

Q.1

A bus is moving with a velocity of 5m/s towards a wall. The driver blows the horn of frequency 165 Hz . If the speed of sound in air is 335m/s , then after reflection of sound wave, the number of beats per second heard by the passengers in the bus will be

Ans

1. 4

2. 5

3. 6

4. 2

Question Type : MCQ

Question ID : 37135115676

Option 1 ID : 37135162702

Option 2 ID : 37135162703

Option 3 ID : 37135162704

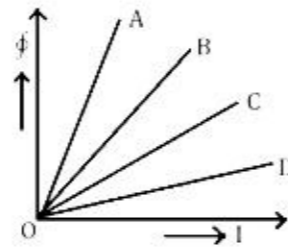
Option 4 ID : 37135162701

Status : Answered

Chosen Option : 3

Q.2

A graph of magnetic flux (ϕ) versus current (I) is shown for four inductors A, B, C and D. Larger value of self-inductance is for inductor



Ans

1. D

2. B

3. C

4. A

Question Type : MCQ

Question ID : 37135115662

Option 1 ID : 37135162648

Option 2 ID : 37135162646

Option 3 ID : 37135162647

Option 4 ID : 37135162645

Status : Answered

Chosen Option : 4

Q.3 Kirchhoff's current law and voltage law respectively are based on the law of conservation of

Ans

- ✓ 1. charge, energy.
- ✗ 2. charge, momentum.
- ✗ 3. energy, charge.
- ✗ 4. momentum, charge.

Question Type : MCQ
Question ID : 37135115677
Option 1 ID : 37135162707
Option 2 ID : 37135162708
Option 3 ID : 37135162705
Option 4 ID : 37135162706
Status : Answered
Chosen Option : 1

Q.4 Focal length of a convex lens will be maximum for

Ans

- ✗ 1. yellow light.
- ✗ 2. violet light.
- ✗ 3. blue light.
- ✓ 4. red light.

Question Type : MCQ
Question ID : 37135115670
Option 1 ID : 37135162679
Option 2 ID : 37135162680
Option 3 ID : 37135162678
Option 4 ID : 37135162677
Status : Answered
Chosen Option : 2

Q.5 An electromagnetic wave of wavelength ' λ ' is incident on a photosensitive surface of negligible work function. If the photoelectrons emitted from this surface have the de-Broglie wavelength ' λ_1 ' then

Ans

1. $\lambda \propto \frac{1}{\lambda_1}$

2. $\lambda \propto \lambda_1$

3. $\lambda \propto \lambda_1^2$

4. $\lambda \propto \frac{1}{\lambda_1^2}$

Question Type : MCQ

Question ID : 37135115686

Option 1 ID : 37135162743

Option 2 ID : 37135162741

Option 3 ID : 37135162742

Option 4 ID : 37135162744

Status : Answered

Chosen Option : 1

Q.6 A pipe open at both ends has length 1m. The air column in the pipe can not resonate for a frequency (Neglect end correction, speed of sound in air = 340 m/s)

Ans

1. 510 Hz

2. 85 Hz

3. 170 Hz

4. 340 Hz

Question Type : MCQ

Question ID : 37135115691

Option 1 ID : 37135162764

Option 2 ID : 37135162761

Option 3 ID : 37135162762

Option 4 ID : 37135162763

Status : Answered

Chosen Option : 3



Q.7

The period of seconds pendulum on a planet, whose mass and radius are three times that of earth, is

Ans

✗^{1.} $3\sqrt{2}$ second

✗^{2.} $\sqrt{3}$ second

✓^{3.} $2\sqrt{3}$ second

✗^{4.} $2\sqrt{2}$ second

Question Type : MCQ

Question ID : 37135115652

Option 1 ID : 37135162607

Option 2 ID : 37135162608

Option 3 ID : 37135162606

Option 4 ID : 37135162605

Status : Answered

Chosen Option : 3

Q.8

If three vectors have equal magnitude i.e. $A = B = C$, then the angle between \vec{A} and \vec{C} is ' α '. If $\vec{A} + \vec{B} + \vec{C} = 0$, then the angle between \vec{A} and \vec{C} is ' β ', then $\frac{\alpha}{\beta}$ is

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135115690

Option 1 ID : 37135162757

Option 2 ID : 37135162759

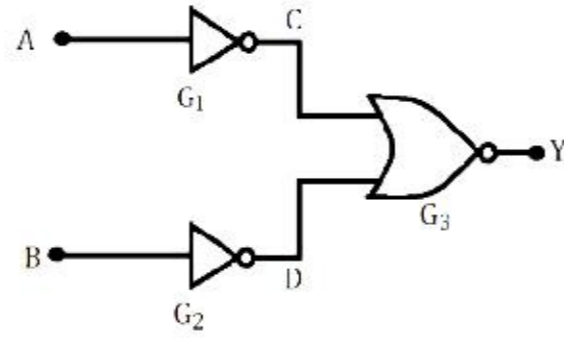
Option 3 ID : 37135162760

Option 4 ID : 37135162758

Status : Answered

Chosen Option : 3

Q.9 The resultant gate and its Boolean expression for the given circuit is



Ans

1. OR , $A + B$

2. NAND , $\overline{A \cdot B}$

3. NOR , $\overline{A + B}$

4. AND , $A \cdot B$

Question Type : MCQ

Question ID : 37135115692

Option 1 ID : 37135162767

Option 2 ID : 37135162768

Option 3 ID : 37135162766

Option 4 ID : 37135162765

Status : Answered

Chosen Option : 3

Q.10 Three particles each of mass ' m_1 ' are placed at the corners of an equilateral triangle of side ' $\frac{L}{3}$ '. A particle of mass ' m_2 ' is placed at the mid point of any one side of triangle. Due to the system of particles the force acting on ' m_2 ' is
(G = Universal constant of gravitation)

Ans

✓ 1.
$$\frac{12 G m_1 m_2}{L^2}$$

✗ 2.
$$\frac{2 G m_1 m_2}{L^2}$$

✗ 3.
$$\frac{4 G m_1 m_2}{L^2}$$

✗ 4.
$$\frac{8 G m_1 m_2}{L^2}$$

Question Type : MCQ

Question ID : 37135115674

Option 1 ID : 37135162693

Option 2 ID : 37135162696

Option 3 ID : 37135162695

Option 4 ID : 37135162694

Status : Answered

Chosen Option : 1

Q.11 When a mercury drop of radius 'R', breaks into 'n' droplets of equal size, the radius 'r' of each droplet is

Ans

1. $r = \frac{R}{\sqrt{n}}$

2. $r = \frac{R}{n}$

3. $r = \frac{R}{n^{\frac{1}{3}}}$

4. $r = R n^{\frac{1}{3}}$

Question Type : MCQ

Question ID : 37135115684

Option 1 ID : 37135162736

Option 2 ID : 37135162733

Option 3 ID : 37135162734

Option 4 ID : 37135162735

Status : Answered

Chosen Option : 3

Q.12

Sensitivity of a given potentiometer can be decreased by

Ans

1.

increasing the current through the wire.

2.

decreasing the current through the wire.

3.

decreasing the potential gradient along the wire.

4.

increasing the potential gradient along the wire.

Question Type : **MCQ**

Question ID : **37135115653**

Option 1 ID : **37135162611**

Option 2 ID : **37135162612**

Option 3 ID : **37135162610**

Option 4 ID : **37135162609**

Status : **Answered**

Chosen Option : **2**

Q.13

If ' λ_1 ' and ' λ_2 ' are the wavelengths of de-Broglie waves for electrons in first and second Bohr orbits in hydrogen atom, then $\left(\frac{\lambda_1}{\lambda_2}\right)$ is equal to (Energy in 1st Bohr orbit = -13.6 eV)

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135115651

Option 1 ID : 37135162604

Option 2 ID : 37135162601

Option 3 ID : 37135162603

Option 4 ID : 37135162602

Status : Answered

Chosen Option : 3

Q.14 In Searle's method to find Young's modulus of a wire , when a force of 1.5 kg-wt is applied at its free end, the length of wire is 'a'. When force of 2.5 kg-wt is applied, the length of wire is 'b'. What would be its original length?

Ans

✗ 1. $b - a$

✗ 2. $\frac{b-a}{4}$

✓ 3. $2.5 a - 1.5 b$

✗ 4. $2.5 b - 1.5 a$

Question Type : MCQ

Question ID : 37135115693

Option 1 ID : 37135162771

Option 2 ID : 37135162772

Option 3 ID : 37135162770

Option 4 ID : 37135162769

Status : Answered

Chosen Option : 3

Q.15

A light ray of frequency ' ν ' and wavelength ' λ ' enters a liquid of refractive index $\frac{3}{2}$.

The ray travels in the liquid with

Ans 1.

frequency ν and wavelength $\left(\frac{1}{2}\right)\lambda$.

2.

frequency ν and wavelength $\left(\frac{2}{3}\right)\lambda$.

3.

frequency $\left(\frac{3}{2}\right)\nu$ and wavelength λ .

4.

frequency ν and wavelength $\left(\frac{3}{2}\right)\lambda$.

Question Type : MCQ

Question ID : 37135115675

Option 1 ID : 37135162699

Option 2 ID : 37135162697

Option 3 ID : 37135162700

Option 4 ID : 37135162698

Status : Answered

Chosen Option : 2

Q.16

Two black spheres 'P' and 'Q' have radii in the ratio 3:2. The wavelengths of maximum intensity radiation are in the ratio 3:4 respectively. The ratio of radiated power by 'P' to 'Q' is

Ans

1. $\frac{74}{9}$

2. $\frac{64}{9}$

3. $\frac{16}{9}$

4. $\frac{25}{9}$

Question Type : MCQ

Question ID : 37135115687

Option 1 ID : 37135162748

Option 2 ID : 37135162747

Option 3 ID : 37135162745

Option 4 ID : 37135162746

Status : Answered

Chosen Option : 3

Q.17 Two waves with same amplitude and frequency superpose at a point. The ratio of resultant intensities when they arrive in phase to that when they arrive 90° out of phase is $\left[\cos\frac{\pi}{2} = 0\right]$

Ans

1. $\sqrt{2}:1$

2. $2:1$

3. $4:1$

4. $1:2$

Question Type : MCQ

Question ID : 37135115673

Option 1 ID : 37135162689

Option 2 ID : 37135162690

Option 3 ID : 37135162692

Option 4 ID : 37135162691

Status : Answered

Chosen Option : 2

Q.18 Under isothermal conditions, two soap bubbles of radii ' r_1 ' and ' r_2 ' coalesce to form a big drop. The radius of the big drop is

Ans

1. $(r_1 - r_2)^{\frac{1}{2}}$

2. $(r_1 + r_2)^{\frac{1}{2}}$

3. $(r_1^2 + r_2^2)^{\frac{1}{2}}$

4. $(r_1^2 - r_2^2)^{\frac{1}{2}}$

Question Type : MCQ

Question ID : 37135115663

Option 1 ID : 37135162651

Option 2 ID : 37135162650

Option 3 ID : 37135162652

Option 4 ID : 37135162649

Status : Answered

Chosen Option : 3

Q.19 The region near the junction of an unbiased p-n junction diode is known as depletion layer. The layer is depleted of

Ans

1. only negative ions.

2. electrons and holes.

3.

both positive and negative ions.

4. only positive ions.

Question Type : **MCQ**

Question ID : **37135115681**

Option 1 ID : **37135162722**

Option 2 ID : **37135162724**

Option 3 ID : **37135162723**

Option 4 ID : **37135162721**

Status : **Answered**

Chosen Option : **3**

Q.20 A plane wavefront is incident on a water surface at an angle of incidence 60° then it gets refracted at 45° . The ratio of width of incident wavefront to that of refracted wavefront will be $\left[\sin \frac{\pi}{4} = \cos \frac{\pi}{4} = \frac{1}{\sqrt{2}}, \sin 60^\circ = \frac{\sqrt{3}}{2}, \cos 60^\circ = \frac{1}{2} \right]$

Ans

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

2. $2\sqrt{3}$

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

4. $\sqrt{2}$

Question Type : **MCQ**

Question ID : **37135115699**

Option 1 ID : **37135162794**

Option 2 ID : **37135162796**

Option 3 ID : **37135162795**

Option 4 ID : **37135162793**

Status : **Answered**

Chosen Option : **3**

Q.21

If T is the half-life of a radioactive substance then its instantaneous rate of change of activity is proportional to

Ans

1. \sqrt{T}

2. T

3. T^2

4. T^{-2}

Question Type : **MCQ**

Question ID : **37135115658**

Option 1 ID : **37135162629**

Option 2 ID : **37135162630**

Option 3 ID : **37135162631**

Option 4 ID : **37135162632**

Status : **Answered**

Chosen Option : **2**

Q.22 A wheel of radius 2cm is at rest on the horizontal surface. A point P on the circumference of the wheel is in contact with the horizontal surface. When the wheel rolls without slipping on the surface, the displacement of point P after half rotation of wheel is

Ans

1. $2(\pi^2 + 2)^{\frac{1}{2}} \text{ cm}$

2. $(\pi^2 + 2)^{\frac{1}{2}} \text{ cm}$

3. $(\pi^2 + 4)^{\frac{1}{2}} \text{ cm}$

4. $2(\pi^2 + 4)^{\frac{1}{2}} \text{ cm}$

Question Type : **MCQ**

Question ID : **37135115682**

Option 1 ID : **37135162725**

Option 2 ID : **37135162726**

Option 3 ID : **37135162727**

Option 4 ID : **37135162728**

Status : **Answered**

Chosen Option : **2**

Q.23

A straight wire of length 0.5m and carrying current of 1.2A is placed in a uniform magnetic field of induction 2T. The magnetic field is perpendicular to the length of the wire. What is the force acting on the wire? [$\sin 90^\circ = 1$]

Ans

1. 2.0 N

2. 2.4 N

3. 1.2 N

4. 3.0 N

Question Type : MCQ

Question ID : 37135115660

Option 1 ID : 37135162639

Option 2 ID : 37135162638

Option 3 ID : 37135162640

Option 4 ID : 37135162637

Status : Answered

Chosen Option : 3

Q.24

An elastic material with Young's modulus 'Y' is subjected to a tensile stress 'S'. The elastic energy stored per unit volume of the material will be

Ans

1. $\frac{S^2}{Y}$

2. $\frac{S^2}{2Y}$

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

4. $\frac{S}{2Y}$

Question Type : MCQ

Question ID : 37135115659

Option 1 ID : 37135162634

Option 2 ID : 37135162635

Option 3 ID : 37135162633

Option 4 ID : 37135162636

Status : Answered

Chosen Option : 2

Q.25 Three vectors \vec{A} , \vec{B} and \vec{C} are such that $\vec{A} \cdot \vec{B} = \vec{A} \cdot \vec{C} = 0$, then \vec{A} is parallel to
[$\cos 90^\circ = 0$]

Ans

1. $\vec{B} \cdot \vec{C}$

2. $\vec{B} \times \vec{C}$

3. \vec{C}

4. \vec{B}

Question Type : MCQ

Question ID : 37135115680

Option 1 ID : 37135162720

Option 2 ID : 37135162718

Option 3 ID : 37135162719

Option 4 ID : 37135162717

Status : Answered

Chosen Option : 2

Q.26 The resonant frequency of a series LCR circuit is ' f '. The circuit is now connected to the sinusoidally alternating e.m.f. of frequency ' $2f$ '. The new reactance X'_L and X'_C are related as

Ans

1. $X'_C = \frac{1}{4} X'_L$

2. $X'_C = 2X'_L$

3. $X'_C = X'_L$

4. $X'_C = \frac{1}{2} X'_L$

Question Type : MCQ

Question ID : 37135115668

Option 1 ID : 37135162672

Option 2 ID : 37135162669

Option 3 ID : 37135162670

Option 4 ID : 37135162671

Status : Answered

Chosen Option : 1



Q.27

A block of mass 4kg is placed on a horizontal surface having coefficients of static and kinetic friction as 0.5 and 0.4 respectively. If a force, parallel to horizontal surface of 4N is applied to the body, then the force of friction acting on the body will be [$g = 10 \text{ m/s}^2$]

Ans

1. 16 N

2. 20 N

3. 8 N

4. 4 N

Question Type : MCQ

Question ID : 37135115685

Option 1 ID : 37135162738

Option 2 ID : 37135162737

Option 3 ID : 37135162739

Option 4 ID : 37135162740

Status : Answered

Chosen Option : 4

Q.28

The displacements of two particles executing simple harmonic motion are represented as $y_1 = 2\sin(10t + \theta)$ and $y_2 = 3\cos 10t$. The phase difference between the velocities of these waves is

Ans

1. $\left(\theta + \frac{\pi}{2}\right)$

2. $-\theta$

3. $\left(\theta - \frac{\pi}{2}\right)$

4. θ

Question Type : MCQ

Question ID : 37135115672

Option 1 ID : 37135162687

Option 2 ID : 37135162686

Option 3 ID : 37135162688

Option 4 ID : 37135162685

Status : Answered

Chosen Option : 2



Q.29 A bullet of mass 20g moving with a velocity of 200m/s strikes a target and is brought to rest in $\left(\frac{1}{50}\right)^{\text{th}}$ of a second. The impulse and average force of impact are respectively

Ans

1. 2 Ns , 100 N

2. 4 Ns , 100 N

3. 2 Ns , 200 N

4. 4 Ns , 200 N

Question Type : **MCQ**

Question ID : **37135115698**

Option 1 ID : **37135162792**

Option 2 ID : **37135162790**

Option 3 ID : **37135162791**

Option 4 ID : **37135162789**

Status : **Answered**

Chosen Option : **3**

Q.30 In a biprism experiment, monochromatic light of wavelength (λ) is used. The distance between two coherent sources is kept constant. If the distance between slit and eyepiece (D) is varied as D_1 , D_2 , D_3 and D_4 , the corresponding measured fringe widths are z_1 , z_2 , z_3 and z_4 then

Ans 1.

$$\frac{z_1}{D_1} = \frac{z_2}{D_2} = \frac{z_3}{D_3} = \frac{z_4}{D_4}$$

2.

$$z_1 D_1 = z_2 D_2 = z_3 D_3 = z_4 D_4$$

3.

$$z_1 \sqrt{D_1} = z_2 \sqrt{D_2} = z_3 \sqrt{D_3} = z_4 \sqrt{D_4}$$

4.

$$z_1 D_1^2 = z_2 D_2^2 = z_3 D_3^2 = z_4 D_4^2$$

Question Type : **MCQ**

Question ID : **37135115656**

Option 1 ID : **37135162624**

Option 2 ID : **37135162621**

Option 3 ID : **37135162622**

Option 4 ID : **37135162623**

Status : **Answered**

Chosen Option : **2**

Q.31 If the frequency of incident light falling on a metallic surface is doubled, maximum kinetic energy of emitted photoelectrons

Ans 1.

increases to slightly more than double.

2. remains the same.

3. becomes twice.

4.

decreases to slightly more than double.

Question Type : MCQ

Question ID : 37135115679

Option 1 ID : 37135162713

Option 2 ID : 37135162714

Option 3 ID : 37135162716

Option 4 ID : 37135162715

Status : Answered

Chosen Option : 3

Q.32 Two strings of same material having lengths as 'L', '2L', and radii '2r', 'r' respectively, are vibrating in the fundamental mode. Tension applied to both the strings is same. The ratio of their respective fundamental frequencies is

Ans

1. 4:3

2. 1:2

3. 1:1

4. 3:4

Question Type : MCQ

Question ID : 37135115700

Option 1 ID : 37135162800

Option 2 ID : 37135162797

Option 3 ID : 37135162799

Option 4 ID : 37135162798

Status : Answered

Chosen Option : 2

Q.33

A simple pendulum of length 'L' is suspended from a roof of a trolley. A trolley moves in horizontal direction with an acceleration 'a'. What would be the period of oscillation of a simple pendulum? [g is acceleration due to gravity]

Ans

✓ 1. $2 \pi \sqrt{L} (a^2 + g^2)^{-\frac{1}{4}}$

✗ 2. $2 \pi \sqrt{L} (a^2 + g^2)^{-\frac{1}{2}}$

✗ 3. $2 \pi \sqrt{\frac{L}{g+a}}$

✗ 4. $2 \pi \sqrt{\frac{L}{g-a}}$

Question Type : MCQ

Question ID : 37135115689

Option 1 ID : 37135162755

Option 2 ID : 37135162756

Option 3 ID : 37135162753

Option 4 ID : 37135162754

Status : Answered

Chosen Option : 2

Q.34 In communication system, what is used to extend the range of a communication?

Ans

- 1. Transducer
- 2. Attenuation
- 3. Repeater
- 4. Modulation

Question Type : MCQ
Question ID : 37135115697
Option 1 ID : 37135162786
Option 2 ID : 37135162788
Option 3 ID : 37135162785
Option 4 ID : 37135162787
Status : Answered
Chosen Option : 3

Q.35 Two capacitors of same capacity are first joined in series and then in parallel. The ratio of resultant capacity in series to that in parallel combination will be

Ans

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

Question Type : MCQ
Question ID : 37135115666
Option 1 ID : 37135162662
Option 2 ID : 37135162664
Option 3 ID : 37135162661
Option 4 ID : 37135162663
Status : Answered
Chosen Option : 2

Q.36

Two particles A and B have equal charges but different masses M_A and M_B . After being accelerated through same potential difference enter the region of uniform magnetic field and describe the path of radii R_A and R_B respectively. Then $M_A : M_B$ is

Ans

1. $\frac{R_A}{R_B}$

2. $\frac{R_B}{R_A}$

3. $\left(\frac{R_A}{R_B}\right)^2$

4. $\left(\frac{R_B}{R_A}\right)^2$

Question Type : MCQ

Question ID : 37135115688

Option 1 ID : 37135162751

Option 2 ID : 37135162752

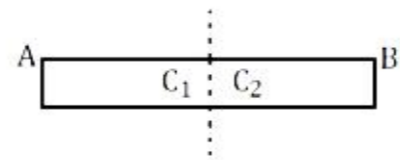
Option 3 ID : 37135162749

Option 4 ID : 37135162750

Status : Answered

Chosen Option : 3

Q.37 A bar magnet AB is cut into two equal parts. (as shown in figure). One part is kept over the other so that the pole C_2 is above C_1 . If M is the magnetic moment of the original magnet, the magnetic moment of the combination so formed is



Ans

1. M

2. $\frac{M}{2}$

3. Zero

4. $2M$

Question Type : **MCQ**

Question ID : **37135115655**

Option 1 ID : **37135162617**

Option 2 ID : **37135162618**

Option 3 ID : **37135162620**

Option 4 ID : **37135162619**

Status : **Answered**

Chosen Option : **1**

Q.38 Mass of 0.5 kg is attached to a string moving in horizontal circle with angular velocity 10 cycle/min. Keeping the radius constant, tension in the string is made 4 times by increasing angular velocity ' ω '. The value ' ω ' of that mass will be

Ans

✓^{1.} $\frac{1}{3}$ cycle/s

✗^{2.} $\frac{1}{2}$ cycle/s

✗^{3.} $\frac{1}{5}$ cycle/s

✗^{4.} $\frac{1}{4}$ cycle/s

Question Type : **MCQ**

Question ID : **37135115696**

Option 1 ID : **37135162782**

Option 2 ID : **37135162781**

Option 3 ID : **37135162784**

Option 4 ID : **37135162783**

Status : **Answered**

Chosen Option : **4**

Q.39

A metal sphere of radius 'R' cm is charged with $4\pi \mu C$ situated in air. If ' σ ' is surface density of charge, 'E' is electric intensity at a distance 'r' from the centre of sphere then 'r' is (ϵ_0 = permittivity of free space)

Ans

1. $R \sqrt{\frac{\epsilon_0 E}{\sigma}}$

2. $R \sqrt{\frac{\sigma}{\epsilon_0 E}}$

3. $\sqrt{\frac{\epsilon_0 E}{R\sigma}}$

4. $\sqrt{\frac{R\sigma}{\epsilon_0 E}}$

Question Type : MCQ

Question ID : 37135115694

Option 1 ID : 37135162775

Option 2 ID : 37135162776

Option 3 ID : 37135162773

Option 4 ID : 37135162774

Status : Answered

Chosen Option : 4

Q.40

A particle is performing uniform circular motion. If ' θ ', ' ω ', ' α ' and ' a ' are its angular displacement, angular velocity, angular acceleration and centripetal acceleration respectively, then which of the following is 'WRONG'?

('v' is its linear velocity)

Ans

1. $\vec{v} \perp \vec{a}$

2. $\vec{\omega} \perp \vec{v}$

3. $\vec{\omega} \perp \vec{\alpha}$

4. $\vec{\omega} \perp \vec{a}$

Question Type : MCQ

Question ID : 37135115667

Option 1 ID : 37135162668

Option 2 ID : 37135162665

Option 3 ID : 37135162667

Option 4 ID : 37135162666

Status : Answered

Chosen Option : 3

Q.41 Moment of inertia of a solid sphere about its diameter is 'I'. It is then casted into 27 small spheres of same diameter. The moment of inertia of each new sphere is

Ans

✓ 1. $\frac{I}{243}$

✗ 2. $\frac{I}{122}$

✗ 3. $\frac{I}{31}$

✗ 4. $\frac{I}{62}$

Question Type : MCQ

Question ID : 37135115678

Option 1 ID : 37135162709

Option 2 ID : 37135162710

Option 3 ID : 37135162712

Option 4 ID : 37135162711

Status : Answered

Chosen Option : 4

Q.42

About black body radiation, which one of the following is 'WRONG' statement ?

Ans

✓ 1.

For all wavelengths , intensity is same.

✗ 2.

All wavelengths are emitted by a black body.

✗ 3.

For longer wavelengths , intensity is less.

✗ 4.

For shorter wavelengths , intensity is more.

Question Type : MCQ

Question ID : 37135115654

Option 1 ID : 37135162613

Option 2 ID : 37135162616

Option 3 ID : 37135162615

Option 4 ID : 37135162614

Status : Answered

Chosen Option : 1

Q.43

Two satellites of masses 'm' and '2m' are revolving in a circular orbit of radius 'r', around the earth. The ratio of their frequencies of revolution will be

Ans

✗ 1. 1:3

✗ 2. 1:2

✓ 3. 1:1

✗ 4. 2:1

Question Type : MCQ

Question ID : 37135115661

Option 1 ID : 37135162643

Option 2 ID : 37135162641

Option 3 ID : 37135162644

Option 4 ID : 37135162642

Status : Answered

Chosen Option : 3

Q.44

A stationary wave is represented by $y = 10 \sin \frac{\pi x}{4} \cos 20 \pi t$ where 'x' and 'y' are expressed in cm and 't' in second. Distance between two consecutive nodes is

Ans

✓ 1. 4 cm

✗ 2. 1 cm

✗ 3. 8 cm

✗ 4. 2 cm

Question Type : MCQ

Question ID : 37135115669

Option 1 ID : 37135162674

Option 2 ID : 37135162676

Option 3 ID : 37135162673

Option 4 ID : 37135162675

Status : Answered

Chosen Option : 1

Q.45

Five objects of different masses are simultaneously released vertically downwards from height 'h' (in air). Which physical quantity associated with the objects will change at the instant they strike the ground ? (Neglect the air resistance.)

Ans

✓ 1. Momentum

✗ 2. Time

✗ 3. Acceleration

✗ 4. Velocity

Question Type : MCQ

Question ID : 37135115695

Option 1 ID : 37135162780

Option 2 ID : 37135162777

Option 3 ID : 37135162779

Option 4 ID : 37135162778

Status : Answered

Chosen Option : 1

Q.46

A thin circular ring of mass 'M' and radius 'r' is rotating about its axis with an angular speed ' ω '. Two particles each of mass 'm' are now attached at diametrically opposite points. The angular speed of the ring will become

Ans

✓ 1.
$$\frac{\omega M}{M+2m}$$

✗ 2.
$$\frac{\omega M}{M+m}$$

✗ 3.
$$\frac{\omega(M-2m)}{M}$$

✗ 4.
$$\frac{\omega(M-2m)}{M+2m}$$

Question Type : MCQ

Question ID : 37135115657

Option 1 ID : 37135162626

Option 2 ID : 37135162625

Option 3 ID : 37135162628

Option 4 ID : 37135162627

Status : Answered

Chosen Option : 1

Q.47 A stray magnetic field does 'NOT' affect the deflection of moving coil galvanometer because

Ans 1.

magnetic field inside galvanometer is zero.

2.

magnetic field is equal to earth's magnetic field.

3.

magnetic field inside galvanometer is very strong.

4.

magnetic field inside galvanometer is very weak.

Question Type : MCQ

Question ID : 37135115664

Option 1 ID : 37135162656

Option 2 ID : 37135162655

Option 3 ID : 37135162654

Option 4 ID : 37135162653

Status : Answered

Chosen Option : 1

Q.48 The susceptibility of tungsten is 6.8×10^{-5} at temperature 300K. The susceptibility at temperature 400K is

Ans

1. 5.1×10^{-5}

2. 6.8×10^{-5}

3. 3.4×10^{-5}

4. 4.8×10^{-5}

Question Type : MCQ

Question ID : 37135115671

Option 1 ID : 37135162682

Option 2 ID : 37135162684

Option 3 ID : 37135162681

Option 4 ID : 37135162683

Status : Answered

Chosen Option : 4

Q.49

The dimensions of magnetic intensity are

Ans

✗ 1. $[L^1 M^0 T^1 I^1]$

✗ 2. $[L^1 M^0 T^0 I^{-1}]$

✓ 3. $[L^{-1} M^0 T^0 I^1]$

✗ 4. $[L^2 M^1 T^0 I^1]$

Question Type : **MCQ**

Question ID : **37135115683**

Option 1 ID : **37135162729**

Option 2 ID : **37135162732**

Option 3 ID : **37135162731**

Option 4 ID : **37135162730**

Status : **Answered**

Chosen Option : **1**

Q.50 Which one of the following combination of constants has dimensions of time?
[G = constant of gravitation, h = Planck's constant, c = velocity of light]

Ans

✓ 1. $\left[\frac{Gh}{c^5}\right]^{\frac{1}{2}}$

✗ 2. $\left[\frac{Gh}{c}\right]^{\frac{1}{2}}$

✗ 3. $\left[\frac{Gh}{c^4}\right]^{\frac{1}{2}}$

✗ 4. $\left[\frac{Gh}{c^3}\right]^{\frac{1}{2}}$

Question Type : MCQ

Question ID : 37135115665

Option 1 ID : 37135162657

Option 2 ID : 37135162660

Option 3 ID : 37135162658

Option 4 ID : 37135162659

Status : Answered

Chosen Option : 3

Topic: Chemistry

Q.1 Which among the following substituent groups decreases the acidic strength of aromatic carboxylic acid ?

Ans

✓ 1. $-\text{NH}_2$

✗ 2. $-\text{CN}$

✗ 3. $-\text{Cl}$

✗ 4. $-\text{NO}_2$

Question Type : MCQ

Question ID : 37135115742

Option 1 ID : 37135162968

Option 2 ID : 37135162965

Option 3 ID : 37135162966

Option 4 ID : 37135162967

Status : Answered

Chosen Option : 4

Q.2 According to Raoult's law, relative lowering of vapour pressure for a solution containing a non volatile solute is equal to

Ans

1. mole fraction of solvent

2. moles of solute

3. moles of solvent

4. mole fraction of solute

Question Type : **MCQ**

Question ID : **37135115749**

Option 1 ID : **37135162993**

Option 2 ID : **37135162995**

Option 3 ID : **37135162996**

Option 4 ID : **37135162994**

Status : **Answered**

Chosen Option : **4**

Q.3

What is the value of primary valence of Co in CoCl_3 ?

Ans

1. 2

2. 4

3. 3

4. 1

Question Type : **MCQ**

Question ID : **37135115708**

Option 1 ID : **37135162831**

Option 2 ID : **37135162829**

Option 3 ID : **37135162830**

Option 4 ID : **37135162832**

Status : **Answered**

Chosen Option : **3**

Q.4

When 2 moles of an ideal gas are expanded isothermally from a volume of 12.5 L to 15.0 L against constant external pressure of 760 mm Hg. Calculate the amount of work done in joule ?

Ans

✓^{1.} -253.25 J

✗^{2.} -190.0 J

✗^{3.} -1924.0 J

✗^{4.} -25.325 J

Question Type : **MCQ**

Question ID : **37135115734**

Option 1 ID : **37135162933**

Option 2 ID : **37135162935**

Option 3 ID : **37135162936**

Option 4 ID : **37135162934**

Status : **Answered**

Chosen Option : **2**

Q.5 Which among the following is correct when energy of activation, E_a of the catalyzed reaction decreases at constant temperature and for same concentration ?

Ans

✓₁. E_a/RT decreases

✗₂. K decreases

✗₃. $e^{-E_a/RT}$ decreases

✗₄. $-E_a/RT$ decreases

Question Type : MCQ

Question ID : 37135115701

Option 1 ID : 37135162801

Option 2 ID : 37135162804

Option 3 ID : 37135162803

Option 4 ID : 37135162802

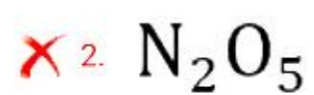
Status : Answered

Chosen Option : 1

Q.6

Which of the following formula represents laughing gas ?

Ans



Question Type : MCQ

Question ID : 37135115727

Option 1 ID : 37135162905

Option 2 ID : 37135162908

Option 3 ID : 37135162907

Option 4 ID : 37135162906

Status : Answered

Chosen Option : 1

Q.7

Which of the following statements is true for electrolytic cell ?

Ans

✓ 1.

Oxidation occurs at positive electrode

✗ 2.

Oxidation occurs at negative electrode

✗ 3.

Anode is negative and cathode is positive electrode

✗ 4.

Reduction occurs at positive electrode

Question Type : **MCQ**

Question ID : **37135115703**

Option 1 ID : **37135162811**

Option 2 ID : **37135162810**

Option 3 ID : **37135162809**

Option 4 ID : **37135162812**

Status : **Answered**

Chosen Option : **3**

Q.8

Identify the type of drug used to reduce pain and irritation of stomach ?

Ans

1. Tranquilizer

2. antibiotic

3. antiseptic

4. antacid

Question Type : MCQ

Question ID : 37135115730

Option 1 ID : 37135162917

Option 2 ID : 37135162918

Option 3 ID : 37135162919

Option 4 ID : 37135162920

Status : Answered

Chosen Option : 4

Q.9

Which of the following alcohols is prepared by acid catalysed hydration of alkenes ?

Ans

✓ 1. Ethanol

✗ 2. Methanol

✗ 3. Propan-1-ol

✗ 4. Butan-1-ol

Question Type : MCQ

Question ID : 37135115733

Option 1 ID : 37135162930

Option 2 ID : 37135162929

Option 3 ID : 37135162931

Option 4 ID : 37135162932

Status : Answered

Chosen Option : 1

Q.11 What is the mass of an fcc unit cell if mass of one atom of an element is 6×10^{-23} g?

Ans

1. 24×10^{-22} g

2. 4×10^{-23} g

3. 2.4×10^{-22} g

4. 2.4×10^{-23} g

Question Type : MCQ

Question ID : 37135115729

Option 1 ID : 37135162914

Option 2 ID : 37135162916

Option 3 ID : 37135162913

Option 4 ID : 37135162915

Status : Answered

Chosen Option : 3

Q.12

Which of the following is a major product obtained in the reaction of isobutylene with hydrogen bromide ?

Ans

✓ 1. tert - butyl bromide

✗ 2. sec-butyl bromide

✗ 3. n - butyl bromide

✗ 4. Iso butyl bromide

Question Type : **MCQ**

Question ID : **37135115724**

Option 1 ID : **37135162895**

Option 2 ID : **37135162894**

Option 3 ID : **37135162893**

Option 4 ID : **37135162896**

Status : **Answered**

Chosen Option : **2**

Q.13

Which of the following equations is correct for heat of sublimation ?

Ans

✗ 1. $\Delta_{\text{vap}}H = \Delta_{\text{sub}}H + \Delta_{\text{fus}}H$

✗ 2. $\Delta_{\text{sub}}H = \Delta_{\text{fus}}H - \Delta_{\text{vap}}H$

✗ 3. $\Delta_{\text{fus}}H = \Delta_{\text{sub}}H \times \Delta_{\text{vap}}H$

✓ 4. $\Delta_{\text{sub}}H = \Delta_{\text{fus}}H + \Delta_{\text{vap}}H$

Question Type : MCQ

Question ID : 37135115709

Option 1 ID : 37135162834

Option 2 ID : 37135162833

Option 3 ID : 37135162835

Option 4 ID : 37135162836

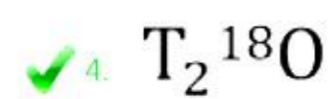
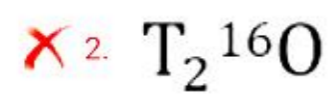
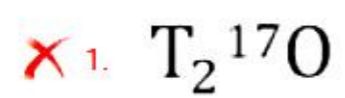
Status : Answered

Chosen Option : 4

Q.14

Which among the following is a heaviest isotope of water ?

Ans



Question Type : MCQ

Question ID : 37135115726

Option 1 ID : 37135162902

Option 2 ID : 37135162901

Option 3 ID : 37135162904

Option 4 ID : 37135162903

Status : Answered

Chosen Option : 4

Q.15

Which of the following ionic species has highest precipitating power ?

Ans



Question Type : MCQ

Question ID : 37135115735

Option 1 ID : 37135162938

Option 2 ID : 37135162940

Option 3 ID : 37135162937

Option 4 ID : 37135162939

Status : Answered

Chosen Option : 2

Q.16

IUPAC name of benzylamine is

Ans

1. phenylethanamine

2. phenylmethanamine

3. benzenamine

4. N-methylbenzenamine

Question Type : **MCQ**

Question ID : **37135115719**

Option 1 ID : **37135162876**

Option 2 ID : **37135162875**

Option 3 ID : **37135162873**

Option 4 ID : **37135162874**

Status : **Answered**

Chosen Option : **4**

Q.17

Half life of first order reaction is 20 minutes. What is the time taken to reduce the initial concentration of the reactant to $\frac{1}{10}$ th ?

Ans

1. 6.6 min

2. 66.56 min

3. 150 min

4. 79.68 min

Question Type : MCQ

Question ID : 37135115748

Option 1 ID : 37135162992

Option 2 ID : 37135162991

Option 3 ID : 37135162989

Option 4 ID : 37135162990

Status : Answered

Chosen Option : 2

Q.18 The Henry's law constant for oxygen is $1.3 \times 10^{-3} \text{ mol dm}^{-3}\text{atm}^{-1}$. If partial pressure of oxygen is 0.46 atmosphere what is the concentration of dissolved oxygen at 25 °C and 1 atm pressure ?

Ans

✓ 1. $5.98 \times 10^{-4} \text{ mol dm}^{-3}$

✗ 2. $3.53 \times 10^{-4} \text{ mol dm}^{-3}$

✗ 3. 5.98 mol dm^{-3}

✗ 4. $2.82 \times 10^{-3} \text{ mol dm}^{-3}$

Question Type : **MCQ**

Question ID : **37135115738**

Option 1 ID : **37135162949**

Option 2 ID : **37135162951**

Option 3 ID : **37135162952**

Option 4 ID : **37135162950**

Status : **Answered**

Chosen Option : **1**

Q.19

What is the type of hybridisation and the geometry respectively found in $[\text{CoF}_6]^{3-}$?

Ans 1.

d^3sp^3 and pentagonal bipyramidal

2. sp^3d^2 and octahedral

3. dsp^3 and trigonal bipyramidal

4.

dsp^2 and pentagonal bipyramidal

Question Type : **MCQ**

Question ID : **37135115702**

Option 1 ID : **37135162807**

Option 2 ID : **37135162806**

Option 3 ID : **37135162805**

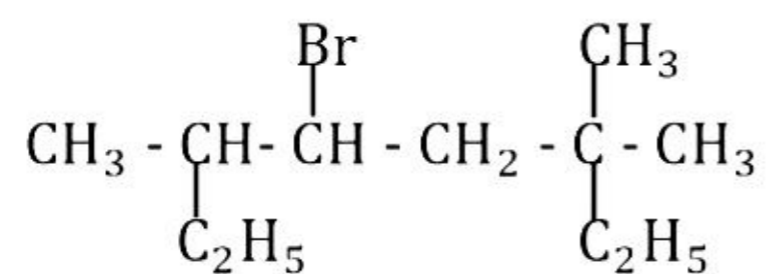
Option 4 ID : **37135162808**

Status : **Answered**

Chosen Option : **1**

Q.20

I.U.P.A.C. name of the following compound is



Ans 1.

4-bromo-2-ethyl-2, 5-dimethylheptane

2.

5-bromo-3, 3, 6-trimethyloctane

3.

3-bromo-2, 5-diethyl-5-methylhexane

4.

4-bromo-3, 6, 6-trimethyloctane

Question Type : MCQ

Question ID : 37135115713

Option 1 ID : 37135162850

Option 2 ID : 37135162852

Option 3 ID : 37135162849

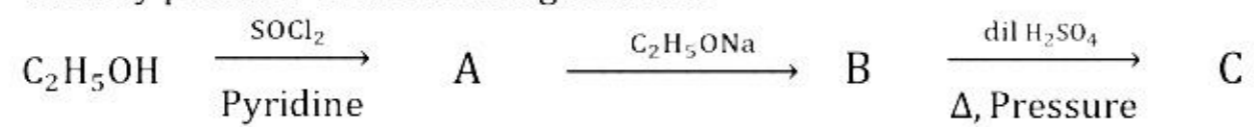
Option 4 ID : 37135162851

Status : Answered

Chosen Option : 3

Q.21

Identify product 'C' in following reaction



Ans

1. Ethyl ethanoate

2. Ethanol

3. Ethanoic acid

4. But-2-ene

Question Type : MCQ

Question ID : 37135115728

Option 1 ID : 37135162909

Option 2 ID : 37135162911

Option 3 ID : 37135162910

Option 4 ID : 37135162912

Status : Answered

Chosen Option : 1

Q.22

Sodium salt of α - halogen carboxylic acid when heated with sodium nitrite and followed by hydrolysis forms

Ans

✓ 1. nitroalkane

✗ 2. amine

✗ 3. alcohol

✗ 4. amide

Question Type : MCQ

Question ID : 37135115710

Option 1 ID : 37135162838

Option 2 ID : 37135162839

Option 3 ID : 37135162840

Option 4 ID : 37135162837

Status : Answered

Chosen Option : 3

Q.23

Which among the following orbitals form Delta (δ) molecular orbitals ?

Ans

1. d_{xy} and d_{yz} orbitals

2. d_{z^2} and $d_{x^2 - y^2}$ orbitals

3. d_{yz} and $d_{x^2 - y^2}$ orbitals

4. d_{xy} and $d_{x^2 - y^2}$ orbitals

Question Type : MCQ

Question ID : 37135115731

Option 1 ID : 37135162924

Option 2 ID : 37135162923

Option 3 ID : 37135162922

Option 4 ID : 37135162921

Status : Answered

Chosen Option : 1

Q.24

What is the position of elements La ($Z=57$) and Ce ($Z= 58$) respectively in the long form of periodic table ?

Ans

✓ 1. La = Group-3, Period-6
Ce = Group-3, Period-6

✗ 2. La = Group-4, Period-7
Ce = Group-5, Period-7

✗ 3. La = Group-3, Period-7
Ce = Group-3, Period-6

✗ 4. La = Group-3, Period-6
Ce = Group-3, Period-7

Question Type : MCQ

Question ID : 37135115736

Option 1 ID : 37135162942

Option 2 ID : 37135162943

Option 3 ID : 37135162944

Option 4 ID : 37135162941

Status : Answered

Chosen Option : 2

Q.25

What is the formal charge on hydrogen atom in water molecule ?

Ans

1.

2.

3.

4.

Question Type : MCQ

Question ID : 37135115725

Option 1 ID : 37135162900

Option 2 ID : 37135162897

Option 3 ID : 37135162899

Option 4 ID : 37135162898

Status : Answered

Chosen Option : 2

Q.26

Identify addition polymer from following

Ans

1. Nylon-6, 6

2. Polyester

3. Orlon

4. Urea formaldehyde polymer

Question Type : **MCQ**

Question ID : **37135115740**

Option 1 ID : **37135162958**

Option 2 ID : **37135162959**

Option 3 ID : **37135162957**

Option 4 ID : **37135162960**

Status : **Answered**

Chosen Option : **3**

Q.27

Identify the correct statement from following

Ans  1.

Lanthanoids have greater tendency to form complexes than actinoids.

 2.

Actinoid contraction is greater than lanthanoid contraction.

 3.

Hydroxides of actinoids are less basic than Lathanoid hydroxides.

 4.

Binding energy of 4 f - orbitals is lower that 5 f - orbitals.

Question Type : **MCQ**

Question ID : **37135115732**

Option 1 ID : **37135162926**

Option 2 ID : **37135162928**

Option 3 ID : **37135162927**

Option 4 ID : **37135162925**

Status : **Answered**

Chosen Option : **3**

Q.28

Identify the ore of magnesium from following ?

Ans

1. Siderite

2. Calamine

3. Limonite

4. Dolomite

Question Type : **MCQ**

Question ID : **37135115707**

Option 1 ID : **37135162826**

Option 2 ID : **37135162825**

Option 3 ID : **37135162827**

Option 4 ID : **37135162828**

Status : **Answered**

Chosen Option : **4**

Q.29

Which of the following is a solid trimer of formaldehyde ?

Ans

- 1. Metaldehyde
- 2. Paraformaldehyde
- 3. Paraldehyde
- 4. Trioxane

Question Type : **MCQ**

Question ID : **37135115744**

Option 1 ID : **37135162975**

Option 2 ID : **37135162973**

Option 3 ID : **37135162976**

Option 4 ID : **37135162974**

Status : **Answered**

Chosen Option : **2**

Q.30

What is the number of carbon atoms in alkanes found in diesel ?

Ans

1. C_{29} to C_{31}

2. C_6 to C_8

3. C_1 to C_4

4. C_{15} to C_{18}

Question Type : MCQ

Question ID : 37135115706

Option 1 ID : 37135162824

Option 2 ID : 37135162822

Option 3 ID : 37135162821

Option 4 ID : 37135162823

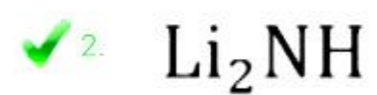
Status : Answered

Chosen Option : 4

Q.31

What is the formula of lithium imide ?

Ans



Question Type : **MCQ**

Question ID : **37135115716**

Option 1 ID : **37135162864**

Option 2 ID : **37135162862**

Option 3 ID : **37135162863**

Option 4 ID : **37135162861**

Status : **Answered**

Chosen Option : **2**

Q.32

How many hydroxy groups are present in hydroxyquinol ?

Ans

1. 4

2. 1

3. 3

4. 2

Question Type : **MCQ**

Question ID : **37135115737**

Option 1 ID : **37135162948**

Option 2 ID : **37135162945**

Option 3 ID : **37135162947**

Option 4 ID : **37135162946**

Status : **Answered**

Chosen Option : **2**

Q.33

Which oxide formation according to Ellingham diagram shows a graph with sudden change in slope ?

Ans



Question Type : MCQ

Question ID : 37135115715

Option 1 ID : 37135162860

Option 2 ID : 37135162858

Option 3 ID : 37135162857

Option 4 ID : 37135162859

Status : Answered

Chosen Option : 2

Q.34

What is the conductivity of 0.01 M NaCl solution if resistance and cell constant of NaCl solution are 375 ohms and 0.5 cm^{-1} respectively at 298 K ?

Ans

1. $7.50 \times 10^{-3} \Omega^{-1} \text{ cm}^{-1}$

2. $1.333 \times 10^{-3} \Omega^{-1} \text{ cm}^{-1}$

3. $1.333 \times 10^{-4} \Omega^{-1} \text{ cm}^{-1}$

4. $1.875 \times 10^{-3} \Omega^{-1} \text{ cm}^{-1}$

Question Type : **MCQ**

Question ID : **37135115743**

Option 1 ID : **37135162972**

Option 2 ID : **37135162971**

Option 3 ID : **37135162970**

Option 4 ID : **37135162969**

Status : **Answered**

Chosen Option : **2**

Q.35

How many lone pair of electrons are present on chlorine atom in chlorus acid ?

Ans

1. 4

2. 2

3. 1

4. 3

Question Type : MCQ

Question ID : 37135115722

Option 1 ID : 37135162885

Option 2 ID : 37135162887

Option 3 ID : 37135162888

Option 4 ID : 37135162886

Status : Answered

Chosen Option : 3

Q.36

What is the percentage of void space in bcc type of in unit cell ?

Ans

1. 68 %

2. 26 %

3. 74 %

4. 32 %

Question Type : **MCQ**

Question ID : **37135115712**

Option 1 ID : **37135162847**

Option 2 ID : **37135162846**

Option 3 ID : **37135162845**

Option 4 ID : **37135162848**

Status : **Answered**

Chosen Option : **1**

Q.37

Which of the following compounds on heating with potassium permanagnate and dilute sulphuric acid forms adipic acid ?

Ans

1. Methylbenzene

2. Phenylethene

3. Cyclohexene

4. n-butylbenzene

Question Type : MCQ

Question ID : 37135115745

Option 1 ID : 37135162980

Option 2 ID : 37135162978

Option 3 ID : 37135162977

Option 4 ID : 37135162979

Status : Answered

Chosen Option : 4

Q.38

The sum of oxidation number of all atoms in $S_2O_3^{2-}$ ion is

Ans

1. +2

2. +5

3. -2

4. +7

Question Type : MCQ

Question ID : 37135115741

Option 1 ID : 37135162961

Option 2 ID : 37135162963

Option 3 ID : 37135162962

Option 4 ID : 37135162964

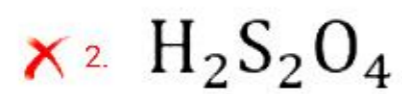
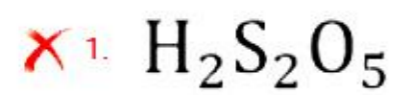
Status : Answered

Chosen Option : 1

Q.39

Which of the following oxyacid of sulphur contain both S=S and S=O bonds ?

Ans



Question Type : MCQ

Question ID : 37135115717

Option 1 ID : 37135162866

Option 2 ID : 37135162868

Option 3 ID : 37135162867

Option 4 ID : 37135162865

Status : Answered

Chosen Option : 2

Q.40

When one mole of lactose is hydrolysed, the hydrolysate contains

Ans  1.

1.0 mol Galactose + 1.0 mol Glucose

 2.

1.0 mol Glucose + 2.0 mol Galactose

 3.

1.0 mol Glucose + 1.0 mol Fructose

 4. 2.0 mol Glucose

Question Type : MCQ

Question ID : 37135115704

Option 1 ID : 37135162816

Option 2 ID : 37135162814

Option 3 ID : 37135162815

Option 4 ID : 37135162813

Status : Answered

Chosen Option : 2

Q.41

What is the type of hole occupied if limiting value of $\frac{r^+}{r^-}$ is in the range of 0.225 to 0.414 ?

Ans

- 1. Octahedral
- 2. Cubic
- 3. Planar triangular
- 4. Tetrahedral

Question Type : MCQ

Question ID : 37135115720

Option 1 ID : 37135162879

Option 2 ID : 37135162880

Option 3 ID : 37135162877

Option 4 ID : 37135162878

Status : Answered

Chosen Option : 4

Q.42

Which of the following compounds is obtained when quaternary ammonium hydroxide is strongly heated ?

Ans

1. Alkane

2. Alkyne

3. Alkene

4. Amide

Question Type : MCQ

Question ID : 37135115714

Option 1 ID : 37135162853

Option 2 ID : 37135162855

Option 3 ID : 37135162854

Option 4 ID : 37135162856

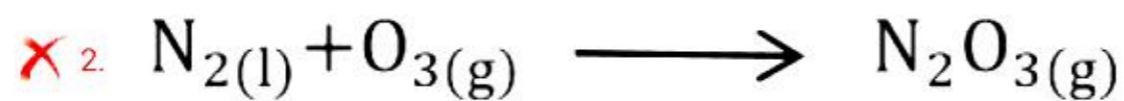
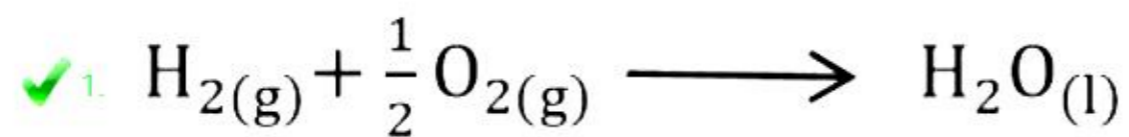
Status : Answered

Chosen Option : 4

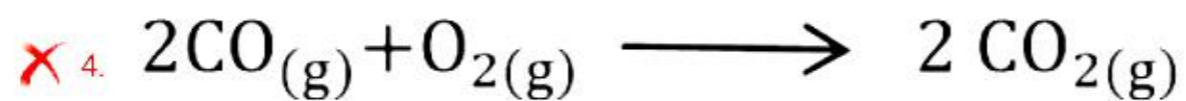
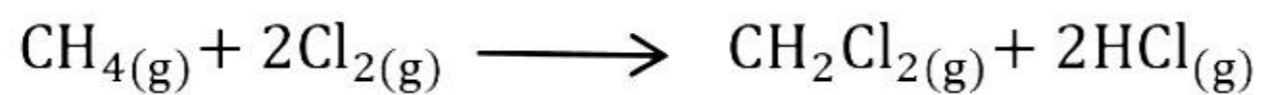
Q.43

Which of the following equations has $\Delta_f H^\circ$ and ΔH° same ?

Ans



✗ 3.



Question Type : MCQ

Question ID : 37135115739

Option 1 ID : 37135162955

Option 2 ID : 37135162953

Option 3 ID : 37135162954

Option 4 ID : 37135162956

Status : Answered

Chosen Option : 3

Q.44

Separation of Acetone and Benzene from their mixture is carried out by

Ans

1. Fractional distillation

2. Simple distillation

3.

Fractional distillation using fractionating column

4.

Distillation under reduced pressure

Question Type : **MCQ**

Question ID : **37135115711**

Option 1 ID : **37135162842**

Option 2 ID : **37135162841**

Option 3 ID : **37135162843**

Option 4 ID : **37135162844**

Status : **Answered**

Chosen Option : **3**

Q.45

Which gas among the following contains maximum number of molecules at STP ?

(Molar masses in g mol^{-1} $\text{CO}_2 = 44$, $\text{Ar} = 39.9$, $\text{CH}_4 = 16$, $\text{O}_2 = 32$)

Ans

1. 24.0 g of O_2

2. 16.0 g of CH_4

3. 13.3 g of Ar

4. 11 g of CO_2

Question Type : MCQ

Question ID : 37135115747

Option 1 ID : 37135162988

Option 2 ID : 37135162987

Option 3 ID : 37135162986

Option 4 ID : 37135162985

Status : Answered

Chosen Option : 2

Q.46

How many isomers of monobromoderivatives are obtained on bromination of following compound ?



Ans

✓ 1. 4

✗ 2. 3

✗ 3. 2

✗ 4. 5

Question Type : MCQ

Question ID : 37135115718

Option 1 ID : 37135162871

Option 2 ID : 37135162870

Option 3 ID : 37135162869

Option 4 ID : 37135162872

Status : Answered

Chosen Option : 3

Q.47

If two moles of an ideal gas at 546 K occupy a volume of 44.8 L. What is the pressure of ideal gas at 546 K? ($R = 0.0821 \text{ L atm mol}^{-1}\text{K}^{-1}$)

Ans

1. 20 atm

2. 0.2 atm

3. 0.5 atm

4. 2.0 atm

Question Type : **MCQ**

Question ID : **37135115746**

Option 1 ID : **37135162984**

Option 2 ID : **37135162983**

Option 3 ID : **37135162981**

Option 4 ID : **37135162982**

Status : **Answered**

Chosen Option : **4**

Q.48

When soap is added to an oily part of cloth, the hydrocarbon part of soap dissolves in

Ans  1.

Water, keeping the tail away from the oil

 2.

Oil, keeping the head away from the oil

 3.

Water, keeping the head away from the oil

 4.

Oil, keeping the tail away from the oil

Question Type : **MCQ**

Question ID : **37135115705**

Option 1 ID : **37135162820**

Option 2 ID : **37135162817**

Option 3 ID : **37135162818**

Option 4 ID : **37135162819**

Status : **Answered**

Chosen Option : **2**

Q.49

Identify basic amino acid from following

Ans

1. Phenylalanine

2. Histidine

3. Alanine

4. Serine

Question Type : **MCQ**

Question ID : **37135115721**

Option 1 ID : **37135162881**

Option 2 ID : **37135162884**

Option 3 ID : **37135162882**

Option 4 ID : **37135162883**

Status : **Answered**

Chosen Option : **1**

Q.50

If 2.0 g of NaOH is dissolved in 500 cm³ of water, what is molarity of solution ?

Ans

1. 0.25 mol dm⁻³

2. 0.1 mol dm⁻³

3. 0.4 mol dm⁻³

4. 0.50 mol dm⁻³

Question Type : MCQ

Question ID : 37135115723

Option 1 ID : 37135162891

Option 2 ID : 37135162890

Option 3 ID : 37135162889

Option 4 ID : 37135162892

Status : Answered

Chosen Option : 2

Source: Mathematics

Q.1

$$5^2 + 6^2 + 7^2 + \dots + 20^2 =$$

Ans

1. 2860

2. 2840

3. 2830

4. 2850

Question Type : MCQ

Question ID : 37135115780

Option 1 ID : 37135163120

Option 2 ID : 37135163118

Option 3 ID : 37135163117

Option 4 ID : 37135163119

Status : Answered

Chosen Option : 2

Q.2

The p.d.f. of a random variable X is given by $f(x) = \frac{k}{\sqrt{x}}$ if $0 \leq x \leq 4$
 $= 0$ otherwise,

then $P(1 < X < 4) =$

Ans

✓ 1. $\frac{1}{2}$

✗ 2. $\frac{1}{3}$

✗ 3. $\frac{1}{5}$

✗ 4. $\frac{3}{4}$

Question Type : MCQ

Question ID : 37135115776

Option 1 ID : 37135163103

Option 2 ID : 37135163101

Option 3 ID : 37135163102

Option 4 ID : 37135163104

Status : Answered

Chosen Option : 4

Q.3 The acute angle between the line $\vec{r} = (i + 2j + k) + \lambda(i + j + k)$ and the plane

$$\vec{r} \cdot (2i - j + k) = 5 \text{ is}$$

Ans

✓₁ $\sin^{-1} \left(\frac{\sqrt{2}}{3} \right)$

✗₂ $\sin^{-1} \left(\frac{2}{3} \right)$

✗₃ $\sin^{-1} \left(\sqrt{\frac{2}{3}} \right)$

✗₄ $\sin^{-1} \left(\frac{2}{\sqrt{3}} \right)$

Question Type : MCQ

Question ID : 37135115788

Option 1 ID : 37135163149

Option 2 ID : 37135163150

Option 3 ID : 37135163151

Option 4 ID : 37135163152

Status : Answered

Chosen Option : 1

Q.4 With usual notations in ΔABC , $a = 3$, $c = 2$ and $\sin C = \frac{2}{3}$, then $\angle A =$

Ans

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

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

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

4. $\frac{\pi^c}{6}$

Question Type : MCQ

Question ID : 37135115763

Option 1 ID : 37135163050

Option 2 ID : 37135163049

Option 3 ID : 37135163052

Option 4 ID : 37135163051

Status : Answered

Chosen Option : 3

Q.5

The rate of growth of bacteria is proportional to the bacteria present. If it is found that the number doubles in 3 hours, then the number of times the bacteria are increased in 6 hours is

Ans

- 1. 6 times the original
- 2. 4 times the original
- 3. 8 times the original
- 4. 5 times the original

Question Type : MCQ

Question ID : 37135115799

Option 1 ID : 37135163194

Option 2 ID : 37135163195

Option 3 ID : 37135163193

Option 4 ID : 37135163196

Status : Answered

Chosen Option : 2

Q.6 An urn contains 4 red and 5 white balls. Two balls are drawn one after the other without replacement, then the probability that both the balls are red is

Ans

1. $\frac{5}{6}$

2. $\frac{1}{6}$

3. $\frac{2}{9}$

4. $\frac{4}{9}$

Question Type : MCQ

Question ID : 37135115794

Option 1 ID : 37135163176

Option 2 ID : 37135163175

Option 3 ID : 37135163173

Option 4 ID : 37135163174

Status : Answered

Chosen Option : 2

Q.7 The joint equation of two lines through the origin, each of which making an angle of 30° with line $x + y = 0$ is

Ans

1. $x^2 + 4xy - y^2 = 0$

2. $x^2 - 4xy + y^2 = 0$

3. $x^2 + 4xy + y^2 = 0$

4. $x^2 - 4xy - y^2 = 0$

Question Type : MCQ

Question ID : 37135115758

Option 1 ID : 37135163031

Option 2 ID : 37135163029

Option 3 ID : 37135163030

Option 4 ID : 37135163032

Status : Answered

Chosen Option : 2

Q.8

If $\sin\left(\frac{x+y}{x-y}\right) = \tan\frac{\pi}{5}$, then $\frac{dy}{dx} =$

Ans

1. $\frac{x}{y}$

2. $\frac{y}{x}$

3. $-\frac{y}{x}$

4. $-\frac{x}{y}$

Question Type : MCQ

Question ID : 37135115800

Option 1 ID : 37135163198

Option 2 ID : 37135163197

Option 3 ID : 37135163199

Option 4 ID : 37135163200

Status : Answered

Chosen Option : 2

Q.9 The probability mass function of a random variable X is

$$P(X = x) = \frac{{}^5C_x}{2^5} \quad \text{if } x = 0, 1, 2, 3, 4, 5$$
$$= 0 \quad \text{otherwise}$$

then, $P(X \leq 2) =$

Ans

✗ 1. $P(X > 3)$

✓ 2. $P(X \geq 3)$

✗ 3. $P(X \geq 2)$

✗ 4. $P(X > 4)$

Question Type : MCQ

Question ID : 37135115768

Option 1 ID : 37135163069

Option 2 ID : 37135163070

Option 3 ID : 37135163071

Option 4 ID : 37135163072

Status : Answered

Chosen Option : 1

Q.10

If $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 3 & 1 \end{bmatrix}$, then $(AB)^{-1} =$

Ans

✓^{1.} $\begin{bmatrix} 2 & -3 \\ -7 & 11 \end{bmatrix}$

✗^{2.} $\begin{bmatrix} 2 & -3 \\ 7 & 11 \end{bmatrix}$

✗^{3.} $\begin{bmatrix} 2 & -3 \\ -7 & -11 \end{bmatrix}$

✗^{4.} $\begin{bmatrix} -2 & -3 \\ -7 & 11 \end{bmatrix}$

Question Type : MCQ

Question ID : 37135115767

Option 1 ID : 37135163068

Option 2 ID : 37135163067

Option 3 ID : 37135163066

Option 4 ID : 37135163065

Status : Answered

Chosen Option : 3

Q.11

If A, B, C are the angles of a ΔABC , then with usual notations, $\frac{c^2 - a^2 + b^2}{a^2 - b^2 + c^2} =$

Ans

1. $\frac{\cos B}{\cos A}$

2. $\frac{\cot B}{\cot A}$

3. $\frac{\sin B}{\sin A}$

4. $\frac{\tan B}{\tan A}$

Question Type : MCQ

Question ID : 37135115759

Option 1 ID : 37135163033

Option 2 ID : 37135163035

Option 3 ID : 37135163034

Option 4 ID : 37135163036

Status : Answered

Chosen Option : 2

Q.12

Domain of the real valued function $f(x) = \frac{x+2}{9-x^2}$ is

Ans

1. $-3 \leq x \leq 3$

2. $\mathbb{R} - \{-3, 3\}$

3. \mathbb{R}

4. $\mathbb{R} - \{3\}$

Question Type : MCQ

Question ID : 37135115760

Option 1 ID : 37135163040

Option 2 ID : 37135163039

Option 3 ID : 37135163037

Option 4 ID : 37135163038

Status : Answered

Chosen Option : 2

Q.13

The differential equation whose solution is $y = e^{ax}$ is

Ans

✗ 1. $y \frac{dy}{dx} = xlogy$

✗ 2. $\frac{dy}{dx} = xlogx$

✗ 3. $\frac{dy}{dx} = ylogx$

✓ 4. $x \frac{dy}{dx} = ylogy$

Question Type : MCQ

Question ID : 37135115761

Option 1 ID : 37135163044

Option 2 ID : 37135163042

Option 3 ID : 37135163041

Option 4 ID : 37135163043

Status : Answered

Chosen Option : 4

Q.14 A body cools according to Newton's law from 100°C to 60°C in 20 minutes. The temperature of the surrounding being 20°C then the temperature of the body after one hour is

Ans

1. 15°C

2. 30°C

3. 40°C

4. 20°C

Question Type : **MCQ**

Question ID : **37135115792**

Option 1 ID : **37135163167**

Option 2 ID : **37135163168**

Option 3 ID : **37135163166**

Option 4 ID : **37135163165**

Status : **Answered**

Chosen Option : **4**

Q.15 If A (3, -2, 2), B (2, $\lambda+1$, 5) are the end points of the diameter of the circle and if the point (5, 6, -1) lies on the circle, then $\lambda =$

Ans

1. 6

2. 8

3. 7

4. 5

Question Type : MCQ

Question ID : 37135115752

Option 1 ID : 37135163006

Option 2 ID : 37135163008

Option 3 ID : 37135163007

Option 4 ID : 37135163005

Status : Answered

Chosen Option : 4

Q.16

If the L. M. V. T. holds for the function $f(x) = x + \frac{1}{x}$, $x \in [1, 3]$, then $c =$

Ans

✓ 1. $\sqrt{3}$

✗ 2. 3

✗ 3. 2

✗ 4. $-\sqrt{3}$

Question Type : MCQ

Question ID : 37135115785

Option 1 ID : 37135163140

Option 2 ID : 37135163138

Option 3 ID : 37135163137

Option 4 ID : 37135163139

Status : Answered

Chosen Option : 1

Q.17

If $\bar{a}, \bar{b}, \bar{c}, \bar{d}$ are the position vectors of the points A, B, C, D respectively such that $3\bar{a} - \bar{b} + 2\bar{c} - 4\bar{d} = \bar{0}$, then the position vector of the point of intersection of the line segments AC and BD is

Ans

1. $\frac{\bar{b} + 3\bar{d}}{4}$

2. $\frac{3\bar{a} + \bar{c}}{4}$

3. $\frac{\bar{a} + \bar{c}}{2}$

4. $\frac{\bar{b} + 4\bar{d}}{5}$

Question Type : MCQ

Question ID : 37135115784

Option 1 ID : 37135163135

Option 2 ID : 37135163134

Option 3 ID : 37135163136

Option 4 ID : 37135163133

Status : Answered

Chosen Option : 1

Q.18 The perimeter of a triangle is 10 cm. If one of its side is 4 cm , then remaining sides of the triangle , when area of triangle is maximum are

Ans

1. 5 cm , 1 cm

2. 3.6 cm , 2.4 cm

3. 3 cm , 3 cm

4. 2 cm , 4 cm

Question Type : **MCQ**

Question ID : **37135115783**

Option 1 ID : **37135163132**

Option 2 ID : **37135163130**

Option 3 ID : **37135163129**

Option 4 ID : **37135163131**

Status : **Answered**

Chosen Option : **3**

Q.19 If $\vec{u} = \hat{i} - 2\hat{j} + \hat{k}$, $\vec{v} = 3\hat{i} + \hat{k}$ and $\vec{w} = \hat{j} - \hat{k}$, then the volume of the parallelepiped with $\vec{u} \times \vec{v}$, $\vec{u} + \vec{w}$ and $\vec{v} + \vec{w}$ as coterminus edges is

Ans

1. 12 cubic units

2. 10 cubic units

3. 24 cubic units

4. 20 cubic units

Question Type : MCQ

Question ID : 37135115756

Option 1 ID : 37135163023

Option 2 ID : 37135163021

Option 3 ID : 37135163022

Option 4 ID : 37135163024

Status : Answered

Chosen Option : 1

Q.20

If $A = \begin{bmatrix} \cos\theta & -\sin\theta \\ -\sin\theta & -\cos\theta \end{bmatrix}$, then $A^{-1} =$

Ans

1. $\begin{bmatrix} -\sin\theta & -\cos\theta \\ -\cos\theta & \sin\theta \end{bmatrix}$

2. $\begin{bmatrix} \sin\theta & -\cos\theta \\ \cos\theta & -\sin\theta \end{bmatrix}$

3. $\begin{bmatrix} -\cos\theta & \sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$

4. $\begin{bmatrix} \cos\theta & -\sin\theta \\ -\sin\theta & -\cos\theta \end{bmatrix}$

Question Type : MCQ

Question ID : 37135115779

Option 1 ID : 37135163116

Option 2 ID : 37135163115

Option 3 ID : 37135163114

Option 4 ID : 37135163113

Status : Answered

Chosen Option : 3

Q.21

$$\int_2^3 \frac{dx}{x^2 + x} =$$

Ans

1. $\log\left(\frac{3}{4}\right)$

2. $\log\left(\frac{3}{2}\right)$

3. $\log\left(\frac{9}{8}\right)$

4. $\log\left(\frac{8}{9}\right)$

Question Type : MCQ

Question ID : 37135115771

Option 1 ID : 37135163082

Option 2 ID : 37135163081

Option 3 ID : 37135163084

Option 4 ID : 37135163083

Status : Answered

Chosen Option : 2

Q.22

If $\sqrt{x} + \sqrt{y} = \sqrt{xy}$, then $\frac{dy}{dx} =$

Ans

✓ 1. $-\left(\frac{y}{x}\right)^{\frac{3}{2}}$

✗ 2. $\left(\frac{x}{y}\right)^{\frac{3}{2}}$

✗ 3. $-\left(\frac{x}{y}\right)^{\frac{3}{2}}$

✗ 4. $\left(\frac{y}{x}\right)^{\frac{3}{2}}$

Question Type : MCQ

Question ID : 37135115793

Option 1 ID : 37135163169

Option 2 ID : 37135163171

Option 3 ID : 37135163172

Option 4 ID : 37135163170

Status : Answered

Chosen Option : 4

Q.23

$$\int_0^a (a-x)^{\frac{3}{2}} \cdot x^2 dx =$$

Ans

1. $\frac{-16 a^{\frac{9}{2}}}{315}$

2. $\frac{16 a^{\frac{9}{2}}}{315}$

3. $\frac{16 a^{\frac{7}{2}}}{315}$

4. $\frac{-16 a^{\frac{7}{2}}}{315}$

Question Type : MCQ

Question ID : 37135115765

Option 1 ID : 37135163057

Option 2 ID : 37135163058

Option 3 ID : 37135163060

Option 4 ID : 37135163059

Status : Answered

Chosen Option : 2

Q.24

If the lines $\frac{1-x}{2} = \frac{y-8}{\lambda} = \frac{z-5}{2}$ and $\frac{x-11}{5} = \frac{y-3}{3} = \frac{z-1}{1}$ are perpendicular, then $\lambda =$

Ans

1. 4

2. -4

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

4. $\frac{-8}{3}$

Question Type : MCQ

Question ID : 37135115769

Option 1 ID : 37135163073

Option 2 ID : 37135163074

Option 3 ID : 37135163075

Option 4 ID : 37135163076

Status : Answered

Chosen Option : 3

Q.25

$$\sec 2\theta - \tan 2\theta =$$

Ans

✓_{1.} $\tan\left(\frac{\pi}{4} - \theta\right)$

✗_{2.} $\tan 2\theta$

✗_{3.} $\cot 2\theta$

✗_{4.} $\cot\left(\frac{\pi}{4} - \theta\right)$

Question Type : MCQ

Question ID : 37135115754

Option 1 ID : 37135163015

Option 2 ID : 37135163016

Option 3 ID : 37135163013

Option 4 ID : 37135163014

Status : Answered

Chosen Option : 1

Q.26 The area bounded by the curve $y = x^3$, the X-axis and the lines $x = 1$ and $x = 4$ is

Ans

1. $\frac{127}{4}$ sq. units

2. 64 sq. units

3. 27 sq. units

4. $\frac{255}{4}$ sq. units

Question Type : MCQ

Question ID : 37135115751

Option 1 ID : 37135163003

Option 2 ID : 37135163001

Option 3 ID : 37135163002

Option 4 ID : 37135163004

Status : Answered

Chosen Option : 4

Q.27 The displacement of a particle at time 't' is $s = t^3 - 4t^2 - 5t$, then the velocity of the particle at $t = 2$ sec. is

Ans

✗ 1. $\left(\frac{1}{9}\right)$ units/ sec.

✓ 2. -9 units/ sec.

✗ 3. 9 units/ sec.

✗ 4. $\left(\frac{-1}{9}\right)$ units/ sec.

Question Type : MCQ

Question ID : 37135115787

Option 1 ID : 37135163147

Option 2 ID : 37135163146

Option 3 ID : 37135163145

Option 4 ID : 37135163148

Status : Answered

Chosen Option : 2

Q.28

If $\tan A = \frac{5}{6}$, $\tan B = \frac{1}{11}$, then $A + B =$

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135115786

Option 1 ID : 37135163142

Option 2 ID : 37135163144

Option 3 ID : 37135163143

Option 4 ID : 37135163141

Status : Answered

Chosen Option : 4

Q.29

The eccentricity of the ellipse given by the equation $9x^2 + 16y^2 = 144$ is

Ans

✓ 1. $\frac{\sqrt{7}}{4}$

✗ 2. $\frac{1}{4}$

✗ 3. $\frac{\sqrt{3}}{4}$

✗ 4. $\frac{\sqrt{5}}{4}$

Question Type : MCQ

Question ID : 37135115777

Option 1 ID : 37135163105

Option 2 ID : 37135163108

Option 3 ID : 37135163107

Option 4 ID : 37135163106

Status : Answered

Chosen Option : 1

Q.30

$$\int \frac{dx}{(x+2)\sqrt{x+1}} =$$

Ans

1. $\tan^{-1}(\sqrt{x+1}) + c$

2. $2 \tan^{-1}(\sqrt{x+1}) + c$

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

4. $\tan^{-1}(\sqrt{x+2}) + c$

Question Type : **MCQ**

Question ID : **37135115778**

Option 1 ID : **37135163109**

Option 2 ID : **37135163110**

Option 3 ID : **37135163112**

Option 4 ID : **37135163111**

Status : **Answered**

Chosen Option : **2**

Q.31

If $f'(x) = k(\cos x + \sin x)$ and $f(0) = 9$, $f\left(\frac{\pi}{2}\right) = 15$, then $f(x) =$

Ans

✓₁. $3(\sin x - \cos x) + 12$

✗₂. $3(\sin x - \cos x) - 12$

✗₃. $3(\sin x + \cos x) + 12$

✗₄. $3(\cos x + \sin x) - 12$

Question Type : **MCQ**

Question ID : **37135115782**

Option 1 ID : **37135163128**

Option 2 ID : **37135163126**

Option 3 ID : **37135163125**

Option 4 ID : **37135163127**


Status : **Answered**


Chosen Option : **1**


Q.32


A multiple choice examination has 5 questions. Each question has three alternative answers of which exactly one is correct. The probability that a student will get at least one correct answer is

Ans

 1. $\frac{80}{243}$

 2. $\frac{32}{243}$

 3. $\frac{163}{243}$

 4. $\frac{211}{243}$

Question Type : MCQ

Question ID : 37135115755

Option 1 ID : 37135163019

Option 2 ID : 37135163018

Option 3 ID : 37135163020

Option 4 ID : 37135163017

Status : Answered

Chosen Option : 3

Q.33

If $y = \cot^{-1} \left(\sqrt{\frac{1-\sin x}{1+\sin x}} \right)$, then $\frac{dy}{dx} =$

Ans

✓_{1.} $\frac{1}{2}$

✗_{2.} -1

✗_{3.} $\frac{1}{3}$

✗_{4.} 1

Question Type : **MCQ**

Question ID : **37135115789**

Option 1 ID : **37135163153**

Option 2 ID : **37135163156**

Option 3 ID : **37135163154**

Option 4 ID : **37135163155**

Status : **Answered**

Chosen Option : **2**

Q.34 If $2 \sin^2 x + 7 \cos x = 5$, then permissible value of $\cos x$ is

Ans

✓^{1.} $\frac{1}{2}$

✗^{2.} 0

✗^{3.} 1

✗^{4.} $-\frac{1}{2}$

Question Type : MCQ

Question ID : 37135115797

Option 1 ID : 37135163187

Option 2 ID : 37135163186

Option 3 ID : 37135163188

Option 4 ID : 37135163185

Status : Answered

Chosen Option : 1

Q.35 The locus of a point of intersection of two lines $x\sqrt{3} - y = k\sqrt{3}$ and $\sqrt{3}kx + ky = \sqrt{3}$, $k \in R$, describes

Ans

- 1. a parabola
- 2. a hyperbola
- 3. an ellipse
- 4. a pair of lines

Question Type : MCQ

Question ID : 37135115790

Option 1 ID : 37135163158

Option 2 ID : 37135163159

Option 3 ID : 37135163160

Option 4 ID : 37135163157

Status : Answered

Chosen Option : 3

Q.36

If $f(x) = \frac{(e^{2x}-1)\sin x^0}{x^2}$, $x \neq 0$ is continuous at $x = 0$, then $f(0) =$

Ans

1. $\frac{90}{\pi}$

2. $\frac{180}{\pi}$

3. $\frac{\pi}{90}$

4. $\frac{\pi}{180}$

Question Type : MCQ

Question ID : 37135115798

Option 1 ID : 37135163192

Option 2 ID : 37135163191

Option 3 ID : 37135163190

Option 4 ID : 37135163189

Status : Answered

Chosen Option : 3

Q.37

The negation of the statement, $\exists x \in A$ such that $x + 5 > 8$ is

Ans

1. $\forall x \in A, x + 5 \geq 8$

2. $\forall x \in A, x + 5 \leq 8$

3. $\forall x \in A, x + 5 > 8$

4. $\exists x \in A$ such that $x + 5 < 8$

Question Type : **MCQ**

Question ID : **37135115791**

Option 1 ID : **37135163161**

Option 2 ID : **37135163164**

Option 3 ID : **37135163162**

Option 4 ID : **37135163163**

Status : **Answered**

Chosen Option : **2**

Q.38 The differential equation obtained by eliminating the arbitrary constants from the equation $y^2 = (2x + c)^5$ is

Ans

✗ 1. $\left(\frac{dy}{dx}\right)^4 - 625y^4 = 0$

✓ 2. $\left(\frac{dy}{dx}\right)^5 - 3125y^3 = 0$

✗ 3. $\left(\frac{dy}{dx}\right)^3 - 125y^3 = 0$

✗ 4. $xy \frac{dy}{dx} = 5$

Question Type : MCQ

Question ID : 37135115781

Option 1 ID : 37135163121

Option 2 ID : 37135163122

Option 3 ID : 37135163123

Option 4 ID : 37135163124

Status : Answered

Chosen Option : 2

Q.39

The feasible region of L. P. P.

Maximize $z = 70x + 50y$ subject to $8x + 5y \leq 60$, $4x + 5y \leq 40$ and $x \geq 0$, $y \geq 0$

is

Ans

- 1. a triangle
- 2. a square
- 3. a pentagon
- 4. a quadrilateral

Question Type : MCQ

Question ID : 37135115753

Option 1 ID : 37135163009

Option 2 ID : 37135163012

Option 3 ID : 37135163011

Option 4 ID : 37135163010

Status : Answered

Chosen Option : 4

Q.40

$$\int \frac{5^x}{\sqrt{5(-2x) - 5(2x)}} dx =$$

Ans

✗ 1. $\sin^{-1}(5^{2x}) + c$

✓ 2. $\frac{\sin^{-1}(5^{2x})}{\log 25} + c$

✗ 3. $\tan^{-1}(5^x) + c$

✗ 4. $\tan^{-1}(5^{2x}) \cdot \log 25 + c$

Question Type : MCQ

Question ID : 37135115774

Option 1 ID : 37135163096

Option 2 ID : 37135163094

Option 3 ID : 37135163093

Option 4 ID : 37135163095

Status : Answered

Chosen Option : 1

Q.41 The length of the perpendicular to the plane $\vec{r} \cdot (\hat{i} - 2\hat{j} + 3\hat{k}) = 14$ from the origin is

Ans

1. $\sqrt{7}$ units

2. 7 units

3. 14 units

4. $\sqrt{14}$ units

Question Type : MCQ

Question ID : 37135115762

Option 1 ID : 37135163048

Option 2 ID : 37135163047

Option 3 ID : 37135163045

Option 4 ID : 37135163046

Status : Answered

Chosen Option : 4

Q.42 The differential equation of the family of lines having x- intercept 'a' and y- intercept 'b' is

Ans

1. $\frac{d^2y}{dx^2} = -1$

2. $\frac{d^2y}{dx^2} = 10$

3. $\frac{d^2y}{dx^2} = 1$

4. $\frac{d^2y}{dx^2} = 0$

Question Type : MCQ

Question ID : 37135115757

Option 1 ID : 37135163026

Option 2 ID : 37135163028

Option 3 ID : 37135163025

Option 4 ID : 37135163027

Status : Answered

Chosen Option : 4

Q.43

Which of the following statement pattern is a contradiction ?

$$S_1 \equiv (p \rightarrow q) \wedge (p \wedge \sim q)$$

$$S_2 \equiv [p \wedge (p \rightarrow q)] \rightarrow q$$

$$S_3 \equiv (p \vee q) \rightarrow \sim p$$

$$S_4 \equiv [p \wedge (p \rightarrow q)] \leftrightarrow q$$

Ans

1. S_4

2. S_1

3. S_2

4. S_3

Question Type : MCQ

Question ID : 37135115796

Option 1 ID : 37135163184

Option 2 ID : 37135163181

Option 3 ID : 37135163182

Option 4 ID : 37135163183

Status : Answered

Chosen Option : 3

Q.44

The vector equation of the line $\frac{x+3}{2} = \frac{2y-3}{5}$; $z = -1$ is

Ans 1.

$$\bar{r} = (3\hat{i} - \frac{3}{2}\hat{j} - \hat{k}) + \lambda(4\hat{i} + 5\hat{j})$$

2.

$$\bar{r} = (-3\hat{i} + \frac{3}{2}\hat{j} - \hat{k}) + \lambda(4\hat{i} + 5\hat{j})$$

3.

$$\bar{r} = (-3\hat{i} + \frac{3}{2}\hat{j} + \hat{k}) + \lambda(4\hat{i} + 5\hat{j})$$

4.

$$\bar{r} = (3\hat{i} + \frac{3}{2}\hat{j} - \hat{k}) + \lambda(4\hat{i} + \frac{5}{2}\hat{j})$$

Question Type : MCQ

Question ID : 37135115772

Option 1 ID : 37135163087

Option 2 ID : 37135163085

Option 3 ID : 37135163086

Option 4 ID : 37135163088

Status : Answered

Chosen Option : 2

Q.45

$$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin^2 x \, dx =$$

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135115773

Option 1 ID : 37135163089

Option 2 ID : 37135163092

Option 3 ID : 37135163090

Option 4 ID : 37135163091

Status : Answered

Chosen Option : 3

Q.46 If the acute angle between the lines $x^2 - 4xy + y^2 = 0$ is $\tan^{-1}(k)$, then $k =$

Ans

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

2. $\sqrt{3}$

3. $\frac{1}{6}$

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

Question Type : MCQ

Question ID : 37135115766

Option 1 ID : 37135163061

Option 2 ID : 37135163062

Option 3 ID : 37135163063

Option 4 ID : 37135163064

Status : Answered

Chosen Option : 2

Q.47 If P (3, 2, 6), Q (1, 4, 5) and R (3, 5, 3) are the vertices of ΔPQR , then $m \angle PQR$ is

Ans

✓ 1. 90°

✗ 2. 50°

✗ 3. 70°

✗ 4. 30°

Question Type : **MCQ**

Question ID : **37135115795**

Option 1 ID : **37135163177**

Option 2 ID : **37135163180**

Option 3 ID : **37135163179**

Option 4 ID : **37135163178**

Status : **Answered**

Chosen Option : **1**

Q.48 The line cuts X and Y axes at the points A and B respectively. The point (5, 6) divides the line segment AB internally in the ratio 3:1, then equation of line is

Ans

1. $2x + y = 16$

2. $2x + 5y = 40$

3. $2x - y = 4$

4. $2x - 5y = -20$

Question Type : **MCQ**

Question ID : **37135115770**

Option 1 ID : **37135163079**

Option 2 ID : **37135163078**

Option 3 ID : **37135163080**

Option 4 ID : **37135163077**

Status : **Answered**

Chosen Option : **3**

Q.49

If $f(x) = \frac{4x+7}{7x-4}$, then the value of $f\{f[f(2)]\} =$

Ans

✓ 1. $\frac{3}{2}$

✗ 2. $\frac{2}{3}$

✗ 3. $\frac{35}{39}$

✗ 4. $\frac{39}{35}$

Question Type : MCQ

Question ID : 37135115764

Option 1 ID : 37135163054

Option 2 ID : 37135163053

Option 3 ID : 37135163056

Option 4 ID : 37135163055

Status : Answered

Chosen Option : 1

Q.50 If $3\cos x \neq 2\sin x$, then the general solution of $\sin^2 x - \cos 2x = 2 - \sin 2x$ is

Ans

✓_{1.} $x = n\pi + \frac{\pi}{2}, n \in Z$

✗_{2.} $x = n\left(\frac{\pi}{2}\right) + \pi, n \in Z$

✗_{3.} $x = n\left(\frac{\pi}{2}\right) + \frac{\pi}{3}, n \in Z$

✗_{4.} $x = (2n + 1)\pi, n \in Z$

Question Type : **MCQ**

Question ID : **37135115775**

Option 1 ID : **37135163098**

Option 2 ID : **37135163100**

Option 3 ID : **37135163099**

Option 4 ID : **37135163097**

Status : **Answered**

Chosen Option : **1**