

**Q.1** The kinetic energy of a light body and a heavy body is same. Which one of the following statements is CORRECT?

**Ans**  1.

The light body has greater momentum.

 2.

A body having high velocity has greater momentum.

 3.

Both bodies have same momentum.

 4.

The heavy body has greater momentum.

Question Type : **MCQ**

Question ID : 37135117474

Option 1 ID : 37135169894

Option 2 ID : 37135169895

Option 3 ID : 37135169896

Option 4 ID : 37135169893

Status : **Marked For Review**

Chosen Option : 4



Q.2

A simple pendulum has length 2m and a bob of mass 100 gram. It is whirled in a horizontal plane. If the string breaks under a tension of 10 N, the angle made by the string with vertical is ( $g = 10\text{m/s}^2$ )

Ans

✗ 1.  $\cos^{-1}(0.4)$

✓ 2.  $\cos^{-1}(0.1)$

✗ 3.  $\cos^{-1}(0.05)$

✗ 4.  $\cos^{-1}(0.2)$

Question Type : MCQ

Question ID : 37135117481

Option 1 ID : 37135169921

Option 2 ID : 37135169923

Option 3 ID : 37135169924

Option 4 ID : 37135169922

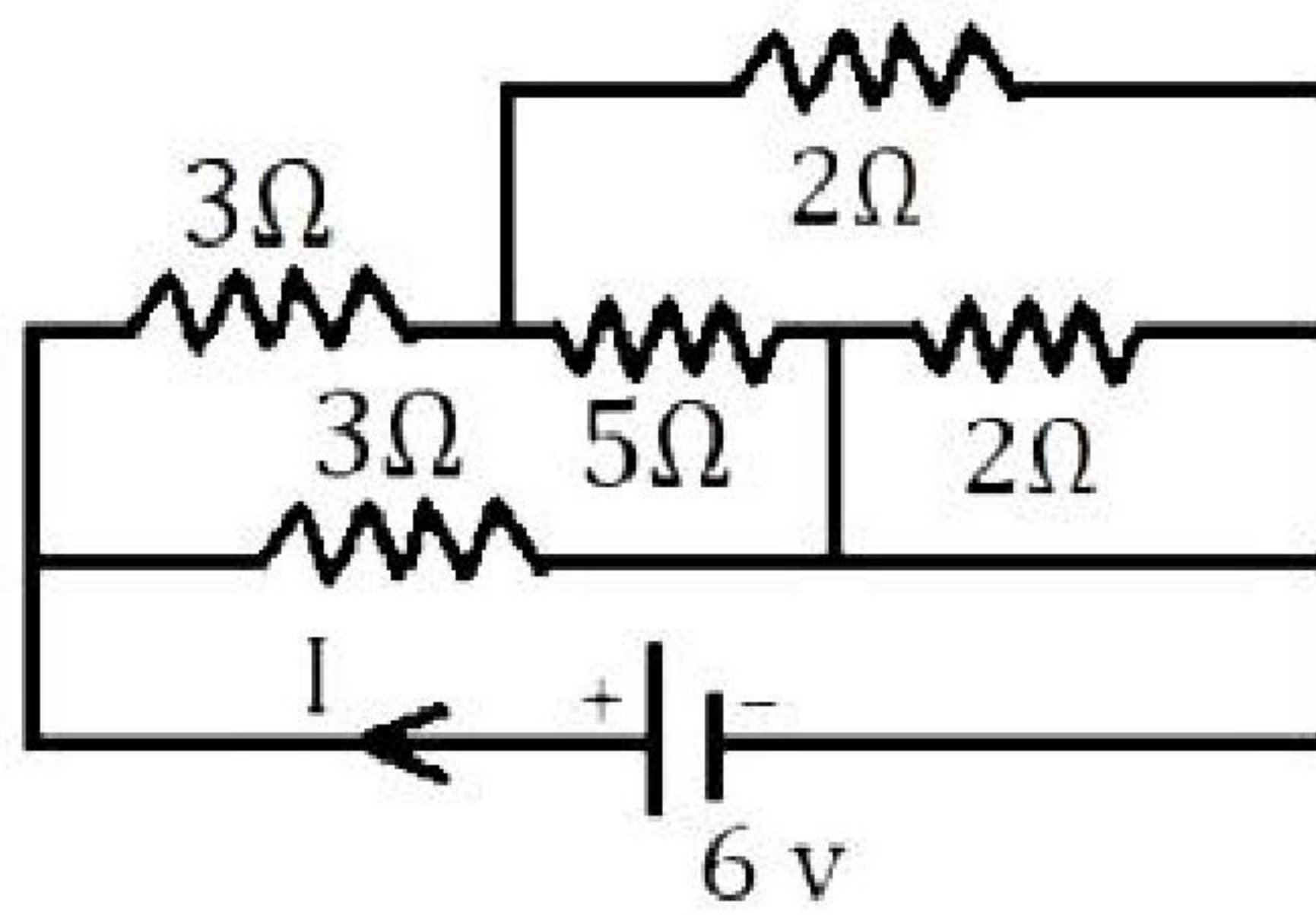
Status : Answered

Chosen Option : 3



Q.3

The current drawn from the battery in the given network is  
(Internal resistance of battery is neglected)



Ans

✓ 1.  $2.4\text{ A}$

✗ 2.  $0.6\text{ A}$

✗ 3.  $3.6\text{ A}$

✗ 4.  $1.2\text{ A}$

Question Type : MCQ

Question ID : 37135117490

Option 1 ID : 37135169958

Option 2 ID : 37135169960

Option 3 ID : 37135169957

Option 4 ID : 37135169959

Status : Marked For Review

Chosen Option : 3



Q.4

In the expression  $A = B + \frac{C}{D+E}$ , the dimensions of physical quantities B and C are  $[L^1 M^0 T^{-1}]$  and  $[L^1 M^0 T^0]$  respectively. The dimensions of quantities A, D and E are

Ans

✓ 1.

$$[A] = [L^1 M^0 T^{-1}], \quad [D] = [T^1], [E] = [T^1]$$

✗ 2.

$$[A] = [L^0 M^0 T^{-1}], \quad [D] = [T^1], [E] = [L^1 T^1]$$

✗ 3.

$$[A] = [L^1 M^1 T^0], \quad [D] = [T^2], [E] = [L^1 T^2]$$

✗ 4.

$$[A] = [L^1 M^0 T^{-1}], \quad [D] = [M^1 T^1], [E] = [M^1 T^1]$$

Question Type : MCQ

Question ID : 37135117478

Option 1 ID : 37135169912

Option 2 ID : 37135169909

Option 3 ID : 37135169910

Option 4 ID : 37135169911

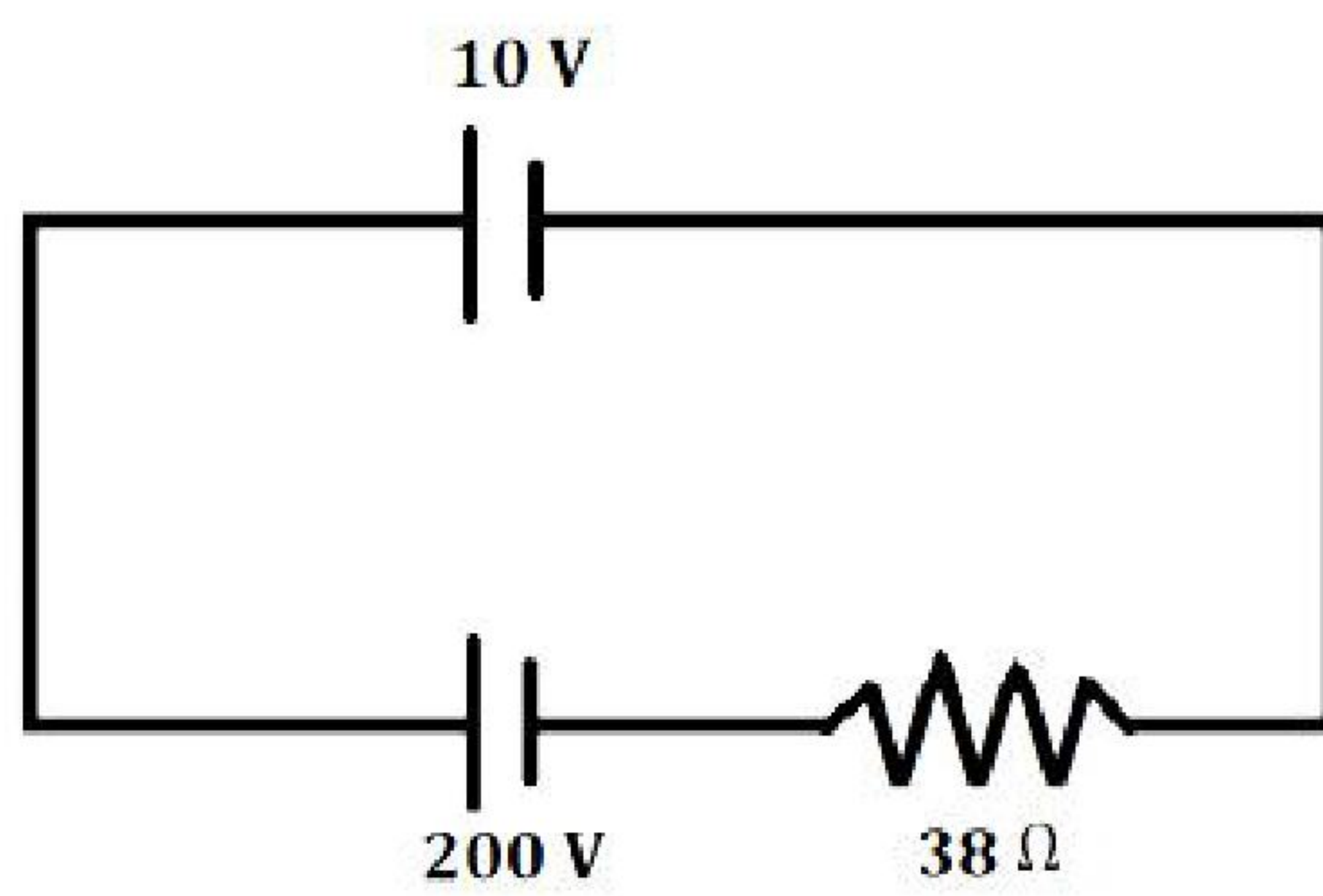
Status : Answered

Chosen Option : 1



Q.5

In the given circuit, current flowing through it is



Ans

✓ 1. 5 A

✗ 2. 4 A

✗ 3. 2 A

✗ 4. 3 A

Question Type : MCQ

Question ID : 37135117461

Option 1 ID : 37135169844

Option 2 ID : 37135169843

Option 3 ID : 37135169841

Option 4 ID : 37135169842

Status : Answered

Chosen Option : 1



Q.6

Two satellites of masses ' $m$ ' and ' $4m$ ' are revolving in a same orbit around the earth. Which one of the following statements is correct?

Ans

 1.

They have periods in the ratio 1:4.

 2.

They have same kinetic energy.

 3.

They have same potential energy.

 4.

They have same period.

Question Type : MCQ

Question ID : 37135117460

Option 1 ID : 37135169839

Option 2 ID : 37135169838

Option 3 ID : 37135169840

Option 4 ID : 37135169837

Status : Answered

Chosen Option : 4



Q.7

Choose the CORRECT statement from the following.

Brewster's angle for a transparent medium is

Ans

✓ 1.

different for lights of different colours.

✗ 2.

different for lights of same colour.

✗ 3.

same for lights of different colours.

✗ 4.

independent of refractive index of the medium.

Question Type : MCQ

Question ID : 37135117479

Option 1 ID : 37135169913

Option 2 ID : 37135169916

Option 3 ID : 37135169914

Option 4 ID : 37135169915

Status : Marked For Review

Chosen Option : 1

Q.8

A vector  $\vec{A}$  having magnitude 6 units is added to vector  $\vec{B}$ , which is along x-axis.

The resultant of  $\vec{A}$  and  $\vec{B}$  is along Y axis. If the magnitude of the resultant of  $\vec{A}$  and

$\vec{B}$  is three times that of  $\vec{B}$  then magnitude of  $\vec{B}$  is

Ans

✗ 1.  $\sqrt{1 \cdot 8}$

✗ 2.  $\sqrt{2 \cdot 4}$

✓ 3.  $\sqrt{3 \cdot 6}$

✗ 4.  $\sqrt{1 \cdot 2}$

Question Type : MCQ

Question ID : 37135117458

Option 1 ID : 37135169831

Option 2 ID : 37135169830

Option 3 ID : 37135169829

Option 4 ID : 37135169832

Status : Answered

Chosen Option : 3



Q.9

Let a force  $\vec{F} = -F\hat{k}$  acts on the origin of cartesian frame of reference. The moment of force about a point  $(1, -1)$  will be

Ans

 1.  $\div F(\hat{i} + \hat{j})$

 2.  $-F(\hat{i} - \hat{j})$

 3.  $F(\hat{i} - \hat{j})$

 4.  $F(\hat{i} + \hat{j})$

Question Type : MCQ

Question ID : 37135117488

Option 1 ID : 37135169949

Option 2 ID : 37135169951

Option 3 ID : 37135169952

Option 4 ID : 37135169950

Status : Marked For Review

Chosen Option : 2



**Q.10** In an atom, electron of charge  $(-e)$  performs U.C.M. around a stationary positively charged nucleus, with period of revolution 'T'. If 'r' is the radius of the orbit of the electron and 'v' is the orbital velocity, then the circulating current (I) is proportional to

**Ans**

 1.  $e^1 r^{-1} v^{-1}$

 2.  $e^1 r^1 v^{-1}$

 3.  $e^1 v^1 r^{-1}$

 4.  $v^1 r^1 e^{-1}$

Question Type : MCQ

Question ID : 37135117465

Option 1 ID : 37135169860

Option 2 ID : 37135169857

Option 3 ID : 37135169859

Option 4 ID : 37135169858

Status : Answered

Chosen Option : 2

**Q.11** A body of mass 'm' moving with speed 3 m/s collides with a body of mass '2m' at rest. The coalesced mass will start to move with a speed of

**Ans**

 1. 3 m/s

 2. 6 m/s

 3. 9 m/s

 4. 1 m/s

Question Type : MCQ

Question ID : 37135117483

Option 1 ID : 37135169930

Option 2 ID : 37135169931

Option 3 ID : 37135169932

Option 4 ID : 37135169929

Status : Marked For Review

Chosen Option : 1



**Q.12** We have a sample of gas characterised by  $P$ ,  $V$  and  $T$  and another sample of gas characterised by  $2P$ ,  $V/4$ , and  $2T$ . What is the ratio of the number of molecules in the first and second samples?

**Ans**

-  1. 2:1
-  2. 4:1
-  3. 8:1
-  4. 16:1

Question Type : **MCQ**

Question ID : 37135117466

Option 1 ID : 37135169861

Option 2 ID : 37135169862

Option 3 ID : 37135169863

Option 4 ID : 37135169864

Status : **Answered**

Chosen Option : 2

**Q.13** When a capacitor is connected in series LR circuit, the alternating current flowing in the circuit

**Ans**

-  1. increases.
-  2. decreases.
-  3. remains constant.
-  4. is zero.

Question Type : **MCQ**

Question ID : 37135117495

Option 1 ID : 37135169977

Option 2 ID : 37135169978

Option 3 ID : 37135169979

Option 4 ID : 37135169980

Status : **Marked For Review**

Chosen Option : 2



Q.14

A black body radiates maximum energy at wavelength ' $\lambda$ ' and its emissive power is 'E'. Now, due to change in temperature of that body, it radiates maximum energy at wavelength  $\frac{2\lambda}{3}$ . At that temperature, emissive power is

Ans

 1.  $\frac{27E}{16}$

 2.  $\frac{81E}{16}$

 3.  $\frac{91E}{16}$

 4.  $\frac{54E}{16}$

Question Type : MCQ

Question ID : 37135117497

Option 1 ID : 37135169985

Option 2 ID : 37135169987

Option 3 ID : 37135169988

Option 4 ID : 37135169986

Status : Answered

Chosen Option : 2



Q.15

The area of a coil is 'A'. The coil is placed in a magnetic field which changes from 'B<sub>0</sub>' to '4B<sub>0</sub>' in time 't'. The magnitude of induced e.m.f. in the coil will be

Ans

✓ 1.  $\frac{3AB_0}{t}$

✗ 2.  $\frac{4AB_0}{t}$

✗ 3.  $\frac{3B_0}{At}$

✗ 4.  $\frac{4B_0}{At}$

Question Type : MCQ

Question ID : 37135117470

Option 1 ID : 37135169880

Option 2 ID : 37135169879

Option 3 ID : 37135169878

Option 4 ID : 37135169877

Status : Answered

Chosen Option : 1



Q.16

A body is moving along the horizontal surface with a velocity of 4 m/s. If the coefficient of kinetic friction is 0.2, the distance travelled by body before coming to rest is ( $g = 10 \text{ m/s}^2$ )

Ans

 1. 8 m

 2. 16 m

 3. 4 m

 4. 6 m

Question Type : MCQ

Question ID : 37135117493

Option 1 ID : 37135169970

Option 2 ID : 37135169969

Option 3 ID : 37135169972

Option 4 ID : 37135169971

Status : Answered

Chosen Option : 3

Q.17

The fundamental frequency of open pipe is 'n'. If it is closed from one end then frequency of the 2<sup>nd</sup> harmonic of closed pipe is higher by 200 Hz than 'n'. The value of 'n' is

Ans

 1. 800 Hz

 2. 200 Hz

 3. 100 Hz

 4. 400 Hz

Question Type : MCQ

Question ID : 37135117491

Option 1 ID : 37135169964

Option 2 ID : 37135169962

Option 3 ID : 37135169961

Option 4 ID : 37135169963

Status : Answered

Chosen Option : 4



Q.18

Identify the 'INCORRECT' statement from the following.

Ans

✓ 1.

Modulation index  $\mu$  is kept greater than one to avoid distortion.

✗ 2.

The receiving antenna is followed by amplifier, intermediate frequency (IF) stage and detector.

✗ 3.

AM detection is carried out using a rectifier and an envelop detector.

✗ 4.

Modulated signal is to be followed by power amplifier and then fed to an antenna.

Question Type : MCQ

Question ID : 37135117475

Option 1 ID : 37135169899

Option 2 ID : 37135169900

Option 3 ID : 37135169897

Option 4 ID : 37135169898

Status : Marked For Review

Chosen Option : 2

Q.19

If two light waves reaching at a point produce destructive interference, then condition of phase difference is

Ans

✗ 1.

$0, 2\pi, 4\pi, 6\pi \dots$

✗ 2.

$\frac{\pi}{4}, \frac{\pi}{2}, \frac{3\pi}{4} \dots$

✗ 3.

$\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2} \dots$

✓ 4.

$\pi, 3\pi, 5\pi \dots$

Question Type : MCQ

Question ID : 37135117471

Option 1 ID : 37135169881

Option 2 ID : 37135169884

Option 3 ID : 37135169882

Option 4 ID : 37135169883

Status : Answered

Chosen Option : 4



Q.20

What would be the absolute pressure at depth 1km below the ocean?

[Given : density of water =  $10^3 \text{ kg/m}^3$ ,  $g = 10 \text{ m/s}^2$ , 1 atmospheric pressure =  $1.01 \times 10^5 \text{ N/m}^2$ ]

Ans

☒ 1.  $10.101 \times 10^7 \text{ N/m}^2$

☒ 2.  $10.101 \times 10^7 \text{ dyne/cm}^2$

☒ 3.  $10.101 \times 10^6 \text{ dyne/cm}^2$

☒ 4.  $10.101 \times 10^6 \text{ N/m}^2$

Question Type : MCQ

Question ID : 37135117452

Option 1 ID : 37135169807

Option 2 ID : 37135169808

Option 3 ID : 37135169806

Option 4 ID : 37135169805

Status : Answered

Chosen Option : 4

Q.21

An alternating electric field of frequency ' $\nu$ ' is applied across the dees of a cyclotron which is used to accelerate protons of mass ' $m$ '. The radius of the dees is ' $R$ '. The operating magnetic field used in cyclotron is ' $B$ '. The kinetic energy of the proton beam is given by

Ans

☒ 1.  $2m \pi^2 \nu^2 R^2$

☒ 2.  $2m\pi \nu^2 R^2$

☒ 3.  $m \pi^2 \nu^2 R^2$

☒ 4.  $m \pi \nu^2 R^2$

Question Type : MCQ

Question ID : 37135117487

Option 1 ID : 37135169948

Option 2 ID : 37135169947

Option 3 ID : 37135169946

Option 4 ID : 37135169945

Status : Answered

Chosen Option : 1



Q.22

What will be the resistance of the shunt when 5% of the main current is passed through a galvanometer of resistance G?

Ans

 1.  $\frac{G}{20}$

 2.  $\frac{G}{21}$

 3.  $\frac{G}{5}$

 4.  $\frac{G}{19}$

Question Type : MCQ

Question ID : 37135117467

Option 1 ID : 37135169867

Option 2 ID : 37135169868

Option 3 ID : 37135169865

Option 4 ID : 37135169866

Status : Answered

Chosen Option : 4



**Q.23** An engine is moving on a circular path of radius 200 m with speed of 15 m/s. What will be the frequency heard by an observer who is at rest at the centre of the circular path, when engine blows the whistle with frequency 250 Hz?

**Ans**

- ☒ 1. Less than 250 Hz
- ☒ 2. Greater than 250 Hz
- ☒ 3. 250 Hz
- ☒ 4. zero

Question Type : **MCQ**

Question ID : 37135117486

Option 1 ID : 37135169942

Option 2 ID : 37135169944

Option 3 ID : 37135169943

Option 4 ID : 37135169941

Status : **Answered**

Chosen Option : 3

**Q.24** In a resonance tube experiment, a tuning fork resonates with air column of length 12 cm and again resonates when air column is 38 cm long. The end correction will be

**Ans**

- ☒ 1. 0.25 cm
- ☒ 2. 0.5 cm
- ☒ 3. 1 cm
- ☒ 4. 0.75 cm

Question Type : **MCQ**

Question ID : 37135117455

Option 1 ID : 37135169817

Option 2 ID : 37135169818

Option 3 ID : 37135169820

Option 4 ID : 37135169819

Status : **Answered**

Chosen Option : 3



Q.25

When the electron orbiting in hydrogen atom in its ground state moves to third excited state, the de-Broglie wavelength associated with it

Ans

- ☒ 1. will decrease.
- ☒ 2. remain same.
- ☒ 3. will increase.
- ☒ 4. will be zero.

Question Type : MCQ

Question ID : 37135117492

Option 1 ID : 37135169965

Option 2 ID : 37135169966

Option 3 ID : 37135169968

Option 4 ID : 37135169967

Status : Answered

Chosen Option : 1

Q.26

A particle is revolving in anticlockwise sense along the circumference of a circle of radius 'r' with linear velocity 'v', then the angle between 'v' and angular velocity ' $\omega$ ' will be

Ans

- ☒ 1.  $180^\circ$
- ☒ 2.  $90^\circ$
- ☒ 3.  $45^\circ$
- ☒ 4.  $0^\circ$

Question Type : MCQ

Question ID : 37135117464

Option 1 ID : 37135169856

Option 2 ID : 37135169855

Option 3 ID : 37135169854

Option 4 ID : 37135169853

Status : Marked For Review

Chosen Option : 4



**Q.27** If the spherical planet of mass 'M' and radius 'R' suddenly shrinks to half its size, its mass reduces to half. The new moment of inertia of the planet about its diameter is

**Ans**

 1.  $\frac{MR^2}{10}$

 2.  $\frac{MR^2}{20}$

 3.  $\frac{2}{3}MR^2$

 4.  $\frac{2}{5}MR^2$

Question Type : **MCQ**

Question ID : **37135117456**

Option 1 ID : **37135169822**

Option 2 ID : **37135169824**

Option 3 ID : **37135169823**

Option 4 ID : **37135169821**

Status : **Answered**

Chosen Option : **1**



Q.28

A particle starts from mean position and performs S.H.M. with period 6 second. At what time its kinetic energy is 50% of total energy? ( $\cos 45^\circ = \frac{1}{\sqrt{2}}$ )

Ans

- ✓ 1. 0.75 second
- ✗ 2. 1 second
- ✗ 3. 0.25 second
- ✗ 4. 0.50 second

4

Question Type : MCQ

Question ID : 37135117469

Option 1 ID : 37135169874

Option 2 ID : 37135169873

Option 3 ID : 37135169876

Option 4 ID : 37135169875

Status : Answered

Chosen Option : 1

Q.29

The susceptibility of a magnetic material is positive and small. The material is

Ans

- ✗ 1. diamagnetic and ferromagnetic.
- ✓ 2. paramagnetic.
- ✗ 3. ferromagnetic.
- ✗ 4. diamagnetic.

Question Type : MCQ

Question ID : 37135117477

Option 1 ID : 37135169908

Option 2 ID : 37135169906

Option 3 ID : 37135169907

Option 4 ID : 37135169905

Status : Answered

Chosen Option : 2



Q.30

Photoelectrons are emitted from a photosensitive surface for the light of wavelengths  $\lambda_1 = 360 \text{ nm}$  and  $\lambda_2 = 600 \text{ nm}$ . What is the ratio of work functions for lights of wavelength ' $\lambda_1$ ' to ' $\lambda_2$ '?

Ans

☐ 1. 6:1

☐ 2. 1:6

☒ 3. 5:3

☐ 4. 3:5

Question Type : MCQ

Question ID : 37135117459

Option 1 ID : 37135169835

Option 2 ID : 37135169834

Option 3 ID : 37135169836

Option 4 ID : 37135169833

Status : Answered

Chosen Option : 3

Q.31

Choose the correct relation between polarisation ' $P$ ' and electric susceptibility ' $\chi_e$ ' of dielectric material. ( $E$  = electric field)

Ans

☐ 1.  $P = \frac{\chi_e}{E^2}$

☐ 2.  $P = \frac{\chi_e}{E}$

☒ 3.  $P = \chi_e E$

☐ 4.  $P = \chi_e^2 E$

Question Type : MCQ

Question ID : 37135117454

Option 1 ID : 37135169814

Option 2 ID : 37135169813

Option 3 ID : 37135169815

Option 4 ID : 37135169816

Status : Marked For Review

Chosen Option : 3



Q.32

The radii of the first four Bohr orbits of hydrogen atom are related as

Ans

☐ 1.  $1 : 2 : 3 : 4$

☒ 2.  $1 : 4 : 9 : 16$

☐ 3.  $1 : \frac{1}{2} : \frac{1}{3} : \frac{1}{4}$

☐ 4.  $1 : \frac{1}{4} : \frac{1}{9} : \frac{1}{16}$

Question Type : MCQ

Question ID : 37135117451

Option 1 ID : 37135169801

Option 2 ID : 37135169802

Option 3 ID : 37135169803

Option 4 ID : 37135169804

Status : Answered

Chosen Option : 2

Q.33

For a ray of light, the critical angle is minimum when it travels from

Ans

☐ 1. air to glass.

☐ 2. glass to water.

☐ 3. water to glass.

☒ 4. glass to air.

Question Type : MCQ

Question ID : 37135117498

Option 1 ID : 37135169990

Option 2 ID : 37135169991

Option 3 ID : 37135169992

Option 4 ID : 37135169989

Status : Answered

Chosen Option : 4



Q.34

The correct statement about stationary wave is that

Ans

✓ 1.

displacement at node is zero and at antinode is maximum.

✗ 2.

displacement at node is maximum and at antinode is zero.

✗ 3.

displacement at node is maximum.

✗ 4.

displacement at antinode is minimum.

Question Type : MCQ

Question ID : 37135117476

Option 1 ID : 37135169903

Option 2 ID : 37135169904

Option 3 ID : 37135169901

Option 4 ID : 37135169902

Status : Answered

Chosen Option : 1

Q.35

Out of the following units, the WRONG unit of magnetic dipole moment is

Ans

✗ 1.

$\text{Nm}^3 / \text{Wb}$

✗ 2.

$\text{Am}^2$

✓ 3.

$\text{J} - \text{T}$

✗ 4.

$\text{N m/T}$

Question Type : MCQ

Question ID : 37135117463

Option 1 ID : 37135169852

Option 2 ID : 37135169850

Option 3 ID : 37135169849

Option 4 ID : 37135169851

Status : Answered

Chosen Option : 3



Q.36

The earth is assumed to be a charged conducting sphere having volume 'V' and surface area 'A'. The capacitance of the earth in free space is  
( $\epsilon_0$  = permittivity of free space)

Ans

✓ 1.  $12\pi \epsilon_0 \frac{V}{A}$

✗ 2.  $4\pi \epsilon_0 \frac{V}{A}$

✗ 3.  $2\pi \epsilon_0 \frac{V}{A}$

✗ 4.  $8\pi \epsilon_0 \frac{V}{A}$

Question Type : MCQ

Question ID : 37135117482

Option 1 ID : 37135169925

Option 2 ID : 37135169927

Option 3 ID : 37135169928

Option 4 ID : 37135169926

Status : Marked For Review

Chosen Option : 2



Q.37

A mass  $2\sqrt{3}$  kg is acted upon by two forces which are inclined to each other at  $60^\circ$  and each of magnitude 1N. The acceleration of that mass in SI system is  
[ $\sin 30^\circ = \cos 60^\circ = 0.5$ ]

Ans

✗ 1.  $0.7 \text{ m/s}^2$

✗ 2.  $0.3 \text{ m/s}^2$

✗ 3.  $0.9 \text{ m/s}^2$

✓ 4.  $0.5 \text{ m/s}^2$

Question Type : MCQ

Question ID : 37135117468

Option 1 ID : 37135169871

Option 2 ID : 37135169869

Option 3 ID : 37135169872

Option 4 ID : 37135169870

Status : Answered

Chosen Option : 4

Q.38

Two incident radiations having energies two times and ten times of the work function of a metal surface, produce photoelectric effect. The ratio of maximum velocities of emitted photo electrons respectively is

Ans

✗ 1. 3:2

✓ 2. 1:3

✗ 3. 2:3

✗ 4. 1:2

Question Type : MCQ

Question ID : 37135117480

Option 1 ID : 37135169920

Option 2 ID : 37135169918

Option 3 ID : 37135169919

Option 4 ID : 37135169917

Status : Answered

Chosen Option : 2



**Q.39** A steel ring of radius 'r' is to be fitted over a wooden disc of radius 'R' ( $R > r$ ). The force required to expand the ring so that it fits over the disc is  
 [Y = Young's modulus of steel, A = area of cross section of wire]

**Ans**

✓ 1.  $YA \left( \frac{R-r}{r} \right)$

✗ 2.  $YA \left( \frac{r}{R-r} \right)$

✗ 3.  $YA \frac{r}{R}$

✗ 4.  $\left( \frac{YAR}{r} \right)$

Question Type : **MCQ**

Question ID : **37135117472**

Option 1 ID : **37135169885**

Option 2 ID : **37135169887**

Option 3 ID : **37135169888**

Option 4 ID : **37135169886**

Status : **Answered**

Chosen Option : **1**



Q.40

To obtain a magnified image at distance of distinct vision (DDV) using a simple microscope, the object should be placed

Ans



between the principal focus and optical centre of the lens.

✗ 2. at the principal focus.

✗ 3.

slightly beyond the principal focus.

✗ 4.

at the distance of distinct vision.

Question Type : MCQ

Question ID : 37135117453

Option 1 ID : 37135169811

Option 2 ID : 37135169810

Option 3 ID : 37135169809

Option 4 ID : 37135169812

Status : Marked For Review

Chosen Option : 3



Q.41

A straight horizontal conducting rod of length 'L' and mass 'M' is suspended by two vertical wires at its ends. If 'I' is the current passing through the rod, then in order that tension in the wire is zero, the magnetic field set up normal to the conductor is

(Neglect the mass of wire,  $g$  = acceleration due to gravity)

Ans

 1.  $\frac{IL}{Mg}$

 2.  $\frac{Mg}{IL^2}$

 3.  $\frac{Mg}{I^2L}$

 4.  $\frac{Mg}{IL}$

Question Type : MCQ

Question ID : 37135117473

Option 1 ID : 37135169892

Option 2 ID : 37135169891

Option 3 ID : 37135169889

Option 4 ID : 37135169890

Status : Answered

Chosen Option : 2



Q.42

When p-n junction diode is reverse biased, then the width of the barrier potential will

Ans

✓ 1.

increase and it will offer more resistance.

✗ 2.

decrease and it will offer zero resistance.

✗ 3.

remain constant and it will not offer resistance.

✗ 4.

decrease and it will offer more resistance.

Question Type : MCQ

Question ID : 37135117457

Option 1 ID : 37135169826

Option 2 ID : 37135169828

Option 3 ID : 37135169827

Option 4 ID : 37135169825

Status : Answered

Chosen Option : 1

Q.43

Three liquids have same surface tension and densities  $\rho_1, \rho_2$ , and  $\rho_3$  ( $\rho_1 > \rho_2 > \rho_3$ ).

In three identical capillaries, rise of liquid is same. The corresponding angles of contact  $\theta_1, \theta_2$  and  $\theta_3$  are related as

Ans

✗ 1.

$$\theta_1 > \theta_2 > \theta_3$$

✗ 2.

$$\theta_1 < \theta_2 > \theta_3$$

✗ 3.

$$\theta_1 > \theta_2 < \theta_3$$

✓ 4.

$$\theta_1 < \theta_2 < \theta_3$$

Question Type : MCQ

Question ID : 37135117489

Option 1 ID : 37135169953

Option 2 ID : 37135169956

Option 3 ID : 37135169954

Option 4 ID : 37135169955

Status : Answered

Chosen Option : 1



**Q.44** The moment of inertia of a uniform square plate about an axis perpendicular to its plane and passing through the centre is  $\frac{Ma^2}{6}$  where M is the mass and 'a' is the side of square plate. Moment of inertia of this plate about an axis perpendicular to its plane and passing through one of its corner is

**Ans**

 1.  $\frac{Ma^2}{3}$

 2.  $\frac{3}{Ma^2}$

 3.  $\frac{3Ma^2}{2}$

 4.  $\frac{2Ma^2}{3}$

Question Type : **MCQ**

Question ID : **37135117484**

Option 1 ID : **37135169934**

Option 2 ID : **37135169936**

Option 3 ID : **37135169935**

Option 4 ID : **37135169933**

Status : **Answered**

Chosen Option : **4**



Q.45

A particle executes simple harmonic motion with amplitude 'A' and period 'T'. If it is half way between mean position and extreme position, then its speed at that point is

Ans

✗ 1.  $\frac{3\pi A}{T}$

✗ 2.  $\frac{\sqrt{3} \pi A}{2T}$

✗ 3.  $\frac{\pi A}{T}$

✓ 4.  $\frac{\sqrt{3} \pi A}{T}$

Question Type : MCQ

Question ID : 37135117494

Option 1 ID : 37135169973

Option 2 ID : 37135169976

Option 3 ID : 37135169975

Option 4 ID : 37135169974

Status : Answered

Chosen Option : 4



Q.46 A body is projected vertically upwards from earth's surface. If velocity of projection is  $(\frac{1}{3})^{rd}$  of escape velocity, then the height upto which a body rises is (R = radius of earth)

Ans

☒ 1.  $2R$

☒ 2.  $\frac{R}{4}$

☒ 3.  $\frac{R}{2}$

☒ 4.  $R$

Question Type : MCQ

Question ID : 37135117499

Option 1 ID : 37135169996

Option 2 ID : 37135169993

Option 3 ID : 37135169994

Option 4 ID : 37135169995

Status : Answered

Chosen Option : 2

Q.47 In a study of transistor as an amplifier, the ratio of collector current to emitter current is 0.98. The collector current is 3mA, then base current will be approximately

Ans

☒ 1. 6mA

☒ 2. 60mA

☒ 3.  $6\mu A$

☒ 4.  $60\mu A$

Question Type : MCQ

Question ID : 37135117485

Option 1 ID : 37135169938

Option 2 ID : 37135169940

Option 3 ID : 37135169937

Option 4 ID : 37135169939

Status : Answered

Chosen Option : 4



Q.48

A body performs linear S.H.M. with amplitude 'a'. When it is at a distance  $\frac{a}{3}$  from extreme position, the magnitude of velocity is  $\frac{1}{3}$  times the magnitude of acceleration. The period of S.H.M. is

Ans

☒ 1.  $\frac{3\pi}{2\sqrt{5}}$  s

☒ 2.  $\frac{5\pi}{3\sqrt{5}}$  s

☒ 3.  $\frac{2\pi}{3\sqrt{5}}$  s

☒ 4.  $\frac{\pi}{3\sqrt{5}}$  s

Question Type : MCQ

Question ID : 37135117462

Option 1 ID : 37135169847

Option 2 ID : 37135169848

Option 3 ID : 37135169845

Option 4 ID : 37135169846

Status : Answered

Chosen Option : 3



Q.49

A wire of Young's modulus  $1.6 \times 10^{12} \text{ N/m}^2$  is stretched by a force so as to produce a strain of  $2 \times 10^{-4}$ . The energy density of the wire is

Ans

✓ 1.  $3.2 \times 10^4 \text{ J/m}^3$

✗ 2.  $3.2 \times 10^8 \text{ J/m}^3$

✗ 3.  $1.6 \times 10^3 \text{ J/m}^3$

✗ 4.  $6.4 \times 10^3 \text{ J/m}^3$

Question Type : MCQ

Question ID : 37135117500

Option 1 ID : 37135169998

Option 2 ID : 37135169999

Option 3 ID : 37135169997

Option 4 ID : 37135170000

Status : Answered

Chosen Option : 1

Q.50

In Young's double slit experiment, the ratio of intensities at two points on a screen

when waves from the two slits have a path difference of zero and  $\frac{\lambda}{4}$  is

$[\cos 0^\circ = \sin 90^\circ = 1, \sin 0^\circ = \cos 90^\circ = 0]$

Ans

✓ 1. 2:1

✗ 2. 3:1

✗ 3. 2:3

✗ 4. 3:2

Question Type : MCQ

Question ID : 37135117496

Option 1 ID : 37135169981

Option 2 ID : 37135169982

Option 3 ID : 37135169984

Option 4 ID : 37135169983

Status : Answered

Chosen Option : 1



Q.1

Identify the inert gas used for filling balloons?

Ans

 1. Krypton

 2. Neon

 3. Helium

 4. Argon

Question Type : **MCQ**

Question ID : 37135117548

Option 1 ID : 37135170192

Option 2 ID : 37135170190

Option 3 ID : 37135170189

Option 4 ID : 37135170191

Status : **Answered**

Chosen Option : 3

Q.2

Which among the following is biodegradable polymer?

Ans

 1. PHBV

 2. Buna - N

 3. PTFE

 4. PVC

Question Type : **MCQ**

Question ID : 37135117512

Option 1 ID : 37135170047

Option 2 ID : 37135170045

Option 3 ID : 37135170046

Option 4 ID : 37135170048

Status : **Answered**

Chosen Option : 1



Q.3

Conductivity of a conductor is

Ans

- ☒ 1. equal to resistivity
- ☒ 2. inverse of resistance
- ☒ 3. inverse of conductance
- ☒ 4. inverse of resistivity

Question Type : MCQ

Question ID : 37135117506

Option 1 ID : 37135170024

Option 2 ID : 37135170022

Option 3 ID : 37135170021

Option 4 ID : 37135170023

Status : Answered

Chosen Option : 4

Q.4

If radius of anion is double that of cation, coordination number of cation and type of hole occupied respectively are

Ans

- ☒ 1. 3, trigonal
- ☒ 2. 4, tetrahedral
- ☒ 3. 8, cubic
- ☒ 4. 6, octahedral

Question Type : MCQ

Question ID : 37135117546

Option 1 ID : 37135170184

Option 2 ID : 37135170183

Option 3 ID : 37135170182

Option 4 ID : 37135170181

Status : Answered

Chosen Option : 2



Q.5

Which of the following is ferromagnetic in nature?

Ans

 1. Oxygen

 2. Gadolinium

 3. Benzene

 4. Water

Question Type : **MCQ**

Question ID : 37135117505

Option 1 ID : 37135170017

Option 2 ID : 37135170020

Option 3 ID : 37135170018

Option 4 ID : 37135170019

Status : **Marked For Review**

Chosen Option : 2

Q.6

Which products are obtained when methoxy ethane is heated with HI?

Ans

 1.  $\text{CH}_3\text{I}$  and  $\text{C}_2\text{H}_5\text{I}$

 2.  $\text{CH}_3\text{I}$  and  $\text{C}_2\text{H}_5\text{OH}$

 3.  $\text{CH}_3\text{OH}$  and  $\text{C}_2\text{H}_5\text{OH}$

 4.  $\text{C}_2\text{H}_5\text{I}$  and  $\text{CH}_3\text{OH}$

Question Type : **MCQ**

Question ID : 37135117508

Option 1 ID : 37135170031

Option 2 ID : 37135170029

Option 3 ID : 37135170032

Option 4 ID : 37135170030

Status : **Answered**

Chosen Option : 2



Q.7

What is the oxidation number of Carbon in  $K_2C_2O_4$  ?

Ans

✓ 1. +3

✗ 2. -2

✗ 3. 0

✗ 4. +4

Question Type : MCQ

Question ID : 37135117511

Option 1 ID : 37135170042

Option 2 ID : 37135170044

Option 3 ID : 37135170041

Option 4 ID : 37135170043

Status : Answered

Chosen Option : 1

Q.8

Which of the following compound is used as fire extinguisher?

Ans

✓ 1.  $NaHCO_3$

✗ 2.  $Na_2CO_3$

✗ 3.  $NaOH$

✗ 4.  $Na_2SO_4$

Question Type : MCQ

Question ID : 37135117532

Option 1 ID : 37135170127

Option 2 ID : 37135170125

Option 3 ID : 37135170126

Option 4 ID : 37135170128

Status : Answered

Chosen Option : 3



Q.9 Which of the following molecules contain 25 % S character of carbon atom in hybrid state?

Ans

☐ 1. Ethylene

☐ 2. Acetylene

☒ 3. Methane

☐ 4. Benzene

Question Type : MCQ

Question ID : 37135117521

Option 1 ID : 37135170083

Option 2 ID : 37135170081

Option 3 ID : 37135170082

Option 4 ID : 37135170084

Status : Answered

Chosen Option : 3

Q.10 Which of the following is NOT an example of freons?

Ans

☐ 1. Dichloro difluoromethane

☒ 2. Diphenyl

☐ 3. Trichloro fluoromethane

☐ 4. Chloro difluoromethane

Question Type : MCQ

Question ID : 37135117537

Option 1 ID : 37135170145

Option 2 ID : 37135170148

Option 3 ID : 37135170146

Option 4 ID : 37135170147

Status : Marked For Review

Chosen Option : 2



Q.11 34.2g sugar dissolved in  $1.8 \times 10^2$ g water to form sugar syrup, calculate mole fraction of sugar? (Molar mass sugar = 342, water = 18)

Ans

✓ 1. 0.009

✗ 2. 0.001

✗ 3. 0.1

✗ 4. 0.9

Question Type : MCQ

Question ID : 37135117541

Option 1 ID : 37135170163

Option 2 ID : 37135170164

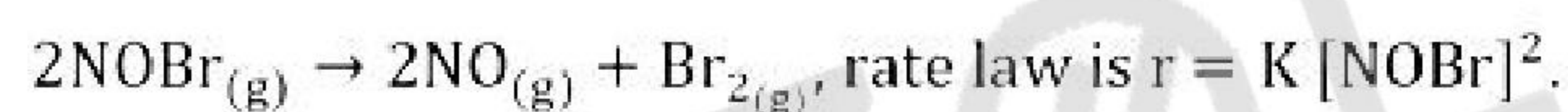
Option 3 ID : 37135170162

Option 4 ID : 37135170161

Status : Answered

Chosen Option : 1

Q.12 For the reaction



If rate constant is  $1.62\text{M}^{-1}\text{s}^{-1}$  and concentration of NOBr is  $2.00 \times 10^{-3}\text{M}$ ,  
What is the rate of reaction?

Ans

✓ 1.  $6.48 \times 10^{-6}\text{Ms}^{-1}$

✗ 2.  $4.05 \times 10^{-5}\text{Ms}^{-1}$

✗ 3.  $2.46 \times 10^{-6}\text{Ms}^{-1}$

✗ 4.  $5.24 \times 10^{-6}\text{Ms}^{-1}$

Question Type : MCQ

Question ID : 37135117530

Option 1 ID : 37135170119

Option 2 ID : 37135170118

Option 3 ID : 37135170117

Option 4 ID : 37135170120

Status : Answered

Chosen Option : 1



Q.13  $E^\circ_{\text{cell}}$  is  $1.049\text{ V}$  and involves transfer of 2 electrons, calculate equilibrium constant of cell?

Ans

✓ 1.  $2.75 \times 10^{35}$

✗ 2.  $2.75 \times 10^{10}$

✗ 3.  $0.524 \times 10^{35}$

✗ 4.  $2.098 \times 10^{10}$

Question Type : **MCQ**

Question ID : 37135117535

Option 1 ID : 37135170140

Option 2 ID : 37135170139

Option 3 ID : 37135170138

Option 4 ID : 37135170137

Status : **Not Attempted and  
Marked For Review**

Chosen Option : --

Q.14 Identify the alcohol that react immediately with Lucas reagent?

Ans

✗ 1. Ethanol

✗ 2. Butan-2-ol

✓ 3. 2-Methyl Propan-2-ol

✗ 4. Propan-2-ol

Question Type : **MCQ**

Question ID : 37135117518

Option 1 ID : 37135170072

Option 2 ID : 37135170070

Option 3 ID : 37135170071

Option 4 ID : 37135170069

Status : **Answered**

Chosen Option : 3



Q.15 2 · 5 kJ of work is done on the system and it releases 1500 J of heat. What is the change in internal energy?

Ans

✓ 1. 1000 J

✗ 2. 4000 J

✗ 3. 2500 J

✗ 4. 1500 J

Question Type : MCQ

Question ID : 37135117545

Option 1 ID : 37135170178

Option 2 ID : 37135170177

Option 3 ID : 37135170180

Option 4 ID : 37135170179

Status : Answered

Chosen Option : 2

Q.16 Identify the correct decreasing order of reactivity of alkyl halide with ammonia?

Ans

✓ 1.  $R - I > R - Br > R - Cl$

✗ 2.  $R - Br > R - Cl > R - I$

✗ 3.  $R - I > R - Cl > R - Br$

✗ 4.  $R - Cl > R - Br > R - I$

Question Type : MCQ

Question ID : 37135117516

Option 1 ID : 37135170063

Option 2 ID : 37135170064

Option 3 ID : 37135170062

Option 4 ID : 37135170061

Status : Marked For Review

Chosen Option : 1



Q.17 Mixture of sodium chloride and ammonium chloride is separated by

Ans

- ✓ 1. sublimation
- ✗ 2. distillation
- ✗ 3. chromatography
- ✗ 4. differential extraction

Question Type : MCQ

Question ID : 37135117538

Option 1 ID : 37135170149

Option 2 ID : 37135170150

Option 3 ID : 37135170151

Option 4 ID : 37135170152

Status : Marked For Review

Chosen Option : 1

Q.18 Which among the following is basic amino acid?

Ans

- ✓ 1. Lysine
- ✗ 2. Glycine
- ✗ 3. Cystine
- ✗ 4. Cysteine

Question Type : MCQ

Question ID : 37135117502

Option 1 ID : 37135170005

Option 2 ID : 37135170006

Option 3 ID : 37135170007

Option 4 ID : 37135170008

Status : Marked For Review

Chosen Option : 1



Q.19

What is the molarity of solution containing 0.8 g of NaOH (Molar mass 40 g mol<sup>-1</sup>) in 150 cm<sup>3</sup> of water?

Ans

☐ 1. 0.02 mol dm<sup>-3</sup>

☐ 2. 0.12 mol dm<sup>-3</sup>

☐ 3. 5.33 mol dm<sup>-3</sup>

☒ 4. 0.1333 mol dm<sup>-3</sup>

Question Type : MCQ

Question ID : 37135117510

Option 1 ID : 37135170037

Option 2 ID : 37135170039

Option 3 ID : 37135170040

Option 4 ID : 37135170038

Status : Answered

Chosen Option : 4

Q.20

Identify 'A' in the following reaction



Ans

☒ 1. Aspirin

☐ 2. Methyl salicylate

☐ 3. BHT

☐ 4. Steric acid

Question Type : MCQ

Question ID : 37135117522

Option 1 ID : 37135170087

Option 2 ID : 37135170086

Option 3 ID : 37135170088

Option 4 ID : 37135170085

Status : Answered

Chosen Option : 1



Q.21

Which inert gas is used in chromatography?

Ans

✓ 1. Ar

✗ 2. Ne

✗ 3. Kr

✗ 4. He

Question Type : MCQ

Question ID : 37135117543

Option 1 ID : 37135170171

Option 2 ID : 37135170170

Option 3 ID : 37135170172

Option 4 ID : 37135170169

Status : Marked For Review

Chosen Option : 1

Q.22

How many chlorine atoms are present in a molecule of D.D.T.?

Ans

✗ 1. 3

✓ 2. 5

✗ 3. 2

✗ 4. 4

Question Type : MCQ

Question ID : 37135117547

Option 1 ID : 37135170186

Option 2 ID : 37135170188

Option 3 ID : 37135170185

Option 4 ID : 37135170187

Status : Answered

Chosen Option : 2



Q.23

Which of the following haloalkane is used as paint remover?

Ans

☐ 1. Carbon tetra chloride

☒ 2. Dichloromethane

☐ 3. Chloroethane

☐ 4. Trichloromethane

Question Type : MCQ

Question ID : 37135117504

Option 1 ID : 37135170016

Option 2 ID : 37135170014

Option 3 ID : 37135170013

Option 4 ID : 37135170015

Status : Marked For Review

Chosen Option : 4

Q.24

Which of the following pairs of inert gases is used in flash bulb?

Ans

☐ 1. Xe and He

☒ 2. Xe and Kr

☐ 3. Xe and Rn

☐ 4. Xe and Ar

Question Type : MCQ

Question ID : 37135117509

Option 1 ID : 37135170035

Option 2 ID : 37135170034

Option 3 ID : 37135170033

Option 4 ID : 37135170036

Status : Marked For Review

Chosen Option : 2



Q.25 Which among the following is used as a monomer for the preparation of neoprene?

Ans

 1. Isoprene

 2. Glycine

 3. Chloroprene

 4. Styrene

Question Type : MCQ

Question ID : 37135117519

Option 1 ID : 37135170074

Option 2 ID : 37135170076

Option 3 ID : 37135170073

Option 4 ID : 37135170075

Status : Answered

Chosen Option : 3

Q.26 Molal elevation constant is the elevation in boiling point produced by

Ans

 1.

1 mole of solute in one litre of solvent

 2. 1g of solute in 100g of solvent

 3.

100g of solute in 1000g of solvent

 4.

1 mole of solute in one Kg of solvent

Question Type : MCQ

Question ID : 37135117517

Option 1 ID : 37135170067

Option 2 ID : 37135170065

Option 3 ID : 37135170066

Option 4 ID : 37135170068

Status : Answered

Chosen Option : 4



Q.27 How many gram of dihydrogen is required to react with dinitrogen to produce 34g of ammonia?

Ans

✓ 1. 6 g

✗ 2. 2 g

✗ 3. 12 g

✗ 4. 3 g

Question Type : MCQ

Question ID : 37135117529

Option 1 ID : 37135170115

Option 2 ID : 37135170113

Option 3 ID : 37135170116

Option 4 ID : 37135170114

Status : Marked For Review

Chosen Option : 1

Q.28 The symbol used for hydrogen in Dalton's atomic theory is

Ans

✗ 1.  $\oplus$

✗ 2.  $\bigcirc$

✓ 3.  $\odot$

✗ 4.  $\ominus$

Question Type : MCQ

Question ID : 37135117503

Option 1 ID : 37135170010

Option 2 ID : 37135170009

Option 3 ID : 37135170012

Option 4 ID : 37135170011

Status : Answered

Chosen Option : 1



Q.29

Which among the following is a mineral of copper?

Ans

 1. Carnotite

 2. Azurite

 3. Pyrolusite

 4. Chromite

Question Type : MCQ

Question ID : 37135117534

Option 1 ID : 37135170135

Option 2 ID : 37135170133

Option 3 ID : 37135170134

Option 4 ID : 37135170136

Status : Answered

Chosen Option : 3

Q.30

An ideal gas expands isothermally and reversibly from  $10 \text{ m}^3$  to  $20 \text{ m}^3$  at  $300\text{K}$  performing  $5.187\text{kJ}$  of work on surrounding. Calculate number of moles of gas undergoing expansion? ( $R = 8.314 \text{ JK}^{-1}\text{mol}^{-1}$ )

Ans

 1. 1.5

 2. 2

 3. 3

 4. 1

Question Type : MCQ

Question ID : 37135117526

Option 1 ID : 37135170102

Option 2 ID : 37135170103

Option 3 ID : 37135170104

Option 4 ID : 37135170101

Status : Marked For Review

Chosen Option : 3



Q.31

The reaction in which methyl group on benzene ring is converted to aldehydic group is called

Ans

- ☒ 1. Etard reaction
- ☐ 2. Fridel – Craft reaction
- ☐ 3. Rosenmund reaction
- ☐ 4. Gatterman – Koch reaction

Question Type : MCQ

Question ID : 37135117544

Option 1 ID : 37135170173

Option 2 ID : 37135170176

Option 3 ID : 37135170174

Option 4 ID : 37135170175

Status : Answered

Chosen Option : 4

Q.32

Which of the following magnetic impurity is present in Cassiterite ore?

Ans

- ☐ 1.  $\text{Fe}_2\text{O}_3$
- ☒ 2.  $\text{FeWO}_4$
- ☐ 3.  $\text{FeO}$
- ☐ 4.  $\text{Fe}_3\text{O}_4$

Question Type : MCQ

Question ID : 37135117524

Option 1 ID : 37135170094

Option 2 ID : 37135170096

Option 3 ID : 37135170093

Option 4 ID : 37135170095

Status : Answered

Chosen Option : 2



Q.33

Which of the following amines forms a clear solution when treated with benzene sulphonyl chloride and excess of potassium hydroxide?

Ans

☐ 1.  $(\text{CH}_3)_3 \text{N}$

☐ 2.  $(\text{CH}_3)_2 \text{NC}_2\text{H}_5$

☐ 3.  $(\text{CH}_3)_2 \text{NH}$

☒ 4.  $\text{CH}_3\text{NH}_2$

Question Type : MCQ

Question ID : 37135117533

Option 1 ID : 37135170130

Option 2 ID : 37135170131

Option 3 ID : 37135170129

Option 4 ID : 37135170132

Status : Answered

Chosen Option : 4

Q.34

On hydrolysis sucrose gives

Ans

☐ 1. 2 moles of glucose

☐ 2. 2 moles of galactose

☒ 3.

equimolar mixture of glucose and fructose

☐ 4. 2 moles of fructose

Question Type : MCQ

Question ID : 37135117549

Option 1 ID : 37135170193

Option 2 ID : 37135170196

Option 3 ID : 37135170194

Option 4 ID : 37135170195

Status : Answered

Chosen Option : 3



Q.35 How many primary, secondary and tertiary carbon atoms respectively are present in isobutane?

Ans

 1. 0, 1 and 3

 2. 3, 1 and 0

 3. 3, 0 and 1

 4. 1, 0 and 3

Question Type : **MCQ**

Question ID : 37135117542

Option 1 ID : 37135170168

Option 2 ID : 37135170167

Option 3 ID : 37135170165

Option 4 ID : 37135170166

Status : **Answered**

Chosen Option : 3

Q.36

What is the bond order of  $\text{Be}_2$  molecule?

Ans

 1. 2

 2. 3

 3. 0

 4. 1

Question Type : **MCQ**

Question ID : 37135117515

Option 1 ID : 37135170059

Option 2 ID : 37135170060

Option 3 ID : 37135170058

Option 4 ID : 37135170057

Status : **Marked For Review**

Chosen Option : 1



Q.37 Which of the following compounds is formed when tungsten adsorbs oxygen gas?

Ans

- ☒ 1. Tungsten dioxide
- ☒ 2. Tungsten oxide
- ☒ 3. Tungsten tetraoxide
- ☒ 4. Tungsten trioxide

Question Type : MCQ

Question ID : 37135117520

Option 1 ID : 37135170078

Option 2 ID : 37135170077

Option 3 ID : 37135170080

Option 4 ID : 37135170079

Status : Marked For Review

Chosen Option : 1

Q.38 Which among the following elements possesses one electron in 4s orbital in observed electronic configuration?

Ans

- ☒ 1. V (Z = 23)
- ☒ 2. Ni (Z = 28)
- ☒ 3. Mn (Z = 25)
- ☒ 4. Cu (Z = 29)

Question Type : MCQ

Question ID : 37135117501

Option 1 ID : 37135170001

Option 2 ID : 37135170003

Option 3 ID : 37135170002

Option 4 ID : 37135170004

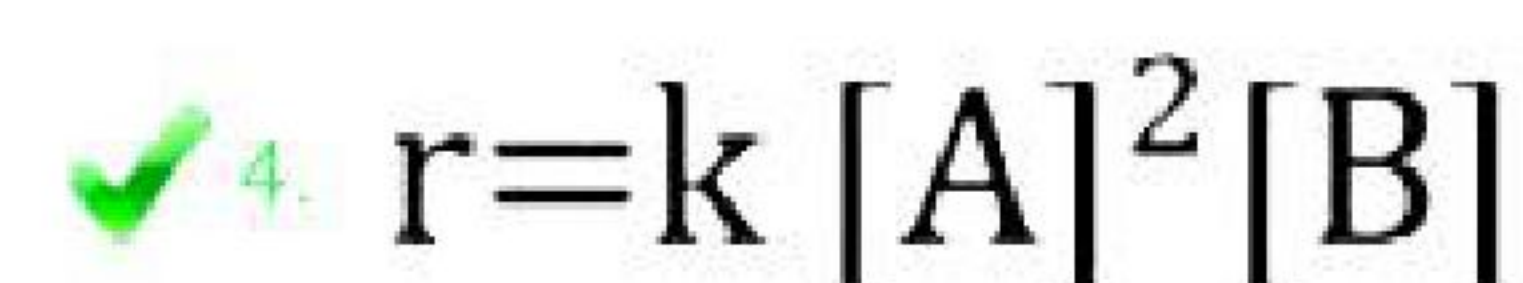
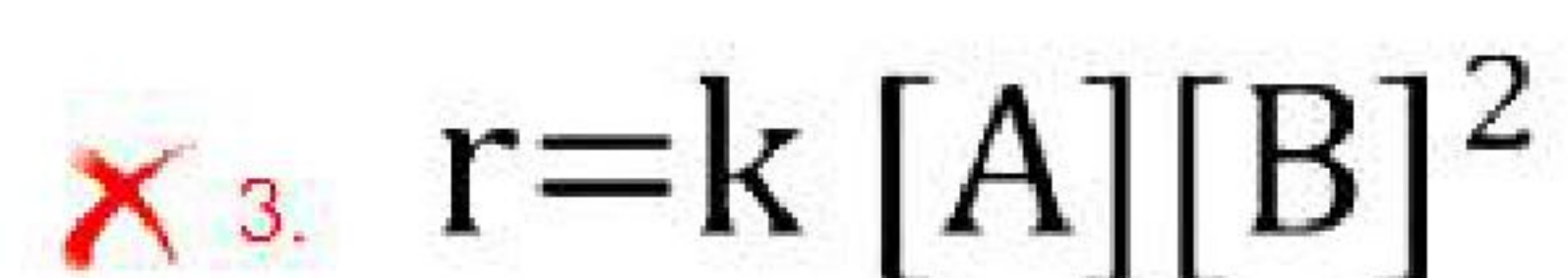
Status : Answered

Chosen Option : 4



Q.39 Consider the reaction  $2A + 2B \rightarrow C + 2D$ . If the concentration of A is doubled at constant B, the rate increases by a factor 4. If the concentration of B is doubled at constant A, rate is doubled. What is the rate law?

Ans



Question Type : MCQ

Question ID : 37135117525

Option 1 ID : 37135170098

Option 2 ID : 37135170097

Option 3 ID : 37135170100

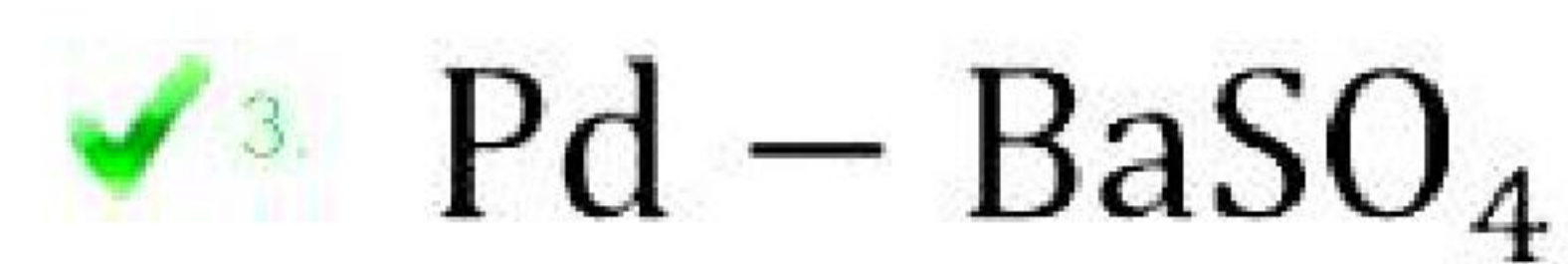
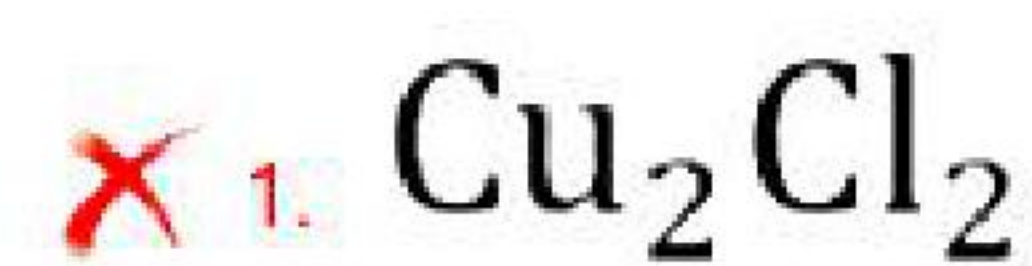
Option 4 ID : 37135170099

Status : Answered

Chosen Option : 4

Q.40 Which of the following catalyst is used in Rosenmund reaction?

Ans



Question Type : MCQ

Question ID : 37135117513

Option 1 ID : 37135170052

Option 2 ID : 37135170049

Option 3 ID : 37135170050

Option 4 ID : 37135170051

Status : Answered

Chosen Option : 2



Q.41 If radius ratio for an ionic solid is  $0.5248$  and radius of cation is  $0.95 \text{ \AA}$ . What is the radius of anion?

Ans

☐ 1.  $1.45 \text{ \AA}$

☒ 2.  $1.81 \text{ \AA}$

☐ 3.  $1.20 \text{ \AA}$

☐ 4.  $1.60 \text{ \AA}$

Question Type : MCQ

Question ID : 37135117550

Option 1 ID : 37135170198

Option 2 ID : 37135170197

Option 3 ID : 37135170200

Option 4 ID : 37135170199

Status : Answered

Chosen Option : 2

Q.42 Which among the following drugs is NOT a tranquilizer?

Ans

☐ 1. Equanil

☒ 2. Novestrol

☐ 3. Valium

☐ 4. Veronal

Question Type : MCQ

Question ID : 37135117531

Option 1 ID : 37135170123

Option 2 ID : 37135170124

Option 3 ID : 37135170122

Option 4 ID : 37135170121

Status : Answered

Chosen Option : 2



Q.43 What is the final product obtained when benzonitrile react with phenyl magnesium bromide in equimolar proportion?

Ans  1.

Diphenyl magnesium bromide

 2. Benzene

 3. Dicyclohexane

 4. Benzophenone

Question Type : MCQ

Question ID : 37135117527

Option 1 ID : 37135170105

Option 2 ID : 37135170106

Option 3 ID : 37135170108

Option 4 ID : 37135170107

Status : Answered

Chosen Option : 4

Q.44 Identify the type of intermolecular force present between benzene and ammonia

Ans

 1. Hydrogen bonding

 2. Dipole – dipole interaction

 3.

Dipole - induced dipole interaction

 4. Ion- dipole interaction

Question Type : MCQ

Question ID : 37135117507

Option 1 ID : 37135170028

Option 2 ID : 37135170027

Option 3 ID : 37135170026

Option 4 ID : 37135170025

Status : Marked For Review

Chosen Option : 1



Q.45 Identify the product formed when bauxite ore is treated with sodium hydroxide?

Ans

☒ 1. Sodium hydrogen carbonate

☒ 2. Aluminium hydroxide

☒ 3. Sodium meta aluminate

☒ 4. Aluminium chloride

Question Type : MCQ

Question ID : 37135117539

Option 1 ID : 37135170154

Option 2 ID : 37135170155

Option 3 ID : 37135170156

Option 4 ID : 37135170153

Status : Marked For Review

Chosen Option : 2

Q.46 Which of the following is NOT a dihydric phenol?

Ans

☒ 1. Quinol

☒ 2. Resorcinol

☒ 3. Catechol

☒ 4. Hydroxyquinol

Question Type : MCQ

Question ID : 37135117523

Option 1 ID : 37135170090

Option 2 ID : 37135170091

Option 3 ID : 37135170092

Option 4 ID : 37135170089

Status : Answered

Chosen Option : 4



Q.47 Which of the following type of amines is obtained by alkylation of phthalimide?

Ans

☒ 1.  $\text{Ar} - \text{NH}_2$

☒ 2.  $\text{R} - \text{NH}_2$

☒ 3.  $(\text{R})_3\text{N}$

☒ 4.  $\text{R} - \text{NH} - \text{R}$

Question Type : MCQ

Question ID : 37135117540

Option 1 ID : 37135170160

Option 2 ID : 37135170157

Option 3 ID : 37135170159

Option 4 ID : 37135170158

Status : Answered

Chosen Option : 2

Q.48 How many donor groups are present in diethylene triamine?

Ans

☒ 1. 4

☒ 2. 2

☒ 3. 6

☒ 4. 3

Question Type : MCQ

Question ID : 37135117528

Option 1 ID : 37135170111

Option 2 ID : 37135170109

Option 3 ID : 37135170112

Option 4 ID : 37135170110

Status : Marked For Review

Chosen Option : 4



Q.49

What is EAN of Cobalt in  $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$  (At. No. of Co = 27)

Ans

☐ 1. 30

☐ 2. 28

☐ 3. 27

☒ 4. 36

Question Type : MCQ

Question ID : 37135117514

Option 1 ID : 37135170056

Option 2 ID : 37135170053

Option 3 ID : 37135170054

Option 4 ID : 37135170055

Status : Answered

Chosen Option : 4

Q.50

When will be the reaction becomes spontaneous at all temperatures?

Ans

☐ 1.

$\Delta H = -ve, \Delta S = -ve, \Delta G = -ve$

☒ 2.

$\Delta H = -ve, \Delta S = +ve, \Delta G = -ve$

☐ 3.

$\Delta H = +ve, \Delta S = +ve, \Delta G = -ve$

☐ 4.

$\Delta H = +ve, \Delta S = -ve, \Delta G = +ve$

Question Type : MCQ

Question ID : 37135117536

Option 1 ID : 37135170142

Option 2 ID : 37135170141

Option 3 ID : 37135170143

Option 4 ID : 37135170144

Status : Answered

Chosen Option : 2



Q.1

If A and B are subsets of universal set X such that  $n(X)=200$ ,  $n(A)=90$ ,  $n(B)=80$ ,

$n(A' \cap B')=40$ , then  $n(A \cap B') =$

Ans

 1. 70

 2. 80

 3. 20

 4. 10

Question Type : MCQ

Question ID : 37135117566

Option 1 ID : 37135170263

Option 2 ID : 37135170264

Option 3 ID : 37135170262

Option 4 ID : 37135170261

Status : Answered

Chosen Option : 2

Q.2

The integrating factor of the differential equation  $\frac{dy}{dx}(x \log x) + y = 4 \log x$  is

Ans

 1.  $\log(\log x)$

 2.  $x$

 3.  $e^x$

 4.  $\log x$

Question Type : MCQ

Question ID : 37135117570

Option 1 ID : 37135170279

Option 2 ID : 37135170280

Option 3 ID : 37135170277

Option 4 ID : 37135170278

Status : Answered

Chosen Option : 4



Q.3

If  $P$  is a point on the segment  $AB$  of length 12cm, then the position of  $P$  for  $AP^2 + BP^2$  to be minimum is such that

Ans  1.

$P$  divides  $AB$  in the ratio 2:3 internally

 2.

$P$  divides  $AB$  in the ratio 4:3 internally

 3.

$P$  is the midpoint of segment  $AB$

 4.

$P$  divides  $BA$  in the ratio 2:1 internally

Question Type : MCQ

Question ID : 37135117585

Option 1 ID : 37135170337

Option 2 ID : 37135170338

Option 3 ID : 37135170340

Option 4 ID : 37135170339

Status : Not Answered

Chosen Option : --

Q.4

If the origin and the points  $(1, 2, 3)$ ,  $(2, 3, 4)$  and  $(x, y, z)$  are coplanar, then

Ans  1.  $x - 2y + z = 0$

 2.  $x + y + z = 6$

 3.  $x - 2y + z + 1 = 0$

 4.  $z - 2x + y = 0$

Question Type : MCQ

Question ID : 37135117569

Option 1 ID : 37135170274

Option 2 ID : 37135170276

Option 3 ID : 37135170273

Option 4 ID : 37135170275

Status : Answered

Chosen Option : 1



Q.5 The probability distribution of a random variable  $X$  is given by

|            |               |               |               |
|------------|---------------|---------------|---------------|
| $X = x$    | 0             | 1             | 2             |
| $P(X = x)$ | $\frac{1}{5}$ | $\frac{2}{5}$ | $\frac{2}{5}$ |

then the variance of  $X$  is

Ans

✓ 1.  $\frac{14}{25}$

✗ 2.  $\frac{9}{25}$

✗ 3.  $\frac{6}{25}$

✗ 4.  $\frac{1}{25}$

Question Type : MCQ

Question ID : 37135117558

Option 1 ID : 37135170231

Option 2 ID : 37135170230

Option 3 ID : 37135170229

Option 4 ID : 37135170232

Status : Answered

Chosen Option : 1

Q.6 The equation of a plane containing the line  $x - 2 = \frac{y-4}{4} = \frac{z-6}{7}$  and parallel to the line  $\vec{r} = (\hat{i} + 3\hat{j} + 5\hat{k}) + \lambda(3\hat{i} + 5\hat{j} + 7\hat{k})$  is

Ans

✗ 1.  $x - 2y + z = 10$

✗ 2.  $3x - 2y + z = 4$

✗ 3.  $x - 2y + z = 9$

✓ 4.  $x - 2y + z = 0$

Question Type : MCQ

Question ID : 37135117589

Option 1 ID : 37135170355

Option 2 ID : 37135170353

Option 3 ID : 37135170356

Option 4 ID : 37135170354

Status : Answered

Chosen Op



Q.7

It is known that a box of 8 batteries contains 3 defective pieces and a person randomly selects two batteries from the box. If  $X$  is the number of defective batteries selected, then  $P(X \leq 1) =$

Ans

✓ 1.  $\frac{25}{28}$

✗ 2.  $\frac{14}{28}$

✗ 3.  $\frac{10}{28}$

✗ 4.  $\frac{13}{28}$

Question Type : MCQ

Question ID : 37135117560

Option 1 ID : 37135170240

Option 2 ID : 37135170239

Option 3 ID : 37135170237

Option 4 ID : 37135170238

Status : Answered

Chosen Option : 1



Q.8

If  $y = \log \left[ a^{3x} \left( \frac{5-x}{x+4} \right)^{\frac{3}{4}} \right]$ , then  $\frac{dy}{dx} =$

Ans

☐ 1.  $3 + \frac{3}{4(5-x)} - \frac{3}{4(x+4)}$

☐ 2.  $\frac{3}{a} + \frac{3}{4(5-x)} - \frac{3}{4(x+4)}$

☐ 3.  $\frac{3}{\log a} - \frac{3}{4(5-x)} - \frac{3}{4(x+4)}$

☒ 4.  $3\log a - \frac{3}{4(5-x)} - \frac{3}{4(x+4)}$

Question Type : MCQ

Question ID : 37135117596

Option 1 ID : 37135170383

Option 2 ID : 37135170381

Option 3 ID : 37135170384

Option 4 ID : 37135170382

Status : Answered

Chosen Option : 4



Q.9

The position vector of the point of intersection of the line

$$\vec{r} = (2\hat{i} + \hat{j} - 4\hat{k}) + \lambda(\hat{i} - 2\hat{j} + 2\hat{k}) \text{ and } XOY\text{-Plane is}$$

Ans

✗ 1.  $4\hat{i} + 3\hat{k}$

✗ 2.  $4\hat{i} + 3\hat{j}$

✗ 3.  $4\hat{i} - 3\hat{k}$

✓ 4.  $4\hat{i} - 3\hat{j}$

Question Type : MCQ

Question ID : 37135117582

Option 1 ID : 37135170326

Option 2 ID : 37135170325

Option 3 ID : 37135170328

Option 4 ID : 37135170327

Status : Marked For Review

Chosen Option : 4



Q.10

If  $A = \begin{bmatrix} 2 & -3 \\ 5 & -7 \end{bmatrix}$ , then  $2A - 3A^{-1} =$

Ans

 1.  $\begin{bmatrix} 25 & 15 \\ 25 & 20 \end{bmatrix}$

 2.  $\begin{bmatrix} 25 & 25 \\ -15 & -20 \end{bmatrix}$

 3.  $\begin{bmatrix} 25 & -15 \\ 25 & -20 \end{bmatrix}$

 4.  $\begin{bmatrix} 25 & -25 \\ -15 & -20 \end{bmatrix}$

Question Type : MCQ

Question ID : 37135117552

Option 1 ID : 37135170206

Option 2 ID : 37135170207

Option 3 ID : 37135170205

Option 4 ID : 37135170208

Status : Answered

Chosen Option : 3

Q.11

The logical expression  $[p \wedge (q \vee r)] \vee [(\sim p \wedge q) \vee (\sim p \wedge r)]$  is equivalent to

Ans

 1.  $p$

 2.  $q$

 3.  $p \wedge r$

 4.  $q \vee r$

Question Type : MCQ

Question ID : 37135117583

Option 1 ID : 37135170329

Option 2 ID : 37135170330

Option 3 ID : 37135170331

Option 4 ID : 37135170332

Sta

Chosen Op



Q.12

$$\int_0^4 |x - 2| \, dx =$$

Ans

 1. 0

 2. 4

 3. 8

 4. 2

Question Type : MCQ

Question ID : 37135117563

Option 1 ID : 37135170251

Option 2 ID : 37135170250

Option 3 ID : 37135170249

Option 4 ID : 37135170252

Status : Answered

Chosen Option : 2



**Q.13** If  $p_1$  and  $p_2$  are the lengths of perpendiculars from the origin to the lines  
 $x \sin \theta + y \cos \theta = 5 \cos 2\theta$  and  $x \operatorname{cosec} \theta + y \sec \theta - 5 = 0$  respectively, then  
 $p_1^2 + 4p_2^2 =$

**Ans**

 1.  $\frac{1}{25}$

 2.  $\frac{1}{5}$

 3. 25

 4. 5

Question Type : MCQ

Question ID : 37135117586

Option 1 ID : 37135170343

Option 2 ID : 37135170344

Option 3 ID : 37135170341

Option 4 ID : 37135170342

Status : Answered

Chosen Option : 3



Q.14

If A and B are two independent events and  $P(A) = \frac{3}{5}$ ,  $P(B) = \frac{2}{3}$ , then  $P(A' \cap B') =$

Ans

 1.  $\frac{7}{15}$

 2.  $\frac{2}{15}$

 3.  $\frac{4}{15}$

 4.  $\frac{1}{15}$

Question Type : MCQ

Question ID : 37135117581

Option 1 ID : 37135170324

Option 2 ID : 37135170322

Option 3 ID : 37135170323

Option 4 ID : 37135170321

Status : Answered

Chosen Option : 2

Q.15

The population of a village increases at a rate proportional to the population at that time. In a period of 10 years the population grew from 20,000 to 40,000, then the population after another 20 years is

Ans

 1. 1,20,000

 2. 1,60,000

 3. 1,00,000

 4. 80,000

Question Type : MCQ

Question ID : 37135117572

Option 1 ID : 37135170287

Option 2 ID : 37135170288

Option 3 ID : 37135170286

Option 4 ID : 37135170285

Status : Answered

Chosen Op



Q.16 Bismuth has half life of 5 days. If sample originally has a mass of 800 mg, then the mass remaining after 30 days will be

Ans

 1. 10 mg.

 2. 10.5 mg.

 3. 12 mg.

 4. 12.5 mg.

Question Type : MCQ

Question ID : 37135117553

Option 1 ID : 37135170212

Option 2 ID : 37135170209

Option 3 ID : 37135170211

Option 4 ID : 37135170210

Status : Answered

Chosen Option : 4

Q.17

$$\frac{\sin A + \sin 7A + \sin 13A}{\cos A + \cos 7A + \cos 13A} =$$

Ans

 1.  $\cot 7A$

 2.  $\tan 6A$

 3.  $\tan 7A$

 4.  $\cot 6A$

Question Type : MCQ

Question ID : 37135117559

Option 1 ID : 37135170234

Option 2 ID : 37135170235

Option 3 ID : 37135170233

Option 4 ID : 37135170236

Status : Answered

Chosen Option : 3



Q.18

The joint equation of pair of lines through the origin and making equilateral triangle

with the line  $y = 4$  is

Ans

✗ 1.  $3x^2 + y^2 = 0$

✓ 2.  $3x^2 - y^2 = 0$

✗ 3.  $x^2 - y^2 = 0$

✗ 4.  $x^2 - 3y^2 = 0$

Question Type : MCQ

Question ID : 37135117587

Option 1 ID : 37135170348

Option 2 ID : 37135170346

Option 3 ID : 37135170345

Option 4 ID : 37135170347

Status : Answered

Chosen Option : 2

Q.19

If  $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \frac{\pi}{2}$ ,  $x, y, z > 0$ ,  $xy < 1$ , then the value of

$xy + yz + zx =$

Ans

✗ 1.  $xyz$

✗ 2.  $0$

✓ 3.  $1$

✗ 4.  $-xyz$

Question Type : MCQ

Question ID : 37135117554

Option 1 ID : 37135170215

Option 2 ID : 37135170214

Option 3 ID : 37135170213

Option 4 ID : 37135170216

Status : Answered

Chosen Option : 3



Q.20

The co-efficient of  $x^6$  in the series of  $e^{2x}$  is

Ans

 1.  $\frac{2}{45}$

 2.  $\frac{7}{45}$

 3.  $\frac{4}{45}$

 4.  $\frac{1}{45}$

Question Type : **MCQ**

Question ID : 37135117575

Option 1 ID : 37135170298

Option 2 ID : 37135170300

Option 3 ID : 37135170299

Option 4 ID : 37135170297

Status : **Answered**

Chosen Option : 3



Q.21

If  $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$  and  $X$  is a  $2 \times 2$  matrix such that  $AX = I$ , then  $X =$

Ans

 1.  $\begin{bmatrix} -2 & 1 \\ \frac{3}{2} & \frac{1}{2} \end{bmatrix}$

 2.  $\begin{bmatrix} 2 & 1 \\ \frac{3}{2} & -\frac{1}{2} \end{bmatrix}$

 3.  $\begin{bmatrix} -2 & 1 \\ -\frac{3}{2} & -\frac{1}{2} \end{bmatrix}$

 4.  $\begin{bmatrix} -2 & 1 \\ \frac{3}{2} & -\frac{1}{2} \end{bmatrix}$

Question Type : MCQ

Question ID : 37135117561

Option 1 ID : 37135170244

Option 2 ID : 37135170242

Option 3 ID : 37135170243

Option 4 ID : 37135170241

Status : Answered

Chosen Option : 4



Q.22

A line makes an angle of  $45^\circ$  with x-axis and congruent angles with y and z-axes ,  
then the direction cosines of the line are

Ans  1.

$$\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \text{ and } -\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}$$

 2.

$$\frac{1}{2}, \frac{1}{2}, \frac{1}{2} \text{ and } -\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}$$

 3.

$$\frac{1}{\sqrt{2}}, \frac{1}{2}, \frac{1}{2} \text{ and } -\frac{1}{\sqrt{2}}, -\frac{1}{2}, -\frac{1}{2}$$

 4.

$$\frac{1}{\sqrt{2}}, \frac{1}{2}, \frac{1}{2} \text{ and } \frac{1}{\sqrt{2}}, -\frac{1}{2}, -\frac{1}{2}$$

Question Type : MCQ

Question ID : 37135117578

Option 1 ID : 37135170310

Option 2 ID : 37135170309

Option 3 ID : 37135170311

Option 4 ID : 37135170312

Status : Answered

Chosen Option : 4



Q.23

The area bonded by the curve  $y = \sin^2 x$ , x-axis and the lines  $x = 0$  and  $x = \frac{\pi}{2}$  is

Ans

 1. 1 sq. units

 2.  $\frac{\pi}{8}$  sq. units

 3.  $\frac{\pi}{4}$  sq. units

 4.  $\frac{\pi}{2}$  sq. units

Question Type : MCQ

Question ID : 37135117568

Option 1 ID : 37135170272

Option 2 ID : 37135170271

Option 3 ID : 37135170270

Option 4 ID : 37135170269

Status : Answered

Chosen Option : 3

Q.24

If  $e_1$  is the eccentricity of the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ ,  $a > b$  and  $e_2$  is the eccentricity

of the hyperbola  $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ , then  $e_1^2 + e_2^2 =$

Ans

 1. 2

 2. 4

 3. 1

 4. 3

Question Type : MCQ

Question ID : 37135117555

Option 1 ID : 37135170218

Option 2 ID : 37135170220

Option 3 ID : 37135170217

Option 4 ID : 37135170219

Status : Answered

Chosen Option : 1



Q.25

The approximate value of  $(66)^{\frac{1}{3}}$  is

Ans

✓ 1. 4.0416

✗ 2. 4.0447

✗ 3. 4.0433

✗ 4. 4.0481

Question Type : MCQ

Question ID : 37135117580

Option 1 ID : 37135170320

Option 2 ID : 37135170319

Option 3 ID : 37135170318

Option 4 ID : 37135170317

Status : Answered

Chosen Option : 1

Q.26

If  $y = x^{xe^x}$ ,  $\frac{dy}{dx} = y \cdot g(x)$ , then  $g(x) =$

Ans

✓ 1.  $[e^x + e^x(x+1)\log x]$

✗ 2.  $[e^x - e^x \cdot x \cdot (1 + \log x)]$

✗ 3.  $[e^x + e^x \cdot x \cdot (1 + \log x)]$

✗ 4.  $[e^x(x+1)\log x]$

Question Type : MCQ

Question ID : 37135117594

Option 1 ID : 37135170373

Option 2 ID : 37135170374

Option 3 ID : 37135170375

Option 4 ID : 37135170376

Status : Answered

Chosen Option : 1



Q.27

$$\int \frac{(\sin^{-1} x)^{\frac{3}{2}}}{\sqrt{1-x^2}} dx =$$

Ans

✓ 1.  $\frac{2}{5} (\sin^{-1} x)^{\frac{5}{2}} + c$

✗ 2.  $\frac{2}{5} (\cos^{-1} x)^{\frac{5}{2}} + c$

✗ 3.  $\frac{5}{2} (\cos^{-1} x)^{\frac{5}{2}} + c$

✗ 4.  $\frac{5}{2} (\sin^{-1} x)^{\frac{5}{2}} + c$

Question Type : MCQ

Question ID : 37135117579

Option 1 ID : 37135170314

Option 2 ID : 37135170315

Option 3 ID : 37135170316

Option 4 ID : 37135170313

Status : Answered

Chosen Option : 4



**Q.28** If  $\vec{a} = \hat{i} + \hat{j} + \hat{k}$ ,  $\vec{b} = 2\hat{i} - 2\hat{j} + 2\hat{k}$ ,  $\vec{c} = 2\hat{i} + 3\hat{j} + 2\hat{k}$  are any three co-planar vectors such that  $l\vec{a} + m\vec{b} + n\vec{c} = \vec{0}$ , then values of  $l, m, n$  are respectively

**Ans**

 1. 10, 1, 4

 2. 10, -4, 1

 3. 10, -1, -4

 4. 10, 1, -4

Question Type : **MCQ**

Question ID : 37135117598

Option 1 ID : 37135170389

Option 2 ID : 37135170390

Option 3 ID : 37135170392

Option 4 ID : 37135170391

Status : **Answered**

Chosen Option : 2

**Q.29** If  $\vec{a}$ ,  $\vec{b}$ ,  $\vec{c}$  are the position vectors of the points A (1, 3, 0), B (2, 5, 0), C(4, 2, 0) respectively and  $\vec{c} = t_1\vec{a} + t_2\vec{b}$ , then value of  $t_1t_2 =$

**Ans**

 1. -16

 2. 16

 3. 160

 4. -160

Question Type : **MCQ**

Question ID : 37135117567

Option 1 ID : 37135170268

Option 2 ID : 37135170267

Option 3 ID : 37135170265

Option 4 ID : 37135170266

Status : **Answered**

Chosen Option : 4



Q.30 If the line  $\frac{x-1}{-3} = \frac{y-2}{2k} = \frac{z-3}{2}$  and  $\frac{x-1}{3k} = \frac{y-5}{1} = \frac{z-6}{-5}$  are perpendicular to each other, then  $k$  is

Ans

✗ 1.  $\frac{7}{10}$

✗ 2.  $\frac{10}{7}$

✗ 3.  $\frac{-7}{10}$

✓ 4.  $\frac{-10}{7}$

Question Type : MCQ

Question ID : 37135117564

Option 1 ID : 37135170256

Option 2 ID : 37135170255

Option 3 ID : 37135170253

Option 4 ID : 37135170254

Status : Answered

Chosen Option : 4

Q.31 The solution of the differential equation  $x \cdot \sin\left(\frac{y}{x}\right) dy = \left|y \cdot \sin\left(\frac{y}{x}\right) - x\right| dx$  is

Ans

✗ 1.  $\cos\left(\frac{x}{y}\right) = \log|x| + c$

✗ 2.  $\cos\left(\frac{y}{x}\right) = \log|y| + c$

✓ 3.  $\cos\left(\frac{y}{x}\right) = \log|x| + c$

✗ 4.  $\cos\left(\frac{x}{y}\right) = \log|y| + c$

Question Type : MCQ

Question ID : 37135117588

Option 1 ID : 37135170352

Option 2 ID : 37135170351

Option 3 ID : 37135170350

Option 4 ID : 37135170349

Status : Marked For Review

Chosen Op



Q.32 If  $f(x) = ax^2 + bx + 2$  and  $f(1) = 4$ ,  $f(3) = 38$ , then  $a - b =$

Ans

☐ 1. 15

☐ 2. -2

☐ 3. 2

☒ 4. 8

Question Type : MCQ

Question ID : 37135117571

Option 1 ID : 37135170284

Option 2 ID : 37135170281

Option 3 ID : 37135170282

Option 4 ID : 37135170283

Status : Answered

Chosen Option : 4

Q.33

$$\text{If } f(x) = \frac{(e^{3x}-1) \sin x^\circ}{x^2} \text{ if } x \neq 0$$
$$= \frac{\pi}{60} \text{ if } x = 0, \text{ then}$$

Ans

☒ 1.

$f$  is continuous at  $x = 0$

☐ 2.  $\lim_{x \rightarrow 0} f(x) = 3$

☐ 3.

$f$  has irremovable discontinuity at  $x = 0$

☐ 4.

$f$  has removable discontinuity at  $x = 0$

Question Type : MCQ

Question ID : 37135117599

Option 1 ID : 37135170393

Option 2 ID : 37135170396

Option 3 ID : 37135170395

Option 4 ID : 37135170394

Status : Answered

Chosen Op



Q.34

The angle between the lines  $y^2 \sin^2 \theta - xy \sin^2 \theta + x^2 (\cos^2 \theta - 1) = 0$  is

Ans

 1.  $\frac{\pi}{4}$

 2.  $\frac{\pi}{3}$

 3.  $\frac{\pi}{6}$

 4.  $\frac{\pi}{2}$

Question Type : MCQ

Question ID : 37135117551

Option 1 ID : 37135170201

Option 2 ID : 37135170204

Option 3 ID : 37135170203

Option 4 ID : 37135170202

Status : Marked For Review

Chosen Option : 2

Q.35

$$\int_{-8}^8 \frac{x^5 + x^3}{4 - x^2} dx =$$

Ans

 1. 16

 2. 0

 3. 8

 4. -8

Question Type : MCQ

Question ID : 37135117556

Option 1 ID : 37135170224

Option 2 ID : 37135170223

Option 3 ID : 37135170221

Option 4 ID : 37135170222

Sta

Chosen Op



Q.36

$$\int \frac{\sin x \cdot \cos x}{\sin^4 x + \cos^4 x} dx =$$

Ans

✗ 1.  $\tan^{-1}(\sin^2 x) + c$

✗ 2.  $2 \tan^{-1}(\tan^2 x) + c$

✓ 3.  $\frac{1}{2} \tan^{-1}(\tan^2 x) + c$

✗ 4.  $\tan^{-1}(\cos^2 x) + c$

Question Type : MCQ

Question ID : 37135117574

Option 1 ID : 37135170293

Option 2 ID : 37135170295

Option 3 ID : 37135170296

Option 4 ID : 37135170294

Status : Answered

Chosen Option : 3



Q.37

If  $\int_0^a \frac{dx}{1+4x^2} = \frac{\pi}{8}$ , then  $a =$

Ans

 1.  $\frac{1}{2}$

 2.  $2$

 3.  $\frac{1}{4}$

 4.  $1$

Question Type : MCQ

Question ID : 37135117557

Option 1 ID : 37135170226

Option 2 ID : 37135170228

Option 3 ID : 37135170225

Option 4 ID : 37135170227

Status : Answered

Chosen Option : 1



Q.38

The cartesian equation of the curve  $x = 3 + 5\cos\theta$ ,  $y = 2 + 5\sin\theta$  is

$$(0 \leq \theta \leq 2\pi)$$

Ans  1.

$$x^2 + y^2 - 6x + 4y - 12 = 0$$

 2.

$$x^2 + y^2 + 6x + 4y + 12 = 0$$

 3.  $x^2 + y^2 + 6x - 4y + 12 = 0$

 4.

$$x^2 + y^2 - 6x - 4y - 12 = 0$$

Question Type : MCQ

Question ID : 37135117597

Option 1 ID : 37135170385

Option 2 ID : 37135170386

Option 3 ID : 37135170388

Option 4 ID : 37135170387

Status : Answered

Chosen Option : 4



Q.39

If  $X \sim B\left(8, \frac{1}{2}\right)$ , then  $P(|x - 4| \leq 2) =$

Ans

✓ 1.  $\frac{119}{128}$

✗ 2.  $\frac{29}{128}$

✗ 3.  $\frac{238}{728}$

✗ 4.  $\frac{119}{228}$

Question Type : MCQ

Question ID : 37135117584

Option 1 ID : 37135170334

Option 2 ID : 37135170335

Option 3 ID : 37135170336

Option 4 ID : 37135170333

Status : Answered

Chosen Option : 1



Q.40

The value of  $\sin^2\left(\frac{\pi}{8}\right) =$

Ans

 1.  $\frac{\sqrt{2}+1}{2\sqrt{2}}$

 2.  $\frac{\sqrt{5}+1}{2\sqrt{2}}$

 3.  $\frac{\sqrt{5}-1}{2\sqrt{2}}$

 4.  $\frac{\sqrt{2}-1}{2\sqrt{2}}$

Question Type : MCQ

Question ID : 37135117562

Option 1 ID : 37135170246

Option 2 ID : 37135170248

Option 3 ID : 37135170247

Option 4 ID : 37135170245

Status : Answered

Chosen Option : 1

Q.41

If  $\sin x + \operatorname{cosec} x = 3$ , then value of  $\sin^4 x + \operatorname{cosec}^4 x$  is

Ans

 1. 74

 2. 47

 3. 07

 4. 49

Question Type : MCQ

Question ID : 37135117592

Option 1 ID : 37135170365

Option 2 ID : 37135170366

Option 3 ID : 37135170367

Option 4 ID : 37135170368

Status : Answered

Chosen Op



Q.42

The function  $f(x) = 3x^4 + 16x^3 - 30x^2 + 10$  is increasing for

Ans

- ☒ 1. every real value of  $x$
- ☒ 2.  $x = 0, x = 1$  only
- ☒ 3.  $x \in (-5, 0) \cup (1, \infty)$
- ☒ 4.  $x \in [0, 1]$

Question Type : MCQ

Question ID : 37135117595

Option 1 ID : 37135170377

Option 2 ID : 37135170380

Option 3 ID : 37135170379

Option 4 ID : 37135170378

Status : Marked For Review

Chosen Option : 3

Q.43

The value of  $\tan \left[ \cos^{-1} \left( \frac{4}{5} \right) + \tan^{-1} \left( \frac{2}{3} \right) \right]$  is

Ans

- ☒ 1.  $\frac{17}{6}$
- ☒ 2.  $\frac{16}{7}$
- ☒ 3.  $\frac{6}{17}$
- ☒ 4.  $\frac{7}{16}$

Question Type : MCQ

Question ID : 37135117577

Option 1 ID : 37135170306

Option 2 ID : 37135170307

Option 3 ID : 37135170305

Option 4 ID : 37135170308

Status : Answered

Chosen Option : 1



Q.44

If  $y = 2^{ax}$  and  $\left(\frac{dy}{dx}\right)_{x=1} = \log 256$ , then  $a =$

Ans

☐ 1. 4

☒ 2. 2

☐ 3. 8

☐ 4. 3

Question Type : MCQ

Question ID : 37135117590

Option 1 ID : 37135170357

Option 2 ID : 37135170359

Option 3 ID : 37135170358

Option 4 ID : 37135170360

Status : Answered

Chosen Option : 4

Q.45

$$\int e^x \cdot \sec x (1 + \tan x) dx =$$

Ans

☐ 1.  $e^x \operatorname{cosec} x + c$

☒ 2.  $e^x \sec x + c$

☐ 3.  $e^x \cot x + c$

☐ 4.  $e^x \tan x + c$

Question Type : MCQ

Question ID : 37135117576

Option 1 ID : 37135170303

Option 2 ID : 37135170302

Option 3 ID : 37135170304

Option 4 ID : 37135170301

Status : Answered

Chosen Option : 2



Q.46

The unit vector perpendicular to the plane  $4x - 3y + 12z = 15$  is

Ans

 1.  $\frac{4\hat{i}+3\hat{j}+12\hat{k}}{13}$

 2.  $\frac{4\hat{i}-3\hat{j}+12\hat{k}}{13}$

 3.  $\frac{-4\hat{i}+3\hat{j}+12\hat{k}}{13}$

 4.  $\frac{-4\hat{i}-3\hat{j}+12\hat{k}}{13}$

Question Type : MCQ

Question ID : 37135117573

Option 1 ID : 37135170292

Option 2 ID : 37135170289

Option 3 ID : 37135170291

Option 4 ID : 37135170290

Status : Answered

Chosen Option : 2



**Q.47** If L. P. P. has optimum solutions at two consecutive corner points of feasible region,  
then L. P. P. has

**Ans**

✓ 1. infinite solutions

✗ 2. no solution

✗ 3. two solutions

✗ 4. unique solution

Question Type : **MCQ**

Question ID : 37135117593

Option 1 ID : 37135170371

Option 2 ID : 37135170372

Option 3 ID : 37135170370

Option 4 ID : 37135170369

Status : **Answered**

Chosen Option : 1

**Q.48** The order and the degree of the differential equation  $\left[1 + \left(\frac{dy}{dx}\right)^3\right]^{\frac{7}{3}} = 7\left(\frac{d^2y}{dx^2}\right)$  are  
respectively

**Ans**

✓ 1. 2, 3

✗ 2. 3, 3

✗ 3. 2, 2

✗ 4. 3, 2

Question Type : **MCQ**

Question ID : 37135117565

Option 1 ID : 37135170260

Option 2 ID : 37135170259

Option 3 ID : 37135170258

Option 4 ID : 37135170257

Status : **Answered**

Chosen Option : 1



Q.49 If  $A = \{2, 3, 4, 5, 6\}$ , then which of the following statement has truth value 'false'

Ans  1.

$\exists x \in A$ , such that  $(x - 2) \in N$ .

 2.

$\forall x \in A$ ,  $x + 6$  is divisible by 2.

 3.

$\exists x \in A$ , such that  $x + 2$  is a prime number.

 4.

$\exists x \in A$ , such that  $x^2 + 1$  is an even number.

Question Type : MCQ

Question ID : 37135117591

Option 1 ID : 37135170362

Option 2 ID : 37135170364

Option 3 ID : 37135170361

Option 4 ID : 37135170363

Status : Answered

Chosen Option : 2



Q.50

The value of  $\cos^{-1}\left(\cos\frac{8\pi}{3}\right)$  is

Ans

 1.  $\frac{8\pi}{3}$

 2.  $\frac{\pi}{3}$

 3.  $\frac{2\pi}{3}$

 4.  $\frac{3\pi}{2}$

Question Type : MCQ

Question ID : 37135117600

Option 1 ID : 37135170397

Option 2 ID : 37135170398

Option 3 ID : 37135170399

Option 4 ID : 37135170400

Status : Answered

Chosen Option : 1