

Q.1 Two rings of radius 'R' and 'nR' made of same material have the ratio of moment of inertia about an axis passing through its centre and perpendicular to the plane as 1:8. The value of 'n' is (mass per unit length is constant)

Ans

1. 1

2. 3

3. 4

4. 2

Question Type : **MCQ**

Question ID : 37135116136

Option 1 ID : 37135164544

Option 2 ID : 37135164542

Option 3 ID : 37135164541

Option 4 ID : 37135164543

Status : **Answered**

Chosen Option : 4

Q.2 Two wires of same length and material are stretched by same force. If their masses are in the ratio 3:4, then the ratio of their elongations is

Ans

✓ 1. $\frac{4}{3}$

✗ 2. $\frac{5}{3}$

✗ 3. $\frac{1}{3}$

✗ 4. $\frac{2}{3}$

Question Type : MCQ

Question ID : 37135116109

Option 1 ID : 37135164433

Option 2 ID : 37135164436

Option 3 ID : 37135164435

Option 4 ID : 37135164434

Status : Answered

Chosen Option : 1

Q.3 Two open organ pipes of fundamental frequencies n_1 and n_2 are joined in series. The fundamental frequency of the new pipe is

Ans

✗ 1. $n_1 - n_2$

✓ 2. $\frac{n_1 n_2}{(n_1 + n_2)}$

✗ 3. $\frac{1}{n_1 n_2}$

✗ 4. $\frac{n_1 + n_2}{n_1 n_2}$

Question Type : MCQ

Question ID : 37135116112

Option 1 ID : 37135164446

Option 2 ID : 37135164445

Option 3 ID : 37135164448

Option 4 ID : 37135164447

Status : Answered

Chosen Option : 2

Q.4 An electron is projected along the axis of circular conductor carrying current I . Electron will experience

Ans 1.

a force at an angle of 30° with the axis .

2. no force.

3. a force along the axis.

4.

a force perpendicular to the axis.

Question Type : **MCQ**

Question ID : **37135116148**

Option 1 ID : **37135164590**

Option 2 ID : **37135164591**

Option 3 ID : **37135164589**

Option 4 ID : **37135164592**

Status : **Answered**

Chosen Option : **2**

Q.5 For which logic gate the following statement is true? The output is high if and only if all inputs are high.

Ans

1. **AND**

2. **OR**

3. **NOR**

4. **NAND**

Question Type : **MCQ**

Question ID : **37135116146**

Option 1 ID : **37135164583**

Option 2 ID : **37135164581**

Option 3 ID : **37135164584**

Option 4 ID : **37135164582**

Status : **Answered**

Chosen Option : **2**

Q.6 A coil of radius 'r' is placed on another coil (whose radius is 'R' and current flowing through it is changing) so that their centres coincide. ($R \gg r$) If both the coils are coplanar then the mutual inductance between them is proportional to

Ans

1. $\frac{r}{R}$

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

3. $\frac{R}{r^2}$

4. $\frac{r^2}{R}$

Question Type : **MCQ**

Question ID : 37135116133

Option 1 ID : 37135164532

Option 2 ID : 37135164531

Option 3 ID : 37135164530

Option 4 ID : 37135164529

Status : **Answered**

Chosen Option : 2

Q.7 A ray of light travels from air to water to glass and again from glass to air. Refractive index of water with respect to air is 'x', glass with respect to water is 'y' and air with respect to glass is 'z'. Which one of the following is correct?

Ans

1. $xz = y$

2. $yz = x$

3. $xyz = 1$

4. $xy = z$

Question Type : **MCQ**

Question ID : 37135116103

Option 1 ID : 37135164411

Option 2 ID : 37135164412

Option 3 ID : 37135164409

Option 4 ID : 37135164410

Status : **Answered**

Chosen Option : 2

Q.8 The magnetic field due to a short bar magnet at an axial point at a distance 'r' from its centre is 'B'. If this axis is moved towards the equator of the magnet along a circular path of radius 'r' then the magnetic field 'B' will

Ans

- 1. not change.
- 2. go on increasing.
- 3. increase from zero to infinity.
- 4. go on decreasing.

Question Type : **MCQ**

Question ID : 37135116118

Option 1 ID : 37135164469

Option 2 ID : 37135164470

Option 3 ID : 37135164472

Option 4 ID : 37135164471

Status : **Answered**

Chosen Option : 4

Q.9 Two stones of masses m and 3m are whirled in horizontal circles, the heavier one in radius $\left(\frac{r}{3}\right)$ and lighter one in radius 'r'. The tangential speed of lighter stone is 'n' times that of the value of heavier stone, when they experience same centripetal force. The value of n is

Ans

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

Question Type : **MCQ**

Question ID : 37135116128

Option 1 ID : 37135164510

Option 2 ID : 37135164511

Option 3 ID : 37135164509

Option 4 ID : 37135164512

Status : **Answered**

Chosen Option : 2

Q.10 When a resistance of 200Ω is connected in series with a galvanometer of resistance 'G', its range is 'V'. To triple its range, a resistance of 2000Ω is connected in series. The value of G is

Ans

✓ 1. 700Ω

✗ 2. 900Ω

✗ 3. 400Ω

✗ 4. 600Ω

Question Type : MCQ

Question ID : 37135116123

Option 1 ID : 37135164491

Option 2 ID : 37135164492

Option 3 ID : 37135164489

Option 4 ID : 37135164490

Status : Answered

Chosen Option : 1

Q.11 The displacement of the particle executing linear S.H.M. is $x = 0.25 \sin(11t + 0.5)$ m.
The period of S.H.M. is $(\pi = \frac{22}{7})$

Ans

✗ 1. $\frac{2}{7}$ S

✓ 2. $\frac{4}{7}$ S

✗ 3. $\frac{3}{7}$ S

✗ 4. $\frac{1}{7}$ S

Question Type : MCQ

Question ID : 37135116113

Option 1 ID : 37135164452

Option 2 ID : 37135164450

Option 3 ID : 37135164451

Option 4 ID : 37135164449

Status : Answered

Chosen Option : 2

Q.12 Let the inductance and resistance be denoted by 'L' and 'R' respectively. The dimensions of $\left(\frac{L}{R}\right)$ are

Ans

✗ 1. $[L^1 M^0 T^1]$

✗ 2. $[L^0 M^0 T^0]$

✗ 3. $[L^0 M^1 T^0]$

✓ 4. $[L^0 M^0 T^1]$

Question Type : MCQ

Question ID : 37135116117

Option 1 ID : 37135164468

Option 2 ID : 37135164465

Option 3 ID : 37135164467

Option 4 ID : 37135164466

Status : Answered

Chosen Option : 4

Q.13 The moment of inertia of a thin uniform rod about a perpendicular axis passing through one of its ends is 'I'. Now, the rod is bent in a ring and its moment of inertia about diameter is 'I₁'. Then $\frac{I}{I_1}$ is

Ans

✓ 1. $\frac{8\pi^2}{3}$

✗ 2. $\frac{11\pi^2}{3}$

✗ 3. $\frac{4\pi^2}{3}$

✗ 4. $\frac{\pi^2}{3}$

Question Type : MCQ

Question ID : 37135116121

Option 1 ID : 37135164483

Option 2 ID : 37135164484

Option 3 ID : 37135164482

Option 4 ID : 37135164481

Status : Answered

Chosen Option : 1



Q.14

Heat is applied to a rigid diatomic gas at constant pressure. The ratio $\Delta Q : \Delta U : \Delta W$ is

Ans

1. 5 : 7 : 2

2. 7 : 5 : 2

3. 2 : 5 : 7

4. 5 : 2 : 7

Question Type : MCQ

Question ID : 37135116143

Option 1 ID : 37135164572

Option 2 ID : 37135164571

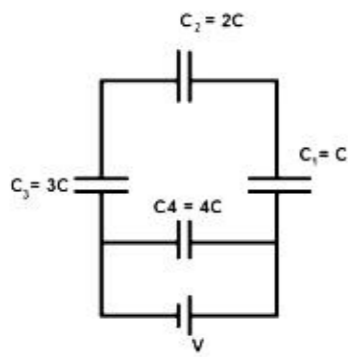
Option 3 ID : 37135164569

Option 4 ID : 37135164570

Status : Answered

Chosen Option : 2

Q.15 A network of 4 capacitors is connected to a battery as shown. The ratio of the charges on capacitors C_2 and C_4 is



Ans

1. $\frac{3}{13}$

2. $\frac{3}{19}$

3. $\frac{3}{17}$

4. $\frac{3}{22}$

Question Type : **MCQ**

Question ID : 37135116110

Option 1 ID : 37135164440

Option 2 ID : 37135164438

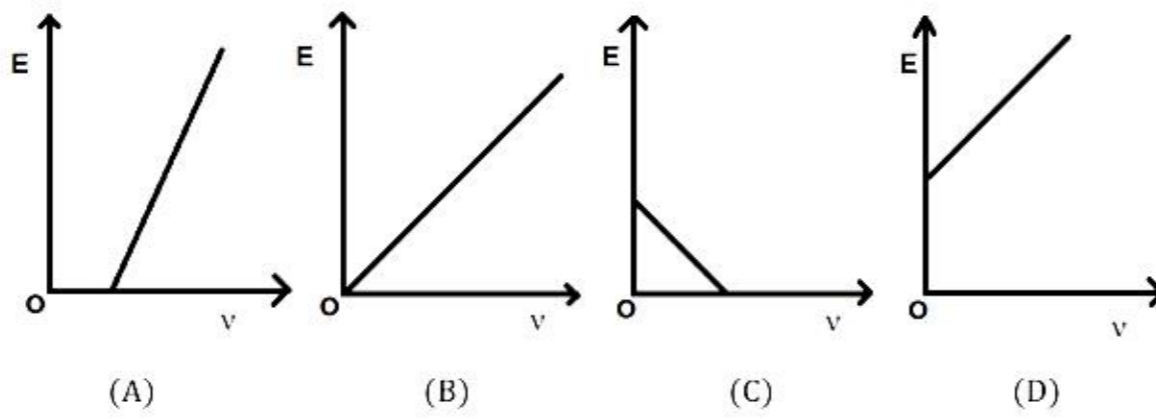
Option 3 ID : 37135164439

Option 4 ID : 37135164437

Status : **Answered**

Chosen Option : 1

Q.16 Using Einstein's photoelectric equation, the graph between the K.E.(E) of photoelectrons emitted and the frequency of incident radiation (ν) is shown correctly in figure



Ans

1. (C)

2. (A)

3. (D)

4. (B)

Question Type : MCQ

Question ID : 37135116111

Option 1 ID : 37135164443

Option 2 ID : 37135164441

Option 3 ID : 37135164444

Option 4 ID : 37135164442

Status : Answered

Chosen Option : 2

Q.17 A body initially at rest is acted upon by a constant force (F) for time (t). The kinetic energy at time t is

Ans

1. $\frac{F^2 t^2}{m}$

2. $\left(\frac{Ft}{m}\right)^2$

3. $\frac{Ft}{2m}$

4. $\frac{F^2 t^2}{2m}$

Question Type : **MCQ**

Question ID : 37135116127

Option 1 ID : 37135164505

Option 2 ID : 37135164508

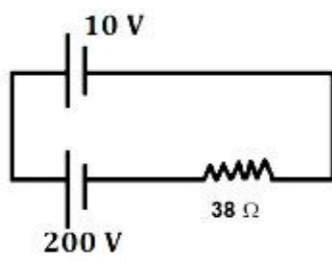
Option 3 ID : 37135164507

Option 4 ID : 37135164506

Status : **Answered**

Chosen Option : 3

Q.18 Using Kirchhoff's law, find the current flowing through the given circuit.



Ans

1. 7.5 A

2. 5 A

3. 10 A

4. 3 A

Question Type : MCQ

Question ID : 37135116108

Option 1 ID : 37135164430

Option 2 ID : 37135164431

Option 3 ID : 37135164429

Option 4 ID : 37135164432

Status : Answered

Chosen Option : 2

Q.19 One thousand small water drops of equal radii combine to form a big drop. The ratio of final surface energy to the total initial surface energy is

Ans

1. 1 : 1000

2. 1 : 1

3. 1 : 10

4. 1 : 100

Question Type : MCQ

Question ID : 37135116132

Option 1 ID : 37135164528

Option 2 ID : 37135164526

Option 3 ID : 37135164525

Option 4 ID : 37135164527

Status : Answered

Chosen Option : 4

Q.20 Let the r.m.s. velocity of molecule of a given mass of gas be C_1 at temperature 27°C .
When the temperature is increased to 327°C , the r.m.s. velocity is C_2 . Then the ratio $\frac{C_2}{C_1}$
is

Ans

✓ 1. $\sqrt{2}$

✗ 2. 2

✗ 3. 4

✗ 4. $2\sqrt{2}$

Question Type : **MCQ**

Question ID : 37135116119

Option 1 ID : 37135164473

Option 2 ID : 37135164474

Option 3 ID : 37135164476

Option 4 ID : 37135164475

Status : **Answered**

Chosen Option : 1

Q.21 In the case of spherical mirrors, the images formed on the side of the object and images
formed on the opposite side are respectively

Ans

✗ 1. virtual and real.

✗ 2. virtual and virtual.

✗ 3. real and real.

✓ 4. real and virtual.

Question Type : **MCQ**

Question ID : 37135116135

Option 1 ID : 37135164539

Option 2 ID : 37135164540

Option 3 ID : 37135164538

Option 4 ID : 37135164537

Status : **Answered**

Chosen Option : 4

Q.22 The refractive index of the medium is $\mu = A + \frac{B}{\lambda^2}$, where A and B are constants and λ is the wavelength of light. The dimensions of B are same as that of

Ans

1. velocity.

2. area.

3. wavelength.

4. volume.

Question Type : MCQ

Question ID : 37135116138

Option 1 ID : 37135164552

Option 2 ID : 37135164550

Option 3 ID : 37135164549

Option 4 ID : 37135164551

Status : Answered

Chosen Option : 2

Q.23 In potentiometer experiment, cells of e.m.f. E_1 and E_2 are connected in series ($E_1 > E_2$), the balancing length is 64 cm of the wire. If the polarity of E_2 is reversed, the balancing length becomes 32 cm. The ratio $\frac{E_1}{E_2}$ is

Ans

1. 1 : 2

2. 2 : 1

3. 1 : 3

4. 3 : 1

Question Type : MCQ

Question ID : 37135116126

Option 1 ID : 37135164501

Option 2 ID : 37135164502

Option 3 ID : 37135164504

Option 4 ID : 37135164503

Status : Answered

Chosen Option : 4

Q.24 According to theoretical study of radiation from a same linear antenna, the power radiated is proportional to [λ = wavelength]

Ans

✓ 1. λ^{-2}

✗ 2. λ^{-1}

✗ 3. λ^2

✗ 4. λ

Question Type : MCQ

Question ID : 37135116144

Option 1 ID : 37135164573

Option 2 ID : 37135164576

Option 3 ID : 37135164574

Option 4 ID : 37135164575

Status : Answered

Chosen Option : 2

Q.25 The excess pressure inside the first soap bubble of radius ' R_1 ' is two times, that inside the second soap bubble of radius ' R_2 '. The ratio of volumes of the first bubble to that of second bubble is

Ans

✗ 1. 1 : 4

✗ 2. 1 : 1

✗ 3. 1 : 2

✓ 4. 1 : 8

Question Type : MCQ

Question ID : 37135116147

Option 1 ID : 37135164586

Option 2 ID : 37135164588

Option 3 ID : 37135164587

Option 4 ID : 37135164585

Status : Answered

Chosen Option : 4

Q.26 A double slit experiment is immersed in water of refractive index 1.33. The slit separation is 1 mm, distance between slit and screen is 1.33 m. The slits are illuminated by a light of wavelength 6300 Å. The fringewidth is

Ans

1. $6.9 \times 10^{-4} \text{ m}$

2. $6.3 \times 10^{-4} \text{ m}$

3. $5.8 \times 10^{-4} \text{ m}$

4. $8.6 \times 10^{-4} \text{ m}$

Question Type : **MCQ**

Question ID : **37135116145**

Option 1 ID : **37135164580**

Option 2 ID : **37135164577**

Option 3 ID : **37135164578**

Option 4 ID : **37135164579**

Status : **Answered**

Chosen Option : **2**

Q.27 The angle between two forces of equal magnitude R, if the magnitude of their resultant is $\frac{R}{2}$, is

Ans

✓ 1. $\cos^{-1}\left(-\frac{7}{8}\right)$

✗ 2. $\cos^{-1}\left(-\frac{5}{7}\right)$

✗ 3. $\cos^{-1}\left(-\frac{3}{7}\right)$

✗ 4. $\cos^{-1}\left(-\frac{3}{4}\right)$

Question Type : MCQ

Question ID : 37135116140

Option 1 ID : 37135164557

Option 2 ID : 37135164558

Option 3 ID : 37135164560

Option 4 ID : 37135164559

Status : Answered

Chosen Option : 1

Q.28 Two wires of same material are vibrating under the same tension. If the first overtone of first wire is equal to the second overtone of second wire and radius of first wire is twice the radius of the second then the ratio of length of first wire to second wire is

Ans

✓ 1. 1 : 3

✗ 2. 1 : 2

✗ 3. 2 : 1

✗ 4. 3 : 1

Question Type : MCQ

Question ID : 37135116149

Option 1 ID : 37135164593

Option 2 ID : 37135164594

Option 3 ID : 37135164596

Option 4 ID : 37135164595

Status : Answered

Chosen Option : 3

Q.29

If the number of turns in the coil of galvanometer are decreased then the resistance of galvanometer

Ans

- 1. may increase or decrease.
- 2. increases.
- 3. remains the same
- 4. decreases.

Question Type : MCQ

Question ID : 37135116120

Option 1 ID : 37135164480

Option 2 ID : 37135164478

Option 3 ID : 37135164479

Option 4 ID : 37135164477

Status : Answered

Chosen Option : 3

Q.30

Let M and L be the mass and length of thin uniform rod respectively. In 1st case, axis of rotation is passing through centre and perpendicular to its length. In 2nd case, axis of rotation is passing through one end and perpendicular to its length. The ratio of radius of gyration in first case to second case is

Ans

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

Question Type : MCQ

Question ID : 37135116114

Option 1 ID : 37135164456

Option 2 ID : 37135164453

Option 3 ID : 37135164455

Option 4 ID : 37135164454

Status : Answered

Chosen Option : 2

Q.31 The magnetic moment produced in a sample of 2 gram is $8 \times 10^{-7} \text{ A/m}^2$. If its density is 4 g/cm^3 , then the magnetization of the sample is

Ans

1. 1.2

2. 1.8

3. 1.4

4. 1.6

Question Type : **MCQ**

Question ID : **37135116131**

Option 1 ID : **37135164521**

Option 2 ID : **37135164524**

Option 3 ID : **37135164522**

Option 4 ID : **37135164523**

Status : **Answered**

Chosen Option : **4**

Q.32 A sonometer wire resonates with a given tuning fork forming standing wave with 5 antinodes between two bridges when mass of 9 kg is suspended from the wire. When mass 'm' is suspended from the wire, with same fork and same length between two bridges 3 antinodes are formed. Mass M is

Ans

1. 25 kg

2. 20 kg

3. 15 kg

4. 10 kg

Question Type : **MCQ**

Question ID : **37135116115**

Option 1 ID : **37135164457**

Option 2 ID : **37135164458**

Option 3 ID : **37135164459**

Option 4 ID : **37135164460**

Status : **Answered**

Chosen Option : **1**

Q.33 In any Bohr orbit of hydrogen atom, the ratio of K.E to P.E of revolving electron at a distance 'r' from the nucleus is

Ans

1. -1

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

3. 1

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

Question Type : MCQ

Question ID : 37135116122

Option 1 ID : 37135164487

Option 2 ID : 37135164488

Option 3 ID : 37135164486

Option 4 ID : 37135164485

Status : Answered

Chosen Option : 4

Q.34 A vector \vec{A} when added to the sum of the vectors $(\hat{i} - 2\hat{j} + 2\hat{k})$ and $(-2\hat{i} + \hat{j} - \hat{k})$ gives a unit vector along y-axis. The magnitude of the vector \vec{A} is

Ans

1. $\sqrt{3}$

2. $\sqrt{6}$

3. $\sqrt{8}$

4. $\sqrt{10}$

Question Type : MCQ

Question ID : 37135116124

Option 1 ID : 37135164493

Option 2 ID : 37135164494

Option 3 ID : 37135164495

Option 4 ID : 37135164496

Status : Answered

Chosen Option : 2

Q.35 The angular speed of the minute hand of a clock in degrees per second is

Ans

✗ 1. 0.01

✓ 2. 0.1

✗ 3. 1

✗ 4. 10

Question Type : MCQ

Question ID : 37135116107

Option 1 ID : 37135164427

Option 2 ID : 37135164426

Option 3 ID : 37135164425

Option 4 ID : 37135164428

Status : Answered

Chosen Option : 3

Q.36

An air filled parallel plate capacitor has a uniform electric field 'E' in the space between the plates. If the distance between the plates is 'd' and area of each plate is 'A', the energy stored in the capacitor is (ϵ_0 = permittivity of free space)

Ans

✓ 1. $\frac{1}{2} \epsilon_0 E^2 Ad$

✗ 2. $E^2 \frac{Ad}{\epsilon_0}$

✗ 3. $\frac{1}{2} \epsilon_0 E^2$

✗ 4. $\epsilon_0 E Ad$

Question Type : MCQ

Question ID : 37135116139

Option 1 ID : 37135164555

Option 2 ID : 37135164556

Option 3 ID : 37135164553

Option 4 ID : 37135164554

Status : Answered

Chosen Option : 1

Q.37 The escape velocity from the surface of earth of mass 'M' and radius 'R' is ' V_e '. The escape velocity from the surface of a planet whose mass and radius are 3 times that of the earth, will be

Ans

1. $9 V_e$

2. $3 V_e$

3. V_e

4. $12 V_e$

Question Type : **MCQ**

Question ID : 37135116130

Option 1 ID : 37135164519

Option 2 ID : 37135164518

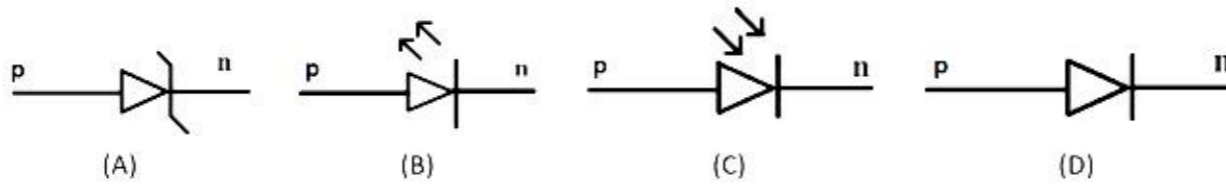
Option 3 ID : 37135164517

Option 4 ID : 37135164520

Status : **Answered**

Chosen Option : 3

Q.38 Which one of the following symbols represents a photodiode ?



Ans

1. (B)

2. (A)

3. (C)

4. (D)

Question Type : **MCQ**

Question ID : 37135116105

Option 1 ID : 37135164418

Option 2 ID : 37135164417

Option 3 ID : 37135164419

Option 4 ID : 37135164420

Status : **Answered**

Chosen Option : 2

Q.39

An electron and photon are accelerated through the same potential difference. The ratio of the de-Broglie wavelength λ_p to λ_e is [m_e = mass of electron, m_p = mass of proton]

Ans

1. $\left(\frac{m_p}{m_e}\right)^{\frac{1}{2}}$

2. $\left(\frac{m_e}{m_p}\right)^{\frac{1}{2}}$

3. $\left(\frac{m_e}{m_p}\right)$

4. $\left(\frac{m_p}{m_e}\right)$

Question Type : MCQ

Question ID : 37135116141

Option 1 ID : 37135164564

Option 2 ID : 37135164561

Option 3 ID : 37135164563

Option 4 ID : 37135164562

Status : Answered

Chosen Option : 2

Q.40

The ratio of frequencies of oscillations of two simple pendulums is 3 : 4, then their lengths are in the ratio

Ans

1. 16 : 9

2. 9 : 16

3. $\sqrt{3} : \sqrt{4}$

4. $\sqrt{4} : \sqrt{3}$

Question Type : MCQ

Question ID : 37135116142

Option 1 ID : 37135164568

Option 2 ID : 37135164567

Option 3 ID : 37135164565

Option 4 ID : 37135164566

Status : Answered

Chosen Option : 2



Q.41 Two coherent sources of intensities I_1 and I_2 produce an interference pattern on screen.
The maximum intensity in the interference pattern is

Ans

✓^{1.} $[\sqrt{I_1} + \sqrt{I_2}]^2$

✗^{2.} $I_1 + I_2$

✗^{3.} $(I_1 + I_2)^2$

✗^{4.} $I_1^2 + I_2^2$

Question Type : **MCQ**

Question ID : **37135116104**

Option 1 ID : **37135164413**

Option 2 ID : **37135164414**

Option 3 ID : **37135164416**

Option 4 ID : **37135164415**

Status : **Answered**

Chosen Option : **1**

Q.42 A metal surface having work function ' w_0 ' emits photoelectrons when photons of energy ' E ' are incident on it. The electron enters the uniform magnetic field (B) in perpendicular direction and moves in circular path of radius ' r '. Then ' r ' is equal to (m and e be the mass and charge of electron respectively).

Ans

1.
$$\frac{\sqrt{m(E-w_0)}}{eB}$$

2.
$$\frac{m(E-w_0)}{eB}$$

3.
$$\frac{\sqrt{2m(E-w_0)}}{eB}$$

4.
$$\frac{2m(E-w_0)}{eB}$$

Question Type : **MCQ**

Question ID : **37135116150**

Option 1 ID : **37135164598**

Option 2 ID : **37135164599**

Option 3 ID : **37135164600**

Option 4 ID : **37135164597**

Status : **Answered**

Chosen Option : **4**

Q.43 A large vessel completely filled with water has two holes 'A' and 'B' at depths 'h' and '4h' from the top. Hole 'A' is a square of side 'L' and hole 'B' is circle of radius 'R'. If from both the holes same quantity of water is flowing per second, then side of square hole is

Ans

1. $2\pi R$

2. $\sqrt{2\pi R}$

3. $\sqrt{2\pi} \cdot R$

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

Question Type : **MCQ**

Question ID : **37135116106**

Option 1 ID : **37135164421**

Option 2 ID : **37135164422**

Option 3 ID : **37135164423**

Option 4 ID : **37135164424**

Status : **Answered**

Chosen Option : **3**

Q.44 A progressive wave of frequency 50 Hz is travelling with velocity 350 m/s through a medium. The change in phase at a given time interval of 0.01 s is

Ans

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

2. π rad

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

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

Question Type : **MCQ**

Question ID : **37135116102**

Option 1 ID : **37135164406**

Option 2 ID : **37135164407**

Option 3 ID : **37135164405**

Option 4 ID : **37135164408**

Status : **Answered**

Chosen Option : **2**

Q.45 A small mass 'm' is suspended at the end of a wire having (negligible mass) length 'L' and cross-sectional area 'A'. The frequency of oscillation for the S.H.M. along the vertical line is (Y = Young's modulus of the wire)

Ans

✓ 1. $\frac{1}{2\pi} \left(\frac{YA}{mL} \right)^{\frac{1}{2}}$

✗ 2. $\frac{2\pi YA}{mL}$

✗ 3. $\frac{YA}{2\pi mL}$

✗ 4. $2\pi \left(\frac{YA}{mL} \right)^{\frac{1}{2}}$

Question Type : **MCQ**

Question ID : **37135116129**

Option 1 ID : **37135164513**

Option 2 ID : **37135164516**

Option 3 ID : **37135164515**

Option 4 ID : **37135164514**

Status : **Answered**

Chosen Option : **1**

Q.46 A satellite of mass 'm', revolving round the earth of radius 'r' has kinetic energy (E).
Its angular momentum is

Ans

1. $(mEr^2)^{\frac{1}{2}}$

2. (mEr^2)

3. $(2mEr^2)^{\frac{1}{2}}$

4. $(2mEr^2)$

Question Type : **MCQ**

Question ID : **37135116116**

Option 1 ID : **37135164462**

Option 2 ID : **37135164464**

Option 3 ID : **37135164461**

Option 4 ID : **37135164463**

Status : **Answered**

Chosen Option : **4**

Q.47 The density and bulk modulus of a metal bar is ' ρ ' and ' K ' respectively. When pressure ' P ' is applied from all sides to that metal bar, the increase in its density is

Ans

1. $\frac{\rho P}{(K+P)}$

2. $\frac{\rho P}{(K-P)}$

3. $\frac{K-P}{\rho}$

4. $\frac{K+P}{\rho}$

Question Type : MCQ

Question ID : 37135116125

Option 1 ID : 37135164497

Option 2 ID : 37135164498

Option 3 ID : 37135164499

Option 4 ID : 37135164500

Status : Answered

Chosen Option : 1

Q.48 When light enters glass from vacuum then the wavelength of light

Ans

1. remains constant.

2. becomes zero.

3. decreases.

4. increases.

Question Type : MCQ

Question ID : 37135116137

Option 1 ID : 37135164546

Option 2 ID : 37135164545

Option 3 ID : 37135164548

Option 4 ID : 37135164547

Status : Answered

Chosen Option : 2

Q.49 An electron revolving in circular orbit of radius 'r' with velocity 'V' and frequency 'v' has orbital magnetic moment 'M'. If the frequency of revolution is doubled then the new magnetic moment will be

Ans

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

2. $2M$

3. M

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

Question Type : **MCQ**

Question ID : **37135116101**

Option 1 ID : **37135164401**

Option 2 ID : **37135164404**

Option 3 ID : **37135164403**

Option 4 ID : **37135164402**

Status : **Answered**

Chosen Option : **3**

Q.50 The motion of a rocket in upward direction with high speed is based on the principle of conservation of

Ans

1. kinetic energy.

2. mass.

3. angular momentum.

4. linear momentum.

Question Type : **MCQ**

Question ID : **37135116134**

Option 1 ID : **37135164534**

Option 2 ID : **37135164533**

Option 3 ID : **37135164536**

Option 4 ID : **37135164535**

Status : **Answered**

Chosen Option : **4**

Q.1 What is the cell constant of $\frac{N}{10}$ KCl solution at 25°C, if conductivity and resistance of a solution is $0.0112 \Omega^{-1}\text{cm}^{-1}$ and 55.0Ω respectively?

Ans

✓ 1. 0.616 cm^{-1}

✗ 2. 0.491 cm^{-1}

✗ 3. 2.0 cm^{-1}

✗ 4. 0.2 cm^{-1}

Question Type : MCQ

Question ID : 37135116198

Option 1 ID : 37135164791

Option 2 ID : 37135164792

Option 3 ID : 37135164790

Option 4 ID : 37135164789

Status : Answered

Chosen Option : 1

Q.2 Which among the following complexes is a heteroleptic and cationic in nature?

Ans

✗ 1. $[\text{Ni}(\text{CO})_4]$

✓ 2. $[\text{Co}(\text{NH}_3)_4\text{Cl}_2] \text{Cl}$

✗ 3. $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$

✗ 4. $\text{K}_4 [\text{Fe}(\text{CN})_6]$

Question Type : MCQ

Question ID : 37135116162

Option 1 ID : 37135164648

Option 2 ID : 37135164645

Option 3 ID : 37135164647

Option 4 ID : 37135164646

Status : Answered

Chosen Option : 2



Q.3 A certain mass of a gas occupies a volume of 2 dm^3 at STP. At what temperature the volume of gas becomes double, keeping the pressure constant?

Ans

1. $540 \cdot 15^\circ \text{C}$

2. $400 \cdot 15^\circ \text{C}$

3. $546 \cdot 15^\circ \text{C}$

4. $273 \cdot 15^\circ \text{C}$

Question Type : **MCQ**

Question ID : 37135116170

Option 1 ID : 37135164679

Option 2 ID : 37135164680

Option 3 ID : 37135164677

Option 4 ID : 37135164678

Status : **Answered**

Chosen Option : 4

Q.4 Which type of overlap is involved in formation of O - H bonds in water molecule?

Ans

1. $sp^2 - p$

2. $sp^3 - s$

3. $sp - s$

4. $sp^2 - s$

Question Type : **MCQ**

Question ID : 37135116187

Option 1 ID : 37135164748

Option 2 ID : 37135164745

Option 3 ID : 37135164747

Option 4 ID : 37135164746

Status : **Answered**

Chosen Option : 2

Q.5 The compound which causes antidepressant action on central nervous system is

Ans

- ✓ 1. phenelzine
- ✗ 2. penicillin
- ✗ 3. chloroxylenol
- ✗ 4. terpineol

Question Type : MCQ

Question ID : 37135116192

Option 1 ID : 37135164766

Option 2 ID : 37135164767

Option 3 ID : 37135164765

Option 4 ID : 37135164768

Status : Answered

Chosen Option : 2

Q.6 When Butan - 2 -ol is dehydrated using sulphuric acid, the concentration of acid and temperature needed respectively is

Ans

- ✓ 1. 60 % conc. and 373 K
- ✗ 2. 20 % conc. and 373 K
- ✗ 3. 20 % conc. and 363 K
- ✗ 4. 95 % conc. and 373 K

Question Type : MCQ

Question ID : 37135116180

Option 1 ID : 37135164719

Option 2 ID : 37135164717

Option 3 ID : 37135164718

Option 4 ID : 37135164720

Status : Answered

Chosen Option : 2

Q.7 Identify correct decreasing order of ionic radii of lanthanoids.

Ans

1. $\text{Sm} > \text{Gd} > \text{Ce} > \text{Pm}$

2. $\text{Gd} > \text{Pm} > \text{Ce} > \text{Sm}$

3. $\text{Ce} > \text{Pm} > \text{Sm} > \text{Gd}$

4. $\text{Pm} > \text{Sm} > \text{Ce} > \text{Gd}$

Question Type : MCQ

Question ID : 37135116168

Option 1 ID : 37135164672

Option 2 ID : 37135164669

Option 3 ID : 37135164670

Option 4 ID : 37135164671

Status : Answered

Chosen Option : 4

Q.8 Which among the following reagents is used for conversion of glucose to glucoxime?

Ans

1. HCN

2. Br_2 water

3. Hydroxylamine

4. dilute Nitric acid

Question Type : MCQ

Question ID : 37135116200

Option 1 ID : 37135164797

Option 2 ID : 37135164798

Option 3 ID : 37135164799

Option 4 ID : 37135164800

Status : Answered

Chosen Option : 3

Q.9 What is the relative rate of SN^1 reaction for $(\text{CH}_3)_2\text{CH-Br}$?

Ans

1. 10^6

2. Less than 10^{-4}

3. 0.02

4. 1.0

Question Type : MCQ

Question ID : 37135116157

Option 1 ID : 37135164626

Option 2 ID : 37135164627

Option 3 ID : 37135164628

Option 4 ID : 37135164625

Status : Answered

Chosen Option : 4

Q.10

What is IUPAC name of mesityl oxide?

Ans

1. 4 - Methylbenzaldehyde

2. 2 - Bromohexan-3-one

3. 4 - Methylpent-3-en-2-one

4. 1 - Phenylbutan-2-one

Question Type : MCQ

Question ID : 37135116193

Option 1 ID : 37135164772

Option 2 ID : 37135164771

Option 3 ID : 37135164770

Option 4 ID : 37135164769

Status : Answered

Chosen Option : 3



Q.11 What is the product formed when bauxite ore is treated with sodium hydroxide?

Ans

- 1. Sodium meta aluminate
- 2. Aluminium hydroxide
- 3. Sodium aluminate
- 4. Sodium hydrogen carbonate

Question Type : MCQ
Question ID : 37135116177
Option 1 ID : 37135164708
Option 2 ID : 37135164705
Option 3 ID : 37135164707
Option 4 ID : 37135164706
Status : Answered
Chosen Option : 1

Q.12 What is the symbol of element if it's atomic number is 116?

Ans

- 1. Uus
- 2. Uut
- 3. Uuh
- 4. Uun

Question Type : MCQ
Question ID : 37135116166
Option 1 ID : 37135164664
Option 2 ID : 37135164663
Option 3 ID : 37135164661
Option 4 ID : 37135164662
Status : Answered
Chosen Option : 4

Q.13 Among the following isomeric amines, an amine having highest boiling point is

Ans

- 1. diethylamine
- 2. n - butylamine
- 3. tert - butylamine
- 4. ethyldimethylamine

Question Type : MCQ

Question ID : 37135116189

Option 1 ID : 37135164755

Option 2 ID : 37135164753

Option 3 ID : 37135164754

Option 4 ID : 37135164756

Status : Answered

Chosen Option : 2

Q.14 What type of hybridisation results in tetrahedral geometry?

Ans

- 1. sp^2
- 2. sp
- 3. sp^3
- 4. dsp^2

Question Type : MCQ

Question ID : 37135116179

Option 1 ID : 37135164714

Option 2 ID : 37135164713

Option 3 ID : 37135164715

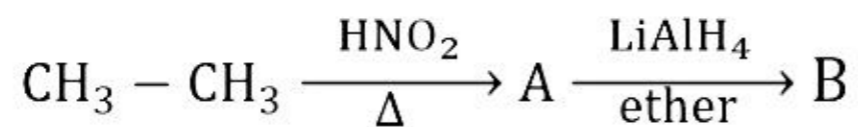
Option 4 ID : 37135164716

Status : Answered

Chosen Option : 3

Q.15

Identify product B obtained in following reaction.



Ans

✗ 1. Ethanoic acid

✗ 2. Ethanal

✗ 3. Ethanol

✓ 4. Ethanamine

Question Type : MCQ

Question ID : 37135116188

Option 1 ID : 37135164751

Option 2 ID : 37135164749

Option 3 ID : 37135164750

Option 4 ID : 37135164752

Status : Answered

Chosen Option : 3

Q.16

What is the molar conductivity at infinite dilution of CaCl_2 , if the molar conductivity of Ca^{2+} ion and Cl^- ion at infinite dilution is 119 and $71 \text{ } \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$?

Ans

✗ 1. $431.0 \text{ } \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$ ✗ 2. $341.0 \text{ } \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$ ✓ 3. $261.0 \text{ } \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$ ✗ 4. $126.0 \text{ } \Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$

Question Type : MCQ

Question ID : 37135116196

Option 1 ID : 37135164781

Option 2 ID : 37135164784

Option 3 ID : 37135164783

Option 4 ID : 37135164782

Status : Answered

Chosen Option : 4



Q.17 Lithium crystallises into body centered cubic structure. What is the radius of lithium if edge length of it's unit cell is 351 pm?

Ans

- ✓ 1. 151.98 pm
- ✗ 2. 300.50 pm
- ✗ 3. 75.50 pm
- ✗ 4. 240.80 pm

Question Type : MCQ

Question ID : 37135116169

Option 1 ID : 37135164675

Option 2 ID : 37135164673

Option 3 ID : 37135164676

Option 4 ID : 37135164674

Status : Answered

Chosen Option : 1

Q.18 Which among the following polymer is used to make crockeries?

Ans

- ✓ 1. Melamine
- ✗ 2. HDPE
- ✗ 3. Buna - S
- ✗ 4. Buna - N

Question Type : MCQ

Question ID : 37135116199

Option 1 ID : 37135164795

Option 2 ID : 37135164796

Option 3 ID : 37135164793

Option 4 ID : 37135164794

Status : Answered

Chosen Option : 1



Q.19 Which of the following compounds is obtained when benzoic acid is treated with conc. H_2SO_4 and conc. HNO_3

Ans

1. 2,4,6 trinitrobenzoic acid

2. O - Nitrobenzoic acid

3. m - Nitrobenzoic acid

4. p - Nitrobenzoic acid

Question Type : MCQ

Question ID : 37135116186

Option 1 ID : 37135164744

Option 2 ID : 37135164741

Option 3 ID : 37135164742

Option 4 ID : 37135164743

Status : Answered

Chosen Option : 1

Q.20 If side chain group -R for amino acid is $-\text{CH}_2\text{OH}$ identify the amino acid from following?

Ans

1. Arginine

2. Tyrosine

3. Serine

4. Proline

Question Type : MCQ

Question ID : 37135116197

Option 1 ID : 37135164788

Option 2 ID : 37135164785

Option 3 ID : 37135164786

Option 4 ID : 37135164787

Status : Answered

Chosen Option : 1

Q.21 For the reaction $4\text{NH}_3 + 5\text{O}_2 \rightarrow 4\text{NO} + 6\text{H}_2\text{O}$ if the rate of disappearance of NH_3 is $3.6 \times 10^{-3} \text{ M/s}$. What is the rate of formation of water?

Ans

1. $4.0 \times 10^4 \text{ M/s}$

2. $3.6 \times 10^{-3} \text{ M/s}$

3. $6.0 \times 10^{-4} \text{ M/s}$

4. $5.4 \times 10^{-3} \text{ M/s}$

Question Type : MCQ

Question ID : 37135116153

Option 1 ID : 37135164611

Option 2 ID : 37135164610

Option 3 ID : 37135164612

Option 4 ID : 37135164609

Status : Answered

Chosen Option : 4

Q.22 Osmotic pressure of one molar solution at 27°C is ($R = 0.082$)

Ans

1. 2.46 atm

2. 12.1 atm

3. 24.6 atm

4. 1.21 atm

Question Type : MCQ

Question ID : 37135116185

Option 1 ID : 37135164738

Option 2 ID : 37135164739

Option 3 ID : 37135164740

Option 4 ID : 37135164737

Status : Answered

Chosen Option : 3



Q.23

Identify the oxidation state of Cr in $K_3 [Cr(C_2O_4)_3]$

Ans

✓ 1. + 3

✗ 2. + 2

✗ 3. + 6

✗ 4. + 5

Question Type : MCQ

Question ID : 37135116195

Option 1 ID : 37135164778

Option 2 ID : 37135164777

Option 3 ID : 37135164780

Option 4 ID : 37135164779

Status : Answered

Chosen Option : 1

Q.24

Which among the following is a dihydric phenol?

Ans

✗ 1. P-cresol

✗ 2. Phloroglucinol

✓ 3. Catechol

✗ 4. Pyrogallol

Question Type : MCQ

Question ID : 37135116181

Option 1 ID : 37135164721

Option 2 ID : 37135164723

Option 3 ID : 37135164724

Option 4 ID : 37135164722

Status : Answered

Chosen Option : 3



Q.25 Which among the following halogen does not form polyhalide ion?

Ans

1. Cl

2. Br

3. I

4. F

Question Type : MCQ

Question ID : 37135116173

Option 1 ID : 37135164690

Option 2 ID : 37135164691

Option 3 ID : 37135164692

Option 4 ID : 37135164689

Status : Answered

Chosen Option : 4

Q.26 The rate law for the reaction $A+B+C \longrightarrow \text{Product}$ is expressed as $\text{Rate} = k [A]^2 [B]^1 [C]^0$. What is the overall order of the reaction?

Ans

1. 3

2. 0

3. 1

4. 2

Question Type : MCQ

Question ID : 37135116155

Option 1 ID : 37135164617

Option 2 ID : 37135164620

Option 3 ID : 37135164619

Option 4 ID : 37135164618

Status : Answered

Chosen Option : 1

Q.27 What is the number of atoms present per unit cell of aluminium having edge length 4 \AA ?
(If density of Al = 2.7 g cm^{-3} , At. mass of Al=27)

Ans

1. 8

2. 1

3. 2

4. 4

Question Type : MCQ

Question ID : 37135116174

Option 1 ID : 37135164693

Option 2 ID : 37135164696

Option 3 ID : 37135164695

Option 4 ID : 37135164694

Status : Answered

Chosen Option : 4

Q.28 Which among following is true for the value of Henry's law constant K ?

Ans 1.

is greater for gases with higher solubilities

2.

first increases and then decreases with increase in temperature

3.

increases with increase in temperature

4. is same for all gases

Question Type : MCQ

Question ID : 37135116191

Option 1 ID : 37135164762

Option 2 ID : 37135164764

Option 3 ID : 37135164761

Option 4 ID : 37135164763

Status : Answered

Chosen Option : 4

Q.29 When SO_2 is passed through acidified $\text{K}_2\text{Cr}_2\text{O}_7$, the process that takes place is

Ans

- 1. the solution turns blue
- 2. the solution is decolourised
- 3. SO_2 is reduced
- 4. green $\text{Cr}_2(\text{SO}_4)_3$ is formed

Question Type : MCQ

Question ID : 37135116171

Option 1 ID : 37135164683

Option 2 ID : 37135164684

Option 3 ID : 37135164682

Option 4 ID : 37135164681

Status : Answered

Chosen Option : 4

Q.30 Which among the following is powerful bleaching and oxidising agent?

Ans

- 1. Cl_2
- 2. SO_2
- 3. HI
- 4. PH_3

Question Type : MCQ

Question ID : 37135116172

Option 1 ID : 37135164686

Option 2 ID : 37135164685

Option 3 ID : 37135164687

Option 4 ID : 37135164688

Status : Answered

Chosen Option : 1



Q.31

Resonance is NOT exhibited by

Ans

✓ 1. cyclohexane

✗ 2. aniline

✗ 3. nitrobenzene

✗ 4. phenol

Question Type : MCQ

Question ID : 37135116156

Option 1 ID : 37135164624

Option 2 ID : 37135164622

Option 3 ID : 37135164623

Option 4 ID : 37135164621

Status : Answered

Chosen Option : 1

Q.32

Which statement from following is true for a complex hexamine cobalt (III) chloride?

Ans

✗ 1.

In this coordination number of cobalt is 9

✓ 2.

In this oxidation state of cobalt is +3

✗ 3. It is a heteroleptic complex

✗ 4. It is an anionic complex

Question Type : MCQ

Question ID : 37135116164

Option 1 ID : 37135164656

Option 2 ID : 37135164655

Option 3 ID : 37135164653

Option 4 ID : 37135164654

Status : Answered

Chosen Option : 2



Q.33 Heat of combustion of $C_{(s)}$, $H_{2(g)}$ and $C_2H_{6(g)}$ are $-x_1$, $-x_2$ and $-x_3$ respectively.
Hence heat of formation of $C_2H_{6(g)}$ is

Ans

1. $-x_1 - x_2 + x_3$

2. $-2x_1 - 3x_2 + x_3$

3. $x_1 + x_2 - x_3$

4. $-x_3 + 2x_1 + 3x_2$

Question Type : MCQ

Question ID : 37135116161

Option 1 ID : 37135164641

Option 2 ID : 37135164642

Option 3 ID : 37135164644

Option 4 ID : 37135164643

Status : Answered

Chosen Option : 4

Q.34

Caesium is used in

Ans

1. devising photo electric cells

2. air conditioning plants

3. extraction of boron

4. fast breeder nuclear reactors

Question Type : MCQ

Question ID : 37135116163

Option 1 ID : 37135164650

Option 2 ID : 37135164652

Option 3 ID : 37135164649

Option 4 ID : 37135164651

Status : Answered

Chosen Option : 1



Q.35 How many optical isomers are possible for a compound having four asymmetric carbon atoms?

Ans

✓ 1. 16

✗ 2. 8

✗ 3. 12

✗ 4. 4

Question Type : MCQ

Question ID : 37135116160

Option 1 ID : 37135164640

Option 2 ID : 37135164638

Option 3 ID : 37135164639

Option 4 ID : 37135164637

Status : Answered

Chosen Option : 1

Q.36 Which among the following is true for Balz-Schiemann reaction?

Ans ✗ 1.

In this Ar - Cl is obtained from $\text{Ar} - \text{N}_2^+ \text{X}^-$

✗ 2.

It is useful for preparation of nitrobenzene from benzene diazonium salts

✗ 3.

In this Ar - CN is obtained from $\text{Ar} - \text{N}_2^+ \text{X}^-$

✓ 4.

In this Ar - F is obtained from $\text{Ar} - \text{N}_2^+ \text{X}^-$

Question Type : MCQ

Question ID : 37135116190

Option 1 ID : 37135164759

Option 2 ID : 37135164757

Option 3 ID : 37135164760

Option 4 ID : 37135164758

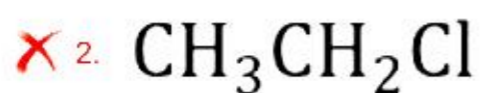
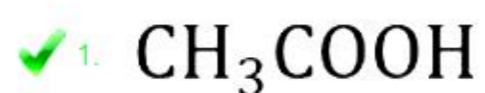
Status : Answered

Chosen Option : 4



Q.37 Which among following compounds contains phantom atom?

Ans



Question Type : MCQ

Question ID : 37135116159

Option 1 ID : 37135164635

Option 2 ID : 37135164633

Option 3 ID : 37135164636

Option 4 ID : 37135164634

Status : Answered

Chosen Option : 1

Q.38 Energy required to dissociate 16g $\text{O}_{2(g)}$ into free atoms is x kJ. The value of bond enthalpy of $\text{O}=\text{O}$ bond is

Ans

✓ 1. $2x$ kJ

✗ 2. $\frac{x}{2}$ kJ

✗ 3. $4x$ kJ

✗ 4. $16x$ kJ

Question Type : MCQ

Question ID : 37135116178

Option 1 ID : 37135164710

Option 2 ID : 37135164709

Option 3 ID : 37135164711

Option 4 ID : 37135164712

Status : Answered

Chosen Option : 1

Q.39 What is the mass percentage of carbon in urea? (mol. mass of urea = 60 g mol^{-1})

Ans

1. 28.0 %

2. 20.0 %

3. 26.67 %

4. 46.67 %

Question Type : MCQ

Question ID : 37135116175

Option 1 ID : 37135164699

Option 2 ID : 37135164700

Option 3 ID : 37135164697

Option 4 ID : 37135164698

Status : Answered

Chosen Option : 2

Q.40 Which is true for heat and temperature?

Ans

1.

Extensive and intensive properties respectively

2.

Intensive and extensive properties respectively

3. Both are extensive properties

4. Both are intensive properties

Question Type : MCQ

Question ID : 37135116154

Option 1 ID : 37135164615

Option 2 ID : 37135164616

Option 3 ID : 37135164614

Option 4 ID : 37135164613

Status : Answered

Chosen Option : 4

Q.41

Which of the following is used as an antiseptic in soap?

Ans

- 1. Iodoform
- 2. Boric acid
- 3. Tincture iodine
- 4. Bithional

Question Type : MCQ

Question ID : 37135116151

Option 1 ID : 37135164601

Option 2 ID : 37135164603

Option 3 ID : 37135164604

Option 4 ID : 37135164602

Status : Answered

Chosen Option : 4

Q.42

Which of the following halogens combine with dihydrogen at lowest temperature?

Ans

- 1. Iodine
- 2. Fluorine
- 3. Bromine
- 4. Chlorine

Question Type : MCQ

Question ID : 37135116183

Option 1 ID : 37135164732

Option 2 ID : 37135164731

Option 3 ID : 37135164730

Option 4 ID : 37135164729

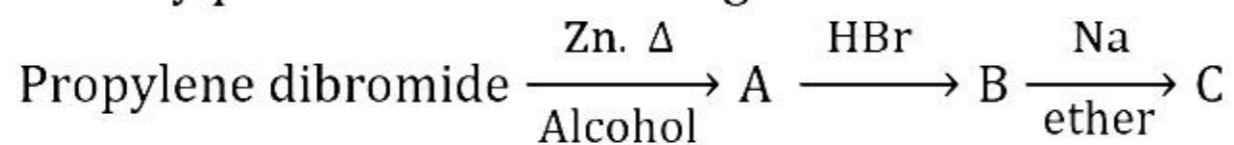
Status : Answered

Chosen Option : 1



Q.43

Identify product 'C' in following reaction.



Ans

1. 2 - Bromobutane
2. Isobutane
3. 2, 3 - dimethyl butane
4. 1, 2 - dibromo butane

Question Type : MCQ

Question ID : 37135116152

Option 1 ID : 37135164605

Option 2 ID : 37135164607

Option 3 ID : 37135164608

Option 4 ID : 37135164606

Status : Answered

Chosen Option : 3

Q.44

Which of the following oxides is NOT volatile?

Ans

1. AS_2O_3
2. ZnO
3. P_2O_5
4. SO_2

Question Type : MCQ

Question ID : 37135116176

Option 1 ID : 37135164702

Option 2 ID : 37135164704

Option 3 ID : 37135164701

Option 4 ID : 37135164703

Status : Answered

Chosen Option : 2



Q.45 The edge length of fcc type unit cell of copper having atomic radius 127.6 pm is equal to

Ans

1. 295 pm

2. 361 pm

3. 331 pm

4. 378 pm

Question Type : MCQ

Question ID : 37135116194

Option 1 ID : 37135164773

Option 2 ID : 37135164775

Option 3 ID : 37135164774

Option 4 ID : 37135164776

Status : Answered

Chosen Option : 2

Q.46 Which among the following is a cross-linked polymer?

Ans

1. PVC

2. Orlon

3. Vulcanised rubber

4. Polypropylene

Question Type : MCQ

Question ID : 37135116158

Option 1 ID : 37135164631

Option 2 ID : 37135164632

Option 3 ID : 37135164629

Option 4 ID : 37135164630

Status : Answered

Chosen Option : 3

Q.47 Which among following compounds is obtained when calcium formate is dry distilled alone?

Ans

- 1. Methanoic acid
- 2. Methanal
- 3. Methanol
- 4. Methoxy methane

Question Type : MCQ

Question ID : 37135116184

Option 1 ID : 37135164733

Option 2 ID : 37135164734

Option 3 ID : 37135164735

Option 4 ID : 37135164736

Status : Answered

Chosen Option : 2

Q.48 A solution is 0.25% by mass. What is the weight of solvent containing 1.25g solute ?

Ans

- 1. 498.75 g
- 2. 300 g
- 3. 600 g
- 4. 200 g

Question Type : MCQ

Question ID : 37135116165

Option 1 ID : 37135164659

Option 2 ID : 37135164658

Option 3 ID : 37135164660

Option 4 ID : 37135164657

Status : Answered

Chosen Option : 1

Q.49 What is IUPAC name of 3 - chloropropyl ethyl ether?

Ans

- 1. 3- Chloro-1-propoxyethane
- 2. 3 - Chloro-1- ethoxypropane
- 3. 1- Chloro-3-propoxyethane
- 4. 1 - Chloro-3-ethoxypropane

Question Type : MCQ

Question ID : 37135116182

Option 1 ID : 37135164728

Option 2 ID : 37135164726

Option 3 ID : 37135164727

Option 4 ID : 37135164725

Status : Answered

Chosen Option : 2

Q.50 Which of the following can form colloidal sol with water?

Ans

- 1. Common salt
- 2. Starch
- 3. Glucose
- 4. Ammonium sulphate

Question Type : MCQ

Question ID : 37135116167

Option 1 ID : 37135164665

Option 2 ID : 37135164667

Option 3 ID : 37135164666

Option 4 ID : 37135164668

Status : Answered

Chosen Option : 3

Q.1 The area of the region bounded by the curve $y = \log x$, x-axis and the lines $x = 1$, $x = e$ is

Ans

1. $\frac{1}{e}$ sq. units

2. 1 sq. units

3. 4 sq. units

4. $\frac{1}{2}$ sq. units

Question Type : **MCQ**

Question ID : 37135116235

Option 1 ID : 37135164937

Option 2 ID : 37135164939

Option 3 ID : 37135164940

Option 4 ID : 37135164938

Status : **Answered**

Chosen Option : 2

Q.2 The measure of the acute angle between the lines given by the equation

$$3x^2 - 4\sqrt{3}xy + 3y^2 = 0 \text{ is}$$

Ans

1. 45°

2. 60°

3. 70°

4. 30°

Question Type : **MCQ**

Question ID : 37135116250

Option 1 ID : 37135164998

Option 2 ID : 37135164999

Option 3 ID : 37135165000

Option 4 ID : 37135164997

Status : **Answered**

Chosen Option : 4

Q.3

For a sequence (t_n) if $s_n = 7(3^n - 1)$, then $t_n =$

Ans

1. $(7) 3^{n-1}$

2. $(14) 3^{n+1}$

3. $(14) 3^{n-1}$

4. $(7) 3^{n+1}$

Question Type : MCQ

Question ID : 37135116234

Option 1 ID : 37135164935

Option 2 ID : 37135164933

Option 3 ID : 37135164934

Option 4 ID : 37135164936

Status : Answered

Chosen Option : 3

Q.4

The cumulative distribution function of a continuous random variable X is given by

$F(X = x) = \frac{\sqrt{x}}{2}$, then $P[X > 1]$ is

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135116218

Option 1 ID : 37135164870

Option 2 ID : 37135164871

Option 3 ID : 37135164869

Option 4 ID : 37135164872

Status : Answered

Chosen Option : 1

Q.5

If $\int x^x (1 + \log x) dx = k x^x + c$, then $k =$

Ans

✓₁. $\log_e e$

✗₂. $\log_e \left(\frac{1}{e^2}\right)$

✗₃. $\log_e (e^2)$

✗₄. $\log_e \left(\frac{1}{e}\right)$

Question Type : MCQ

Question ID : 37135116241

Option 1 ID : 37135164962

Option 2 ID : 37135164964

Option 3 ID : 37135164961

Option 4 ID : 37135164963

Status : Answered

Chosen Option : 1

Q.6 A particle moves according to the law $s = t^3 - 6t^2 + 9t + 25$. The displacement of the particle at the time when its acceleration is zero, is

Ans

✗₁. 0 units

✗₂. -27 units

✓₃. 27 units

✗₄. 9 units

Question Type : MCQ

Question ID : 37135116204

Option 1 ID : 37135164813

Option 2 ID : 37135164815

Option 3 ID : 37135164816

Option 4 ID : 37135164814

Status : Answered

Chosen Option : 3

Q.7 If the population grows at the rate of 8 % per year , then the time taken for the population to be doubled is (given $\log 2 = 0 \cdot 6912$)

Ans

✓ 1. 8.64 years

✗ 2. 6.8 years

✗ 3. 10.27 years

✗ 4. 4.3 years

Question Type : MCQ

Question ID : 37135116243

Option 1 ID : 37135164969

Option 2 ID : 37135164972

Option 3 ID : 37135164971

Option 4 ID : 37135164970

Status : Answered

Chosen Option : 4

Q.8

If $f(x) = \frac{2x + 3}{3x - 2}$, $x \neq \frac{2}{3}$ then $f \circ f$ is

Ans

✗ 1. an even function

✗ 2.

not defined for all $x \in R$

✗ 3. a constant function

✓ 4. an odd function

Question Type : MCQ

Question ID : 37135116214

Option 1 ID : 37135164855

Option 2 ID : 37135164854

Option 3 ID : 37135164853

Option 4 ID : 37135164856

Status : Answered

Chosen Option : 2

Q.9

If $\int_0^1 (5x^2 - 3x + k) dx = 0$, then $k =$

Ans

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

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

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

4. $\frac{-1}{6}$

Question Type : MCQ

Question ID : 37135116231

Option 1 ID : 37135164921

Option 2 ID : 37135164923

Option 3 ID : 37135164922

Option 4 ID : 37135164924

Status : Answered

Chosen Option : 4

Q.10

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

Ans

✗ 1. $\frac{1}{\sqrt{x}} e^x + c$

✓ 2. $2\sqrt{x} e^x + c$

✗ 3. $\frac{\sqrt{x}}{2} e^x + c$

✗ 4. $\sqrt{x} e^x + c$

Question Type : MCQ

Question ID : 37135116247

Option 1 ID : 37135164987

Option 2 ID : 37135164986

Option 3 ID : 37135164988

Option 4 ID : 37135164985

Status : Answered

Chosen Option : 2

Q.11

$$\cos\left(\frac{3\pi}{4} + x\right) - \sin\left(\frac{\pi}{4} - x\right) =$$

Ans

✓_{1.} $-\sqrt{2} \cos x$

✗_{2.} $-\sqrt{2} \sin x$

✗_{3.} $\sqrt{2} \cos x$

✗_{4.} $\sqrt{2} \sin x$

Question Type : MCQ

Question ID : 37135116236

Option 1 ID : 37135164944

Option 2 ID : 37135164942

Option 3 ID : 37135164943

Option 4 ID : 37135164941

Status : Answered

Chosen Option : 1

Q.12

$$\int_{-\pi}^{\pi} \frac{2x}{1 + \cos^2 x} dx =$$

Ans

1. π

2. 0

3. 1

4. $-\pi$

Question Type : MCQ

Question ID : 37135116232

Option 1 ID : 37135164927

Option 2 ID : 37135164925

Option 3 ID : 37135164926

Option 4 ID : 37135164928

Status : Answered

Chosen Option : 2

Q.13 If $f(x) = [x]^2 - 5[x] + 6 = 0$, where $[x]$ denotes greatest integer function

then $x \in$

Ans

1. $(2, 4]$

2. $[2, 4]$

3. $[2, 4)$

4. $(2, 4)$

Question Type : MCQ

Question ID : 37135116221

Option 1 ID : 37135164884

Option 2 ID : 37135164883

Option 3 ID : 37135164882

Option 4 ID : 37135164881

Status : Answered

Chosen Option : 3

Q.14

$y = c^2 + \frac{c}{x}$ is the solution of the differential equation

Ans

1. $x^4 \left(\frac{dy}{dx}\right)^2 + x \left(\frac{dy}{dx}\right) - y = 0$

2. $x^4 \left(\frac{dy}{dx}\right)^2 - x \left(\frac{dy}{dx}\right) - y = 0$

3. $x^4 \left(\frac{dy}{dx}\right)^2 - x \left(\frac{dy}{dx}\right) + y = 0$

4. $x^4 \left(\frac{dy}{dx}\right)^2 + x \left(\frac{dy}{dx}\right) + y = 0$

Question Type : MCQ

Question ID : 37135116226

Option 1 ID : 37135164902

Option 2 ID : 37135164903

Option 3 ID : 37135164901

Option 4 ID : 37135164904

Status : Answered

Chosen Option : 2

Q.15

If $y\sqrt{1-x^2} + x\sqrt{1-y^2} = 1$, then $\frac{dy}{dx} =$

Ans

✓ 1. $-\sqrt{\frac{1-y^2}{1-x^2}}$

✗ 2. $-\sqrt{\frac{1-x^2}{1-y^2}}$

✗ 3. $\sqrt{\frac{1+y^2}{1+x^2}}$

✗ 4. $\sqrt{\frac{1-x^2}{1-y^2}}$

Question Type : MCQ

Question ID : 37135116233

Option 1 ID : 37135164929

Option 2 ID : 37135164931

Option 3 ID : 37135164930

Option 4 ID : 37135164932

Status : Answered

Chosen Option : 1

Q.16 If the vectors $(2\hat{i} - q\hat{j} + 3\hat{k})$ and $(4\hat{i} - 5\hat{j} + 6\hat{k})$ are collinear, then the value of q is

Ans

✓ 1. $\frac{5}{2}$

✗ 2. $\frac{-5}{2}$

✗ 3. $\frac{-2}{5}$

✗ 4. $\frac{2}{5}$

Question Type : MCQ

Question ID : 37135116238

Option 1 ID : 37135164950

Option 2 ID : 37135164951

Option 3 ID : 37135164952

Option 4 ID : 37135164949

Status : Answered

Chosen Option : 1

Q.17 If the vectors $\vec{a}, \vec{b}, \vec{c}$ are non coplanar, then $\frac{[\vec{a} + 2\vec{b}, \vec{b} + 2\vec{c}, \vec{c} + 2\vec{a}]}{[\vec{a}, \vec{b}, \vec{c}]} =$

Ans

✗ 1. 8

✗ 2. 3

✓ 3. 9

✗ 4. 6

Question Type : MCQ

Question ID : 37135116205

Option 1 ID : 37135164819

Option 2 ID : 37135164817

Option 3 ID : 37135164820

Option 4 ID : 37135164818

Status : Answered

Chosen Option : 3

Q.18 With usual notations in ΔABC , if $C = 90^\circ$, then $\tan^{-1}\left(\frac{a}{b+c}\right) + \tan^{-1}\left(\frac{b}{c+a}\right) =$

Ans

✓ 1. $\frac{\pi}{4}$

✗ 2. $\frac{\pi}{6}$

✗ 3. π

✗ 4. $\frac{\pi}{3}$

Question Type : MCQ

Question ID : 37135116216

Option 1 ID : 37135164861

Option 2 ID : 37135164863

Option 3 ID : 37135164864

Option 4 ID : 37135164862

Status : Answered

Chosen Option : 1

Q.19 The logical expression $[p \wedge (q \vee r)] \vee [\sim r \wedge \sim q \wedge p]$ is equivalent to

Ans

✗ 1. q

✗ 2. $\sim q$

✗ 3. $\sim p$

✓ 4. p

Question Type : MCQ

Question ID : 37135116229

Option 1 ID : 37135164915

Option 2 ID : 37135164916

Option 3 ID : 37135164914

Option 4 ID : 37135164913

Status : Answered

Chosen Option : 4

Q.20

If the lines given by $\vec{r} = 2\hat{i} + \lambda(\hat{i} + 2\hat{j} + m\hat{k})$ and $\vec{r} = \hat{i} + \mu(2\hat{i} + \hat{j} + 6\hat{k})$ are perpendicular, then the value of m is

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135116222

Option 1 ID : 37135164886

Option 2 ID : 37135164888

Option 3 ID : 37135164885

Option 4 ID : 37135164887

Status : Answered

Chosen Option : 4

Q.21

If A $(-1, 2, 3)$, B $(3, -2, 1)$, C $(2, 1, 3)$ and D $(-1, -2, 4)$ are the vertices of a tetrahedron, then its volume is

Ans

✓ 1. $\frac{16}{3}$ cu. units

✗ 2. $\frac{13}{6}$ cu. units

✗ 3. $\frac{16}{31}$ cu. units

✗ 4. $\frac{31}{6}$ cu. units

Question Type : MCQ

Question ID : 37135116230

Option 1 ID : 37135164919

Option 2 ID : 37135164920

Option 3 ID : 37135164917

Option 4 ID : 37135164918

Status : Answered

Chosen Option : 1

Q.22

If $\operatorname{cosec}\theta + \cot\theta = 5$, then $\sin\theta =$

Ans

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

2. $\frac{5}{26}$

3. $\frac{5}{13}$

4. $\frac{1}{13}$

Question Type : MCQ

Question ID : 37135116244

Option 1 ID : 37135164973

Option 2 ID : 37135164976

Option 3 ID : 37135164974

Option 4 ID : 37135164975

Status : Answered

Chosen Option : 3

Q.23

A metal wire 108 meters long is bent to form a rectangle. If the area of the rectangle

is maximum, then its dimensions are

Ans

1. 28 m, 28 m

2. 27 m, 27 m

3. 25 m, 25 m

4. 26 m, 26 m

Question Type : MCQ

Question ID : 37135116220

Option 1 ID : 37135164880

Option 2 ID : 37135164877

Option 3 ID : 37135164878

Option 4 ID : 37135164879

Status : Answered

Chosen Option : 2

Q.24

The eccentricity of the hyperbola $16x^2 - 3y^2 - 32x - 12y - 44 = 0$ is

Ans

✓ 1. $\sqrt{\frac{19}{3}}$

✗ 2. $\sqrt{\frac{13}{19}}$

✗ 3. $\frac{\sqrt{19}}{3}$

✗ 4. $\frac{13}{\sqrt{19}}$

Question Type : **MCQ**

Question ID : 37135116240

Option 1 ID : 37135164960

Option 2 ID : 37135164959

Option 3 ID : 37135164957

Option 4 ID : 37135164958

Status : **Answered**

Chosen Option : 3

Q.25

If $u = \tan^{-1}\left(\frac{\sqrt{1+x^2}-1}{x}\right)$ and $v = \tan^{-1}\left(\frac{2x\sqrt{1-x^2}}{1-2x^2}\right)$, then $\frac{du}{dv}$ at $x = 0$ is

Ans

✓ 1. $\frac{1}{4}$

✗ 2. $\frac{1}{8}$

✗ 3. 1

✗ 4. $\frac{-1}{8}$

Question Type : MCQ

Question ID : 37135116207

Option 1 ID : 37135164828

Option 2 ID : 37135164826

Option 3 ID : 37135164825

Option 4 ID : 37135164827

Status : Answered

Chosen Option : 3

Q.26 The direction cosines of a line which lies in ZOY plane and makes an angle of 30° with Z-axis are

Ans

1. $0, \frac{1}{2}, \pm \frac{\sqrt{3}}{2}$

2. $\pm \frac{1}{2}, 0, \frac{\sqrt{3}}{2}$

3. $0, \frac{\sqrt{3}}{2}, \pm \frac{1}{2}$

4. $\frac{\sqrt{3}}{2}, 0, \pm \frac{1}{2}$

Question Type : MCQ

Question ID : 37135116242

Option 1 ID : 37135164968

Option 2 ID : 37135164966

Option 3 ID : 37135164965

Option 4 ID : 37135164967

Status : Answered

Chosen Option : 2

Q.27

If $\frac{d^2y}{dx^2} = \sin x + e^x$; $y(0) = 3$ and $\frac{dy}{dx}$ at $x = 0$ is 4, then the equation of the

curve is

Ans

✗ 1. $y = 4 + 2x + e^x - \sin x$

✗ 2. $y = 2 + 3x + e^x - \sin x$

✓ 3. $y = 2 + 4x + e^x - \sin x$

✗ 4. $y = 4 + 2x + e^x + \sin x$

Question Type : MCQ

Question ID : 37135116223

Option 1 ID : 37135164890

Option 2 ID : 37135164891

Option 3 ID : 37135164889

Option 4 ID : 37135164892

Status : Answered

Chosen Option : 4

Q.28

The general solution of $\tan 3x = 1$ is

Ans

✗ 1. $x = n\pi, n \in Z$

✓ 2. $x = n\left(\frac{\pi}{3}\right) + \frac{\pi}{12}, n \in Z$

✗ 3. $x = n\pi + \frac{\pi}{4}, n \in Z$

✗ 4. $x = n\pi \pm \frac{\pi}{4}, n \in Z$

Question Type : MCQ

Question ID : 37135116210

Option 1 ID : 37135164839

Option 2 ID : 37135164838

Option 3 ID : 37135164837

Option 4 ID : 37135164840

Status : Answered

Chosen Option : 2



Q.29

If $A = \begin{bmatrix} 1 & 0 & 2 \\ 2 & 1 & 3 \\ 0 & 3 & -5 \end{bmatrix}$, where A_{ij} is the cofactor of the element a_{ij} of matrix A , then

$$a_{21}A_{21} + a_{22}A_{22} + a_{23}A_{23} =$$

Ans

1. -26

2. 0

3. -2

4. 26

Question Type : MCQ

Question ID : 37135116228

Option 1 ID : 37135164910

Option 2 ID : 37135164909

Option 3 ID : 37135164912

Option 4 ID : 37135164911

Status : Answered

Chosen Option : 3

Q.30

$$\int_0^1 \tan^{-1} \left(\frac{2x}{1-x^2} \right) dx =$$

Ans

✗ 1. $\pi - \log 2$

✓ 2. $\frac{\pi}{2} - \log 2$

✗ 3. $\pi + \log 2$

✗ 4. $\frac{\pi}{2} + \log 2$

Question Type : MCQ

Question ID : 37135116239

Option 1 ID : 37135164956

Option 2 ID : 37135164955

Option 3 ID : 37135164953

Option 4 ID : 37135164954

Status : Answered

Chosen Option : 4

Q.31 Bacteria increases at the rate proportional to the number of bacteria present. If the original number N doubles in 4 hours, then the number of bacteria will be $4N$ in

Ans

1. 2 hours

2. 4 hours

3. 6 hours

4. 8 hours

Question Type : MCQ

Question ID : 37135116248

Option 1 ID : 37135164989

Option 2 ID : 37135164990

Option 3 ID : 37135164991

Option 4 ID : 37135164992

Status : Answered

Chosen Option : 4

Q.32 The length of the perpendicular from the point $P(a, b)$ to the line $\frac{x}{a} + \frac{y}{b} = 1$ is

Ans

1. $\left| \frac{\sqrt{a^2+b^2}}{ab} \right|$ units

2. $\left| \frac{ab}{\sqrt{a^2+b^2}} \right|$ units

3. $\left| \frac{b^2}{\sqrt{a^2+b^2}} \right|$ units

4. $\left| \frac{a^2}{\sqrt{a^2+b^2}} \right|$ units

Question Type : MCQ

Question ID : 37135116246

Option 1 ID : 37135164981

Option 2 ID : 37135164982

Option 3 ID : 37135164984

Option 4 ID : 37135164983

Status : Answered

Chosen Option : 2

Q.33

$$\text{If } f(x) = \frac{(81)^x - (9)^x}{(k)^x - 1} \text{ if } x \neq 0$$
$$= 2 \text{ if } x = 0$$

is continuous at $x = 0$, then the value of k is

Ans

✓ 1. 3

✗ 2. 9

✗ 3. 2

✗ 4. 4

Question Type : MCQ

Question ID : 37135116208

Option 1 ID : 37135164830

Option 2 ID : 37135164832

Option 3 ID : 37135164829

Option 4 ID : 37135164831

Status : Answered

Chosen Option : 1

Q.34

If $\frac{1-\tan\theta}{1+\tan\theta} = \frac{1}{\sqrt{3}}$, where $\theta \in \left(0, \frac{\pi}{2}\right)$, then $\theta =$

Ans

✓ 1. $\frac{\pi}{12}$

✗ 2. $\frac{\pi}{4}$

✗ 3. $\frac{\pi}{6}$

✗ 4. $\frac{\pi}{3}$

Question Type : MCQ

Question ID : 37135116237

Option 1 ID : 37135164945

Option 2 ID : 37135164946

Option 3 ID : 37135164947

Option 4 ID : 37135164948

Status : Answered

Chosen Option : 1

Q.35

If the elements of matrix A are the reciprocals of elements of matrix $\begin{bmatrix} 1 & \omega & \omega^2 \\ \omega & \omega^2 & 1 \\ \omega^2 & 1 & \omega \end{bmatrix}$,

where ω is complex cube root of unity, then

Ans

✗ 1. $A^{-1} = I$

✗ 2. $A^{-1} = A^2$

✗ 3. $A^{-1} = A$

✓ 4. A^{-1} dose not exits

Question Type : MCQ

Question ID : 37135116215

Option 1 ID : 37135164859

Option 2 ID : 37135164858

Option 3 ID : 37135164857

Option 4 ID : 37135164860

Status : Answered

Chosen Option : 3

Q.36

$$\sin^{-1}\left(\frac{1}{2}\right) + \cos^{-1}\left(\frac{\sqrt{3}}{2}\right) + \cot^{-1}\left(-\frac{1}{\sqrt{3}}\right) =$$

Ans

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

2. π

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

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

Question Type : MCQ

Question ID : 37135116212

Option 1 ID : 37135164845

Option 2 ID : 37135164848

Option 3 ID : 37135164846

Option 4 ID : 37135164847

Status : Answered

Chosen Option : 2

Q.37

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

Ans

✓₁. $\log|x+1| + \frac{4}{x+2} + c$

✗₂. $\log|x+1| - \frac{4}{x+2} + \frac{3}{(x+2)^2} + c$

✗₃. $\log|x+1| + \frac{1}{x+2} + c$

✗₄.

$$\log|x+1| - \frac{4}{x+2} - \frac{3}{(x+2)^2} + c$$

Question Type : MCQ

Question ID : 37135116217

Option 1 ID : 37135164866

Option 2 ID : 37135164868

Option 3 ID : 37135164865

Option 4 ID : 37135164867

Status : Answered

Chosen Option : 4

Q.38 If the line $\vec{r} = (\hat{i} - 2\hat{j} + 3\hat{k}) + \lambda(2\hat{i} + \hat{j} + 2\hat{k})$ is parallel to the plane $\vec{r} \cdot (3\hat{i} - 2\hat{j} - m\hat{k}) = 5$, then value of m is

Ans

1. -2

2. -3

3. 2

4. 3

Question Type : MCQ

Question ID : 37135116206

Option 1 ID : 37135164821

Option 2 ID : 37135164824

Option 3 ID : 37135164823

Option 4 ID : 37135164822

Status : Answered

Chosen Option : 2

Q.39 A die is thrown 100 times, then the standard deviation of getting an even number is

Ans

1. 10

2. 5

3. 20

4. 15

Question Type : MCQ

Question ID : 37135116209

Option 1 ID : 37135164834

Option 2 ID : 37135164833

Option 3 ID : 37135164836

Option 4 ID : 37135164835

Status : Answered

Chosen Option : 2

Q.40 The maximum value of $Z = 3x + 5y$, subject to $x + 4y \leq 24$, $y \leq 4$, $x \geq 0$, $y \geq 0$ is

Ans

1. 20

2. 120

3. 72

4. 44

Question Type : MCQ

Question ID : 37135116203

Option 1 ID : 37135164809

Option 2 ID : 37135164812

Option 3 ID : 37135164811

Option 4 ID : 37135164810

Status : Answered

Chosen Option : 3

Q.41 If $P(A) = \frac{2}{5}$, $P(B) = \frac{1}{4}$ and $P(A \cup B) = \frac{1}{2}$, then $P(A' \cup B')$ =

Ans

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

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

3. $\frac{3}{20}$

4. $\frac{17}{20}$

Question Type : MCQ

Question ID : 37135116225

Option 1 ID : 37135164900

Option 2 ID : 37135164899

Option 3 ID : 37135164897

Option 4 ID : 37135164898

Status : Answered

Chosen Option : 4

Q.42

$$\text{If } y = \tan^{-1} \left[\sqrt{\frac{1 + \cos \frac{x}{2}}{1 - \cos \frac{x}{2}}} \right], \text{ then } \frac{dy}{dx} =$$

Ans

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

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

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

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

Question Type : MCQ

Question ID : 37135116202

Option 1 ID : 37135164808

Option 2 ID : 37135164806

Option 3 ID : 37135164807

Option 4 ID : 37135164805

Status : Answered

Chosen Option : 2

Q.43 The p. d. f. of a continuous random variable X is given by

$$f(x) = \frac{1}{2} \quad \text{if } 0 < x < 2$$
$$= 0 \quad \text{otherwise}$$

and if $a = P\left(X < \frac{1}{2}\right)$, $b = P\left(X > \frac{3}{2}\right)$, then relation between a and b is

Ans

✓^{1.} $a - b = 0$

✗^{2.} $2a - b = 0$

✗^{3.} $3a - b = 0$

✗^{4.} $a - 2b = 0$

Question Type : MCQ

Question ID : 37135116219

Option 1 ID : 37135164874

Option 2 ID : 37135164873

Option 3 ID : 37135164875

Option 4 ID : 37135164876

Status : Answered

Chosen Option : 3

Q.44

The general solution of the differential equation $\frac{dy}{dx} + \frac{1}{\sqrt{1-x^2}} = 0$ is

Ans

1. $y^2 + 2\sin^{-1} x = c$

2. $x + \sin^{-1} y = c$

3. $y + \sin^{-1} x = c$

4. $x^2 + 2\sin^2 y = c$

Question Type : MCQ

Question ID : 37135116227

Option 1 ID : 37135164906

Option 2 ID : 37135164907

Option 3 ID : 37135164905

Option 4 ID : 37135164908

Status : Answered

Chosen Option : 3

Q.45

If the lines $\frac{x-1}{2} = \frac{y+1}{3} = \frac{z-1}{4}$ and $\frac{x-3}{1} = \frac{y-k}{2} = \frac{z}{1}$ intersect, then $k =$

Ans

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

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

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

4. $\frac{-2}{9}$

Question Type : MCQ

Question ID : 37135116201

Option 1 ID : 37135164801

Option 2 ID : 37135164802

Option 3 ID : 37135164803

Option 4 ID : 37135164804

Status : Answered

Chosen Option : 1



Q.46 The contrapositive of the statement ' If Raju is courageous, then he will join Indian Army', is

Ans 1.

If Raju does not join Indian Army, then he is courageous.

2.

If Raju does not join Indian Army, then he is not courageous.

3.

If Raju join Indian Army, then he is not courageous

4.

If Raju join Indian Army, then he is courageous.

Question Type : MCQ

Question ID : 37135116213

Option 1 ID : 37135164851

Option 2 ID : 37135164849

Option 3 ID : 37135164850

Option 4 ID : 37135164852

Status : Answered

Chosen Option : 2

Q.47 If the radius of a circle increases at the rate of 7 cm/sec , then the rate of increase of its area after 10 minutes is

Ans

1. $1,84,800 \text{ cm}^2/\text{sec}$

2. $1,64,800 \text{ cm}^2/\text{sec}$

3. $1,88,400 \text{ cm}^2/\text{sec}$

4. $1,68,400 \text{ cm}^2/\text{sec}$

Question Type : MCQ

Question ID : 37135116249

Option 1 ID : 37135164995

Option 2 ID : 37135164993

Option 3 ID : 37135164996

Option 4 ID : 37135164994

Status : Answered

Chosen Option : 4

Q.48

If m_1 and m_2 are slopes of the lines represented by

$$(\sec^2\theta - \sin^2\theta)x^2 - 2\tan\theta xy + \sin^2\theta y^2 = 0, \text{ then } |m_1 - m_2| =$$

Ans

1. 1

2. 2

3. 4

4. 3

Question Type : MCQ

Question ID : 37135116211

Option 1 ID : 37135164844

Option 2 ID : 37135164843

Option 3 ID : 37135164841

Option 4 ID : 37135164842

Status : Answered

Chosen Option : 1

Q.49

If the planes $2x - 5y + z = 8$ and $2\lambda x - 15y + \lambda z + 6 = 0$ are parallel to each

other, then value of λ is

Ans

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

2. -3

3. 2

4. 3

Question Type : MCQ

Question ID : 37135116224

Option 1 ID : 37135164893

Option 2 ID : 37135164895

Option 3 ID : 37135164896

Option 4 ID : 37135164894

Status : Answered

Chosen Option : 4

Q.50

The centre and radius of a circle $x = 4a \left(\frac{1-t^2}{1+t^2} \right)$, $y = \frac{8at}{1+t^2}$, are respectively

Ans

1. $(0, 0)$ and $3a$ units

2. $(0, 0)$ and $4a$ units

3. $(0, 0)$ and $2a$ units

4. $(0, 0)$ and a units

Question Type : MCQ

Question ID : 37135116245

Option 1 ID : 37135164980

Option 2 ID : 37135164979

Option 3 ID : 37135164977

Option 4 ID : 37135164978

Status : Answered

Chosen Option : 3