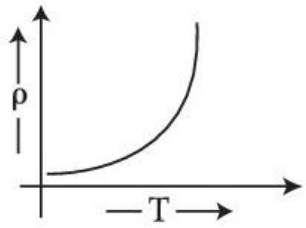
Answer Given By Candidate:**Not Attempted**

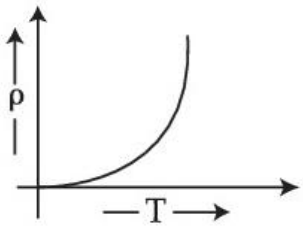
Question ID:1102970
Section Name:PHYSICS
Question:

The most appropriate variation of resistivity of conductor with temperature will be :

(1) 

(2) 

(3) 

(4) 

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102971
Section Name:PHYSICS
Question:

The name of colour of band for a carbon resistor for the value $R = 53 \times 10^6 \pm 5\ \%\ \Omega$ are given as the following. Choose the correct sequence of bands.

(A) Yellow
(B) Blue
(C) Gold
(D) Red
(E) Silver

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

(1) (A)→(D)→(B)→(C)
(2) (A)→(B)→(D)→(C)
(3) (B)→(A)→(D)→(C)
(4) (A)→(D)→(C)→(E)

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102972
Section Name:PHYSICS
Question:

A cell of emf E and internal resistance r, produces same amount of heat in the different circuits of resistors R_1 and R_2 for the separate cases during the same time interval. The internal resistance of the cell will be :

(1) $r = R_1 + R_2$
(2) $r = R_1 \cdot R_2$
(3) $r = \sqrt{R_1 R_2}$
(4) $r = \sqrt{R_1 + R_2}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102973
Section Name:PHYSICS

Question:

In a meter bridge two resistance R and S are introduced in the left and right gaps respectively, the null point is found at a distance of 30 cm from left end of meter bridge wire. If 5 Ω resistance is connected in series of R, null point occurs at 40 cm from the same end. The value of S is :

(1) 10 Ω

(2) 40 Ω

(3) 21 Ω

(4) 50 Ω

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102974
Section Name:PHYSICS
Question:

Light with an energy flux of 20 W/cm^2 falls on a non reflecting surface at normal incidence. If the surface area is 20 cm^2, the average force exerted on the surface during 10 min. is :

(1) 7.98×10^{-6} N

(2) 1.50×10^{-8} N

(3) 1.33×10^{-6} N

(4) 2.21×10^{-6} N

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102975
Section Name:PHYSICS
Question:

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

	List - I (Wavelength Range)		**List - II (EM wave)**
(A)	10^{-3} nm to 1 nm	(I)	Visible light
(B)	400 nm to 700 nm	(II)	X-ray
(C)	1 mm to 0.1 m	(III)	Microwave
(D)	1 nm to 400 nm	(IV)	Ultra violet

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

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

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

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

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

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102976
Section Name:PHYSICS
Question:

The ratio of accelerating potential for α particle and a proton for equal de-Broglie wavelengths is :

(1) $1 : 2\sqrt{2}$

(2) 8 : 1

(3) 1 : 8

(4) 4 : 1

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102977
Section Name:PHYSICS
Question:

A light ray of wave length $\lambda = 540$ nm, falls on the following photo sensitive metals.
Which of the following will emit photoelectrons for the given light ?

(A) Calcium (Work function 3.2 eV)

(B) Aluminium (Work function 4.28 eV)

(C) Potassium (Work function 2.28 eV)

(D) Caesium (Work function 2.14 eV)

(E) Sodium (Work function 2.75 eV)

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

(1) (A), (B), (C) only

(2) (A), (B) only

(3) (B), (E), (D) only

(4) (C), (D) only

A 1

B 2

C 3

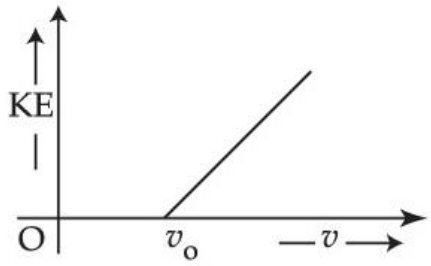
D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102978
Section Name:PHYSICS

Question:

The kinetic energy of photo electrons versus the frequency of incident radiation for a photo sensitive surface is given as :



The slope of the above graph is given only :

(1) Planck's constant
(2) Planck's constant/Charge on electron
(3) Threshold frequency
(4) Stopping potential

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102979
Section Name:PHYSICS
Question:

The Paschen series of the Hydrogen spectrum exist only in the following electromagnetic spectrum.

(1) Visible light
(2) Ultra Violet region
(3) Infra Red region
(4) Micro Wave region

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

Question ID:1102980
Section Name:PHYSICS
Question:

A difference of 2.3 eV separates two energy levels in an atom. The frequency of radiation emitted when the atom transits from upper level to lower level, is :

(1) 5.55×10^{14} Hz
(2) 3.54×10^{14} Hz
(3) 1.25×10^{13} Hz
(4) 2.42×10^{15} Hz

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102981
Section Name:PHYSICS
Question:

In n^{th} orbit of Hydrogen atom, the correct relation for frequency of revolution of an electron with n, is :

(1) $\nu \propto n$

(2) $\nu \propto n^{-3}$

(3) $\nu \propto n^2$

(4) $\nu \propto n^{3/2}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102982
Section Name:PHYSICS
Question:

According to the Bohr's Theory of Hydrogen atom, the speed of electron in the first orbit will be :

(1) 137 times of speed of light

(2) $\frac{1}{137}$ times of speed of light

(3) $\frac{1}{10}$ of speed of light

(4) Half of the of speed of light

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102983
Section Name:PHYSICS

Question:

Match **List - I** with **List - II**. (Notations are having their usual meanings)

	List - I		List - II
(A)	α-decay	(I)	${}^{120}_{54}Xe + {}^{0}_{-1}e \rightarrow {}^{120}_{53}I + \nu$
(B)	β^--decay	(II)	${}^{32}_{15}P \rightarrow {}^{32}_{16}S + {}^{0}_{-1}e + \bar{\nu}$
(C)	β^+-decay	(III)	${}^{226}_{88}Ra \rightarrow {}^{222}_{86}Rn + {}_{2}He^{4}$
(D)	Electron capture	(IV)	${}^{11}_{6}C \rightarrow {}^{11}_{5}B + {}^{0}_{+1}e + \nu$

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

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

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102984
Section Name:PHYSICS
Question:

A nucleus in an excited state spontaneously decays to its ground state or a lower energy state. This decay will be :

(1) Alpha decay
(2) β^+ decay
(3) β^- decay
(4) Gamma decay

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102985
Section Name:PHYSICS
Question:

For transmission of signal in frequency range 3 to 30 MHz, long distance communication can be achieved by :

(1) Ground waves
(2) Sky waves
(3) Surface waves
(4) Space waves

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

Question ID:1102986
Section Name:PHYSICS
Question:

A message signal of frequency ω_m is superposed on a carrier wave of frequency ω_c to get an amplitude modulated wave (AM). The frequency of the AM wave will be :

(1) ω_m

(2) ω_c

(3) $\frac{\omega_c + \omega_m}{2}$

(4) $\frac{\omega_c - \omega_m}{2}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102987
Section Name:PHYSICS
Question:

An object of size 3.0 cm is placed 14 cm away from the front of a concave lens of focal length 21 cm. Height of the image formed will be :

(1) 0.6 cm

(2) 0.8 cm

(3) 1.8 cm

(4) 1.2 cm

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102988
Section Name:PHYSICS

Question:

The radius of curvature of each surface of a convex lens, is 20 cm. The focal length of lens in air is 10 cm. The refractive index of lens is :

(1) 1.25
(2) 1.50
(3) 2
(4) 4

A 1

B 2

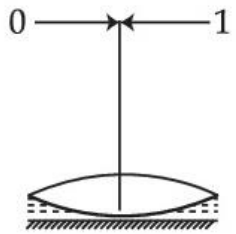
C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102989
Section Name:PHYSICS
Question:

As shown in the figure, an equiconvex lens of refractive index 1.5 is in contact with a liquid layer on top of a plane mirror. A small needle with its tip on the principle axis is moved along the axis untill inverted image is found at the position of the needle. The distance of the needle from the lens is measured to be 50 cm. The liquid is removed and the experiment is repeated. The new distance is measured to be 25 cm. The focal length of the liquid lens is :



(1) +50 cm
(2) +25 cm
(3) −25 cm
(4) −50 cm

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102990
Section Name:PHYSICS
Question:

At minimum deviation position for refraction through glass prism :

(1) angle of incidence should be equal to angle of prism
(2) angle of prism should be twice as that of angle of incidence
(3) incident ray should be parallel to base of prism
(4) angle of incidence and angle of emergence should be equal

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102991
Section Name:PHYSICS
Question:

The intrinsic semiconductors are doped with impurities to increase their conductivity. The semiconductors so obtained are called extrinsic semiconductors. When pentavalent atoms like, Aresenic (As), Antimony (Sb), Phosphorus (P) are added, n-type semiconductor is formed. Where as when trivalent impurities like Indium (In), Boron (B), Aluminium (Al) are added, the p-type semiconductor is obtained. When p-type and n-type semiconductor are fused together a p-n junction or a diode is formed.

The diodes are used to convert AC into DC and to stabilize irregulated dc output. These are also used as LED, photodiode, Solar cell.

Identify the intrinsic semiconductor from the following.

(A) CdS
(B) Ge
(C) Si
(D) GaAs
(E) InP

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

(1) (A), (B) and (C) only
(2) (A), (D) and (E) only
(3) (B) and (C) only
(4) (C) only

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102992
Section Name:PHYSICS

Question:

The intrinsic semiconductors are doped with impurities to increase their conductivity. The semiconductors so obtained are called extrinsic semiconductors. When pentavalent atoms like, Aresenic (As), Antimony (Sb), Phosphorus (P) are added, n-type semiconductor is formed. Where as when trivalent impurities like Indium (In), Boron (B), Aluminium (Al) are added, the p-type semiconductor is obtained. When p-type and n-type semiconductor are fused together a p-n junction or a diode is formed.

The diodes are used to convert AC into DC and to stabilize irregulated dc output. These are also used as LED, photodiode, Solar cell.

On increasing the temperature of semiconductor :

(1) Relaxation time increases

(2) Drift velocity of charge carriers increases

(3) Concentration of intrinsic charge carriers increases

(4) Resistance of semiconductor increases

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

Question ID:1102993
Section Name:PHYSICS
Question:

The intrinsic semiconductors are doped with impurities to increase their conductivity. The semiconductors so obtained are called extrinsic semiconductors. When pentavalent atoms like, Aresenic (As), Antimony (Sb), Phosphorus (P) are added, n-type semiconductor is formed. Where as when trivalent impurities like Indium (In), Boron (B), Aluminium (Al) are added, the p-type semiconductor is obtained. When p-type and n-type semiconductor are fused together a p-n junction or a diode is formed.

The diodes are used to convert AC into DC and to stabilize irregulated dc output. These are also used as LED, photodiode, Solar cell.

If the input frequency of a Half wave rectifies is 50 Hz, output frequency of signal will be :

(1) 50 Hz

(2) 100 Hz

(3) 25 Hz

(4) 150 Hz

A 1

B 2

C 3

D 4

Answer Given By Candidate:**C**

Question ID:1102994
Section Name:PHYSICS

Question:

The intrinsic semiconductors are doped with impurities to increase their conductivity. The semiconductors so obtained are called extrinsic semiconductors. When pentavalent atoms like, Aresenic (As), Antimony (Sb), Phosphorus (P) are added, n-type semiconductor is formed. Where as when trivalent impurities like Indium (In), Boron (B), Aluminium (Al) are added, the p-type semiconductor is obtained. When p-type and n-type semiconductor are fused together a p-n junction or a diode is formed.

The diodes are used to convert AC into DC and to stabilize irregulated dc output. These are also used as LED, photodiode, Solar cell.

LED is a heavily doped p-n junction which emits radiation :

(1) due to generation of electron hole pairs

(2) due to separation of electrons and holes due to electric field of the depletion region

(3) under forward bias

(4) under reverse bias

A 1

B 2

C 3

D 4

Answer Given By Candidate:**B**

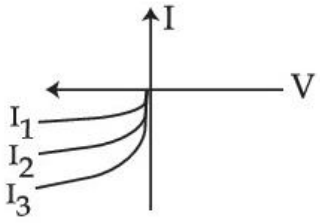
Question ID:1102995
Section Name:PHYSICS

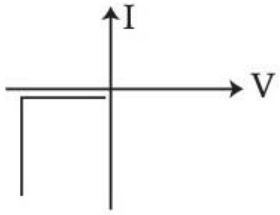
Question:

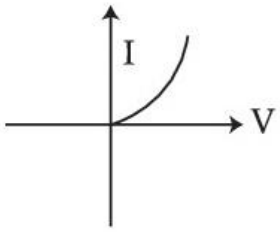
The intrinsic semiconductors are doped with impurities to increase their conductivity. The semiconductors so obtained are called extrinsic semiconductors. When pentavalent atoms like, Aresenic (As), Antimony (Sb), Phosphorus (P) are added, n-type semiconductor is formed. Where as when trivalent impurities like Indium (In), Boron (B), Aluminium (Al) are added, the p-type semiconductor is obtained. When p-type and n-type semiconductor are fused together a p-n junction or a diode is formed.

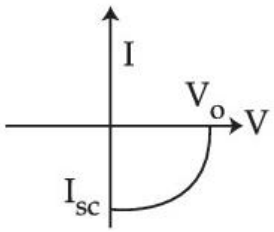
The diodes are used to convert AC into DC and to stabilize irregulated dc output. These are also used as LED, photodiode, Solar cell.

The VI characteristics of the photodiode is represented by :

(1) 

(2) 

(3) 

(4) 

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102996
Section Name:PHYSICS

Question:

When two coherent waves travelling in a medium superimposed a phenomenon of interference is observed. Young's Double Slits experiment is used to study the phenomenon of interference. In interference pattern, an alternate dark and bright fringes are obtained on the screan. In constructive interference intensity becomes maximum and bright fringes are obtained. Where as in destructive interference intensity becomes minimum and dark fringes are obtained. If one of the slit in the Young's double slit experiment is covered, then the phenomenon of diffraction can be obtained on the screan. The diffractions is the result of superposition of two secondary wavelets obtained from given wavefront.
Intensity of wave in interference pattern will be maximum if the path difference between the two waves is :

(1) $\frac{3\lambda}{2}$

(2) 2λ

(3) $\frac{5\lambda}{2}$

(4) $\frac{\lambda}{2}$

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**

Question ID:1102997
Section Name:PHYSICS
Question:

When two coherent waves travelling in a medium superimposed a phenomenon of interference is observed. Young's Double Slits experiment is used to study the phenomenon of interference. In interference pattern, an alternate dark and bright fringes are obtained on the screan. In constructive interference intensity becomes maximum and bright fringes are obtained. Where as in destructive interference intensity becomes minimum and dark fringes are obtained. If one of the slit in the Young's double slit experiment is covered, then the phenomenon of diffraction can be obtained on the screan. The diffractions is the result of superposition of two secondary wavelets obtained from given wavefront.
Two light-waves are said to be coherent, when :

(1) they are in opposite phase

(2) they have constant phase difference thoughout

(3) they have same intensity

(4) they have same amplitude

A 1

B 2

C 3

D 4

Answer Given By Candidate:**D**

Question ID:1102998
Section Name:PHYSICS
Question:

When two coherent waves travelling in a medium superimposed a phenomenon of interference is observed. Young's Double Slits experiment is used to study the phenomenon of interference. In interference pattern, an alternate dark and bright fringes are obtained on the screan. In constructive interference intensity becomes maximum and bright fringes are obtained. Where as in destructive interference intensity becomes minimum and dark fringes are obtained. If one of the slit in the Young's double slit experiment is covered, then the phenomenon of diffraction can be obtained on the screan. The diffractions is the result of superposition of two secondary wavelets obtained from given wavefront.

A beam of light consisting of two wave lengths 900 nm and 750 nm is used to obtain interference fringes in Young's double slit experiment. The least distance from the central maxima where the bright fringes due to both the wave lengths coincide, (If the distance between two slit is 3.0 mm and the screan is placed 1.5 m away from slits) will be :

(1) 1.25 mm
(2) 3.75 mm
(3) 2.25 mm
(4) 1.75 mm

A 1
B 2
C 3
D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1102999
Section Name:PHYSICS
Question:

When two coherent waves travelling in a medium superimposed a phenomenon of interference is observed. Young's Double Slits experiment is used to study the phenomenon of interference. In interference pattern, an alternate dark and bright fringes are obtained on the screan. In constructive interference intensity becomes maximum and bright fringes are obtained. Where as in destructive interference intensity becomes minimum and dark fringes are obtained. If one of the slit in the Young's double slit experiment is covered, then the phenomenon of diffraction can be obtained on the screan. The diffractions is the result of superposition of two secondary wavelets obtained from given wavefront.

In the diffraction phenomenon, the path difference. $d\sin\theta$ for first secondary maxima will be :

(Where d is width of slit)

(1) λ
(2) $\frac{\lambda}{2}$
(3) $\frac{3\lambda}{2}$
(4) Zero

A 1

B 2

C 3

D 4

Answer Given By Candidate:**Not Attempted**

Question ID:1103000
Section Name:PHYSICS
Question:

When two coherent waves travelling in a medium superimposed a phenomenon of interference is observed. Young's Double Slits experiment is used to study the phenomenon of interference. In interference pattern, an alternate dark and bright fringes are obtained on the screan. In constructive interference intensity becomes maximum and bright fringes are obtained. Where as in destructive interference intensity becomes minimum and dark fringes are obtained. If one of the slit in the Young's double slit experiment is covered, then the phenomenon of diffraction can be obtained on the screan. The diffractions is the result of superposition of two secondary wavelets obtained from given wavefront.

A student uses two coherent waves of intensities I and 4I. The resultant intensity of path difference between the two waves is $\frac{\lambda}{4}$, will be :

(1) 3I
(2) 5I
(3) Zero
(4) 2I

A 1

B 2

C 3

D 4

Answer Given By Candidate:**A**