JEE1 OP! Apr5 S2

JEE April 2024

Application No	[redacted]
Candidate Name	
Roll No	
Test Date	05/04/2024
Test Time	3:00 PM - 6:00 PM
Subject	B. Tech

Section : **Mathematics Section A**

Q.1 60 words can be made using all the letters of the word BHBJO, with or without meaning. If these words are written as in a dictionary, then the 50^{th} word is :

Options

1. OBBJH
2. JBBOH
3. HBBJO
4. OBBHJ

Question Type : **MCQ**
Question ID : **87827055703**
Option 1 ID : **878270219072**
Option 2 ID : **878270219074**
Option 3 ID : **878270219073**
Option 4 ID : **878270219071**
Status : **Answered**
Chosen Option : **2**

Q.2 Let the set $S=\{2, 4, 8, 16, \ldots, 512\}$ be partitioned into 3 sets A, B, C with equal number of elements such that $A \cup B \cup C=S$ and $A \cap B=B \cap C=A \cap C=\phi$. The maximum number of such possible partitions of S is equal to :

Options

1. 1680
2. 1520
3. 1710
4. 1640

Question Type : **MCQ**
Question ID : **87827055698**
Option 1 ID : **878270219053**
Option 2 ID : **878270219052**
Option 3 ID : **878270219051**
Option 4 ID : **878270219054**
Status : **Not Answered**
Chosen Option : **--**

Q.3

The area enclosed between the curves $y=x|x|$ and $y=x-|x|$ is :

Options

1. 1
2. $\frac{8}{3}$
3. $\frac{4}{3}$
4. $\frac{2}{3}$

Question Type : **MCQ**
Question ID : **87827055709**
Option 1 ID : **878270219095**
Option 2 ID : **878270219098**
Option 3 ID : **878270219097**
Option 4 ID : **878270219096**
Status : **Not Answered**
Chosen Option : **--**

Q.4

If the constant term in the expansion of $\left(\frac{\sqrt[5]{3}}{x}+\frac{2x}{\sqrt[3]{5}}\right)^{12}$, $x\neq 0$, is $\alpha\times 2^8\times\sqrt[5]{3}$, then 25α is equal to :

Options

1. 639
2. 693
3. 742
4. 724

Question Type : **MCQ**
Question ID : **87827055706**
Option 1 ID : **878270219084**
Option 2 ID : **878270219086**
Option 3 ID : **878270219083**
Option 4 ID : **878270219085**
Status : **Answered**
Chosen Option : **2**

Q.5

Consider three vectors $\vec{a}, \vec{b}, \vec{c}$. Let $|\vec{a}| = 2, |\vec{b}| = 3$ and $\vec{a} = \vec{b} \times \vec{c}$. If $\alpha \in \left[0, \frac{\pi}{3}\right]$ is the angle between the vectors $\vec{b}$ and $\vec{c}$, then the minimum value of $27|\vec{c} - \vec{a}|^2$ is equal to :

Options

1. 124
2. 110
3. 105
4. 121

Question Type : **MCQ**
Question ID : **87827055716**
Option 1 ID : **878270219124**
Option 2 ID : **878270219125**
Option 3 ID : **878270219123**
Option 4 ID : **878270219126**
Status : **Not Answered**
Chosen Option : **--**

Q.6

Let $\beta(m, n) = \int_0^1 x^{m-1} (1-x)^{n-1} dx, m, n > 0$. If $\int_0^1 (1-x^{10})^{20} dx = a \times \beta(b, c)$, then $100(a+b+c)$ equals _____.

Options

1. 1021
2. 1120
3. 2012
4. 2120

Question Type : **MCQ**
Question ID : **87827055708**
Option 1 ID : **878270219093**
Option 2 ID : **878270219094**
Option 3 ID : **878270219092**
Option 4 ID : **878270219091**
Status : **Not Answered**
Chosen Option : **--**

Q.7

Let (α, β, γ) be the image of the point $(8, 5, 7)$ in the line $\frac{x-1}{2} = \frac{y+1}{3} = \frac{z-2}{5}$. Then $\alpha+\beta+\gamma$ is equal to :

Options

1. 18
2. 16
3. 20
4. 14

Question Type : **MCQ**
Question ID : **87827055714**
Option 1 ID : **878270219116**
Option 2 ID : **878270219117**
Option 3 ID : **878270219115**
Option 4 ID : **878270219118**
Status : **Marked For Review**
Chosen Option : **4**

Q.8

For $x \geq 0$, the least value of K, for which $4^{1+x} + 4^{1-x}$, $\frac{K}{2}$, $16^x + 16^{-x}$ are three consecutive terms of an A.P., is equal to :

Options

1. 4
2. 10
3. 16
4. 8

Question Type : **MCQ**
Question ID : **87827055705**
Option 1 ID : **878270219081**
Option 2 ID : **878270219079**
Option 3 ID : **878270219082**
Option 4 ID : **878270219080**
Status : **Not Answered**
Chosen Option : **--**

Q.9

If $y(\theta) = \dfrac{2\cos\theta + \cos 2\theta}{\cos 3\theta + 4\cos 2\theta + 5\cos\theta + 2}$, then at $\theta = \dfrac{\pi}{2}$, $y'' + y' + y$ is equal to :

Options

1. $\dfrac{1}{2}$
2. $\dfrac{3}{2}$
3. 2
4. 1

Question Type : **MCQ**
Question ID : **87827055717**
Option 1 ID : **878270219127**
Option 2 ID : **878270219129**
Option 3 ID : **878270219130**
Option 4 ID : **878270219128**
Status : **Not Answered**
Chosen Option : **--**

Q.10

Let $S_1 = \{z \in \mathbf{C} : |z| \le 5\}$, $S_2 = \left\{z \in \mathbf{C} : \text{Im}\left(\dfrac{z + 1 - \sqrt{3}\,i}{1 - \sqrt{3}\,i}\right) \ge 0\right\}$ and $S_3 = \{z \in \mathbf{C} : \text{Re}(z) \ge 0\}$. Then the area of the region $S_1 \cap S_2 \cap S_3$ is :

Options

1. $\dfrac{125\,\pi}{24}$
2. $\dfrac{125\,\pi}{6}$
3. $\dfrac{125\,\pi}{12}$
4. $\dfrac{125\,\pi}{4}$

Question Type : **MCQ**
Question ID : **87827055700**
Option 1 ID : **878270219059**
Option 2 ID : **878270219061**
Option 3 ID : **878270219062**
Option 4 ID : **878270219060**
Status : **Not Answered**
Chosen Option : **--**

Q.11 Let the circle $C_1 : x^2+y^2-2(x+y)+1=0$ and C_2 be a circle having centre at $(-1, 0)$ and radius 2. If the line of the common chord of C_1 and C_2 intersects the y-axis at the point P, then the square of the distance of P from the centre of C_1 is :

Options

1. 6
2. 2
3. 4
4. 1

Question Type : **MCQ**
Question ID : **87827055712**
Option 1 ID : **878270219110**
Option 2 ID : **878270219108**
Option 3 ID : **878270219109**
Option 4 ID : **878270219107**
Status : **Not Answered**
Chosen Option : **--**

Q.12 The differential equation of the family of circles passing through the origin and having centre at the line $y=x$ is :

Options

1. $(x^2-y^2+2xy)dx=(x^2-y^2-2xy)dy$
2. $(x^2+y^2+2xy)dx=(x^2+y^2-2xy)dy$
3. $(x^2+y^2-2xy)dx=(x^2+y^2+2xy)dy$
4. $(x^2-y^2+2xy)dx=(x^2-y^2+2xy)dy$

Question Type : **MCQ**
Question ID : **87827055710**
Option 1 ID : **878270219099**
Option 2 ID : **878270219102**
Option 3 ID : **878270219100**
Option 4 ID : **878270219101**
Status : **Not Answered**
Chosen Option : **--**

Q.13 Let $f:[-1,2]\to \mathbf{R}$ be given by $f(x)=2x^2+x+[x^2]-[x]$, where [t] denotes the greatest integer less than or equal to t. The number of points, where f is not continuous, is :

Options

1. 6
2. 5
3. 3
4. 4

Question Type : **MCQ**
Question ID : **87827055707**
Option 1 ID : **878270219087**
Option 2 ID : **878270219088**
Option 3 ID : **878270219090**
Option 4 ID : **878270219089**
Status : **Not Answered**
Chosen Option : **--**

Q.14 Let $f, g:\mathbf{R}\to\mathbf{R}$ be defined as :

$$f(x)=|x-1| \text{ and } g(x)=\begin{cases} e^x, & x\geq 0 \\ x+1, & x\leq 0. \end{cases}$$

Then the function $f(g(x))$ is

Options

1. neither one-one nor onto.
2. both one-one and onto.
3. one-one but not onto.
4. onto but not one-one.

Question Type : **MCQ**
Question ID : **87827055699**
Option 1 ID : **878270219058**
Option 2 ID : **878270219055**
Option 3 ID : **878270219056**
Option 4 ID : **878270219057**
Status : **Not Answered**
Chosen Option : **--**

Q.15 The coefficients a, b, c in the quadratic equation $ax^2+bx+c=0$ are from the set {1, 2, 3, 4, 5, 6}. If the probability of this equation having one real root bigger than the other is p, then 216p equals :

Options

1. 19
2. 38
3. 57
4. 76

Question Type : **MCQ**
Question ID : **87827055704**
Option 1 ID : **878270219075**
Option 2 ID : **878270219076**
Option 3 ID : **878270219077**
Option 4 ID : **878270219078**
Status : **Not Answered**
Chosen Option : **--**

Q.16 Let A(−1, 1) and B(2, 3) be two points and P be a variable point above the line AB such that the area of ΔPAB is 10. If the locus of P is $ax+by=15$, then $5a+2b$ is :

Options

1. 6
2. 4
3. $-\frac{12}{5}$
4. $-\frac{6}{5}$

Question Type : **MCQ**
Question ID : **87827055713**
Option 1 ID : **878270219112**
Option 2 ID : **878270219111**
Option 3 ID : **878270219114**
Option 4 ID : **878270219113**
Status : **Not Answered**
Chosen Option : **--**

Q.17

Let $\alpha\beta \neq 0$ and $A = \begin{bmatrix} \beta & \alpha & 3 \\ \alpha & \alpha & \beta \\ -\beta & \alpha & 2\alpha \end{bmatrix}$. If $B = \begin{bmatrix} 3\alpha & -9 & 3\alpha \\ -\alpha & 7 & -2\alpha \\ -2\alpha & 5 & -2\beta \end{bmatrix}$ is the matrix of cofactors of the elements of A, then det(AB) is equal to :

Options

1. 216
2. 343
3. 64
4. 125

Question Type : **MCQ**
Question ID : **87827055702**
Option 1 ID : **878270219069**
Option 2 ID : **878270219070**
Option 3 ID : **878270219068**
Option 4 ID : **878270219067**
Status : **Not Answered**
Chosen Option : **--**

Q.18

The values of m, n, for which the system of equations

$$x + y + z = 4,$$
$$2x + 5y + 5z = 17,$$
$$x + 2y + mz = n$$

has infinitely many solutions, satisfy the equation :

Options

1. $m^2 + n^2 - m - n = 46$
2. $m^2 + n^2 + mn = 68$
3. $m^2 + n^2 + m + n = 64$
4. $m^2 + n^2 - mn = 39$

Question Type : **MCQ**
Question ID : **87827055701**
Option 1 ID : **878270219066**
Option 2 ID : **878270219063**
Option 3 ID : **878270219065**
Option 4 ID : **878270219064**
Status : **Answered**
Chosen Option : **4**

Q.19 Let ABCD and AEFG be squares of side 4 and 2 units, respectively. The point E is on the line segment AB and the point F is on the diagonal AC. Then the radius r of the circle passing through the point F and touching the line segments BC and CD satisfies :

Options

1. $r=1$
2. $r^2-8r+8=0$
3. $2r^2-8r+7=0$
4. $2r^2-4r+1=0$

Question Type : **MCQ**
Question ID : **87827055711**
Option 1 ID : **878270219103**
Option 2 ID : **878270219104**
Option 3 ID : **878270219105**
Option 4 ID : **878270219106**
Status : **Not Answered**
Chosen Option : **--**

Q.20 Let $\vec{a}=2\hat{i}+5\hat{j}-\hat{k}$, $\vec{b}=2\hat{i}-2\hat{j}+2\hat{k}$ and $\vec{c}$ be three vectors such that $\left(\vec{c}+\hat{i}\right)\times\left(\vec{a}+\vec{b}+\hat{i}\right)=\vec{a}\times\left(\vec{c}+\hat{i}\right)$. If $\vec{a}\cdot\vec{c}=-29$, then $\vec{c}\cdot\left(-2\hat{i}+\hat{j}+\hat{k}\right)$ is equal to :

Options

1. 15
2. 12
3. 5
4. 10

Question Type : **MCQ**
Question ID : **87827055715**
Option 1 ID : **878270219119**
Option 2 ID : **878270219120**
Option 3 ID : **878270219122**
Option 4 ID : **878270219121**
Status : **Answered**
Chosen Option : **1**

Section : **Mathematics Section B**

Q.21 Let the maximum and minimum values of $\left(\sqrt{8x-x^2-12}-4\right)^2+(x-7)^2$, $x\in\mathbf{R}$ be M and m, respectively. Then M^2-m^2 is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055721**
Status : **Not Answered**

Q.22 Let the point $(-1, \alpha, \beta)$ lie on the line of the shortest distance between the lines $\frac{x+2}{-3} = \frac{y-2}{4} = \frac{z-5}{2}$ and $\frac{x+2}{-1} = \frac{y+6}{2} = \frac{z-1}{0}$. Then $(\alpha-\beta)^2$ is equal to _____.

Given **0**
Answer :

Question Type : **SA**
Question ID : **87827055725**
Status : **Answered**

Q.23 The number of real solutions of the equation $x|x+5|+2|x+7|-2=0$ is _____.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055727**
Status : **Not Answered**

Q.24 Let $y=y(x)$ be the solution of the differential equation

$$\frac{dy}{dx} + \frac{2x}{(1+x^2)^2} y = xe^{\frac{1}{(1+x^2)}} ; y(0) = 0 .$$

Then the area enclosed by the curve $f(x) = y(x)\, e^{-\frac{1}{(1+x^2)}}$ and the line $y-x=4$ is _____.

Given **18**
Answer :

Question Type : **SA**
Question ID : **87827055723**
Status : **Answered**

Q.25 Let a line perpendicular to the line $2x-y=10$ touch the parabola $y^2=4(x-9)$ at the point P. The distance of the point P from the centre of the circle $x^2+y^2-14x-8y+56=0$ is _____.

Given **10**
Answer :

Question Type : **SA**
Question ID : **87827055724**
Status : **Answered**

Q.26 The number of solutions of $\sin^2 x + (2+2x-x^2)\sin x - 3(x-1)^2 = 0$, where $-\pi \le x \le \pi$, is _____.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055718**
Status : **Not Answered**

Q.27

Let the mean and the standard deviation of the probability distribution

X	α	1	0	– 3
P(X)	$\frac{1}{3}$	K	$\frac{1}{6}$	$\frac{1}{4}$

be μ and σ, respectively. If $\sigma-\mu=2$, then $\sigma+\mu$ is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055726**
Status : **Not Answered**

Q.28

If $1+\frac{\sqrt{3}-\sqrt{2}}{2\sqrt{3}}+\frac{5-2\sqrt{6}}{18}+\frac{9\sqrt{3}-11\sqrt{2}}{36\sqrt{3}}+\frac{49-20\sqrt{6}}{180}+\ldots \text{upto}\,\infty=2+\left(\sqrt{\frac{b}{a}}+1\right)\log_e\left(\frac{a}{b}\right)$,

where a and b are integers with gcd(a, b) = 1, then 11a + 18b is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055719**
Status : **Not Answered**

Q.29

If $f(t)=\int_0^{\pi}\frac{2x\,dx}{1-\cos^2 t\sin^2 x}$, $0<t<\pi$, then the value of $\int_0^{\frac{\pi}{2}}\frac{\pi^2\,dt}{f(t)}$ equals _____.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055722**
Status : **Not Answered**

Q.30

Let a > 0 be a root of the equation $2x^2+x-2=0$. If $\lim\limits_{x\to\frac{1}{a}}\frac{16\left(1-\cos(2+x-2x^2)\right)}{(1-ax)^2}=\alpha+\beta\sqrt{17}$,

where $\alpha, \beta \in Z$, then $\alpha+\beta$ is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055720**
Status : **Not Answered**

Section : **Physics Section A**

Q.31

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

	List-I		**List-II**
(A)	A force that restores an elastic body of unit area to its original state	(I)	Bulk modulus
(B)	Two equal and opposite forces parallel to opposite faces	(II)	Young's modulus
(C)	Forces perpendicular everywhere to the surface per unit area same everywhere	(III)	Stress
(D)	Two equal and opposite forces perpendicular to opposite faces	(IV)	Shear modulus

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

Options 1.

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

2.

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

3.

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

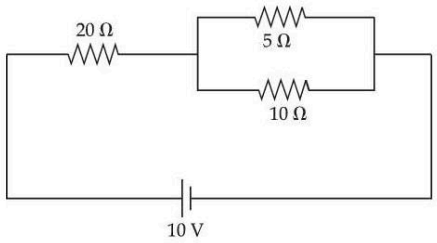
4.

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

Question Type : **MCQ**
Question ID : **87827055735**
Option 1 ID : **878270219170**
Option 2 ID : **878270219169**
Option 3 ID : **878270219171**
Option 4 ID : **878270219172**
Status : **Answered**
Chosen Option : **4**

Q.32

The ratio of heat dissipated per second through the resistance 5 Ω and 10 Ω in the circuit given below is :



Options 1.

4 : 1

2.

2 : 1

3.

1 : 1

4.

1 : 2

Question Type : **MCQ**
Question ID : **87827055739**
Option 1 ID : **878270219188**
Option 2 ID : **878270219186**
Option 3 ID : **878270219187**
Option 4 ID : **878270219185**
Status : **Answered**
Chosen Option : **2**

Q.33

A body is moving unidirectionally under the influence of a constant power source. Its displacement in time t is proportional to :

Options 1.

$t^{3/2}$

2.

t

3.

t^2

4.

$t^{2/3}$

Question Type : **MCQ**
Question ID : **87827055732**
Option 1 ID : **878270219158**
Option 2 ID : **878270219157**
Option 3 ID : **878270219160**
Option 4 ID : **878270219159**
Status : **Answered**
Chosen Option : **2**

Q.34

A particle moves in x-y plane under the influence of a force $\vec{F}$ such that its linear momentum is $\vec{p}(t) = \hat{i}\cos(kt) - \hat{j}\sin(kt)$. If k is constant, the angle between $\vec{F}$ and $\vec{P}$ will be :

Options 1.

$\frac{\pi}{2}$

2.

$\frac{\pi}{6}$

3.

$\frac{\pi}{4}$

4.

$\frac{\pi}{3}$

Question Type : **MCQ**
Question ID : **87827055731**
Option 1 ID : **878270219153**
Option 2 ID : **878270219156**
Option 3 ID : **878270219155**
Option 4 ID : **878270219154**
Status : **Answered**
Chosen Option : **1**

Q.35

The vehicles carrying inflammable fluids usually have metallic chains touching the ground :

Options 1.

To alert other vehicles

2.

To protect tyres from catching dirt from ground

3.

It is a custom

4.

To conduct excess charge due to air friction to ground and prevent sparking

Question Type : **MCQ**
Question ID : **87827055737**
Option 1 ID : **878270219178**
Option 2 ID : **878270219177**
Option 3 ID : **878270219180**
Option 4 ID : **878270219179**
Status : **Answered**
Chosen Option : **4**

Q.36

Given below are two statements :

Statement I : When the white light passed through a prism, the red light bends lesser than yellow and violet.

Statement II : The refractive indices are different for different wavelengths in dispersive medium.

In the light of the above statements, chose the **correct** answer from the options given below :

Options 1.

Statement I is false but **Statement II** is true

2.

Statement I is true but **Statement II** is false

3.

Both **Statement I** and **Statement II** are false

4.

Both **Statement I** and **Statement II** are true

Question Type : **MCQ**
Question ID : **87827055742**
Option 1 ID : **878270219200**
Option 2 ID : **878270219199**
Option 3 ID : **878270219198**
Option 4 ID : **878270219197**
Status : **Answered**
Chosen Option : **4**

Q.37

Which of the following statement is **not** true about stopping potential (V_0) ?

Options 1.

It increases with increase in intensity of the incident light.

2.

It depends on the nature of emitter material.

3.

It is 1/e times the maximum kinetic energy of electrons emitted.

4.

It depends upon frequency of the incident light.

Question Type : **MCQ**
Question ID : **87827055744**
Option 1 ID : **878270219207**
Option 2 ID : **878270219206**
Option 3 ID : **878270219208**
Option 4 ID : **878270219205**
Status : **Answered**
Chosen Option : **1**

Q.38

A man carrying a monkey on his shoulder does cycling smoothly on a circular track of radius 9 m and completes 120 resolutions in 3 minutes. The magnitude of centripetal acceleration of monkey is (in m/s^2) :

Options 1.

$4\pi^2\ ms^{-2}$

2.

Zero

3.

$57600\pi^2\ ms^{-2}$

4.

$16\pi^2\ ms^{-2}$

Question Type : **MCQ**
Question ID : **87827055729**
Option 1 ID : **878270219146**
Option 2 ID : **878270219145**
Option 3 ID : **878270219148**
Option 4 ID : **878270219147**
Status : **Marked For Review**
Chosen Option : **1**

Q.39

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

	List-I EM-Wave		**List-II** Wavelength Range
(A)	Infra-red	(I)	$< 10^{-3}$ nm
(B)	Ultraviolet	(II)	400 nm to 1 nm
(C)	X-rays	(III)	1 mm to 700 nm
(D)	Gamma rays	(IV)	1 nm to 10^{-3} nm

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

Options 1.

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

2.

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

3.

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

4.

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

Question Type : **MCQ**
Question ID : **87827055741**
Option 1 ID : **878270219194**
Option 2 ID : **878270219196**
Option 3 ID : **878270219195**
Option 4 ID : **878270219193**
Status : **Answered**
Chosen Option : **1**

Q.40

During an adiabatic process, if the pressure of a gas is found to be proportional to the cube of its absolute temperature, then the ratio of $\frac{C_P}{C_V}$ for the gas is :

Options 1.

$\frac{5}{3}$

2.

$\frac{7}{5}$

3.

$\frac{9}{7}$

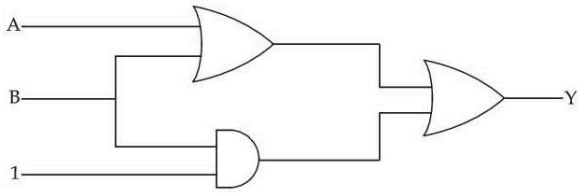
4.

$\frac{3}{2}$

Question Type : **MCQ**
Question ID : **87827055746**
Option 1 ID : **878270219214**
Option 2 ID : **878270219215**
Option 3 ID : **878270219216**
Option 4 ID : **878270219213**
Status : **Answered**
Chosen Option : **4**

Q.41

The output (Y) of logic circuit given below is 0 only when :



Options 1.

$A=1, B=1$

2.

$A=0, B=1$

3.

$A=1, B=0$

4.

$A=0, B=0$

Question Type : **MCQ**
Question ID : **87827055747**
Option 1 ID : **878270219220**
Option 2 ID : **878270219219**
Option 3 ID : **878270219218**
Option 4 ID : **878270219217**
Status : **Answered**
Chosen Option : **4**

Q.42

A vernier callipers has 20 divisions on the vernier scale, which coincides with 19^{th} division on the main scale. The least count of the instrument is 0.1 mm. One main scale division is equal to _____ mm.

Options 1.

0.5

2.

2

3.

1

4.

5

Question Type : **MCQ**
Question ID : **87827055733**
Option 1 ID : **878270219164**
Option 2 ID : **878270219162**
Option 3 ID : **878270219163**
Option 4 ID : **878270219161**
Status : **Answered**
Chosen Option : **2**

Q.43

A satellite revolving around a planet in stationary orbit has time period 6 hours. The mass of planet is one-fourth the mass of earth. The radius orbit of planet is :
(Given = Radius of geo-stationary orbit for earth is 4.2×10^4 km)

Options 1.

1.05×10^4 km

2.

1.4×10^4 km

3.

8.4×10^4 km

4.

1.68×10^5 km

Question Type : **MCQ**
Question ID : **87827055734**
Option 1 ID : **878270219167**
Option 2 ID : **878270219165**
Option 3 ID : **878270219166**
Option 4 ID : **878270219168**
Status : **Not Answered**
Chosen Option : **--**

Q.44

A heavy box of mass 50 kg is moving on a horizontal surface. If co-efficient of kinetic friction between the box and horizontal surface is 0.3 then force of kinetic friction is :

Options 1.

147 N

2.

14.7 N

3.

1.47 N

4.

1470 N

Question Type : **MCQ**
Question ID : **87827055730**
Option 1 ID : **878270219151**
Option 2 ID : **878270219150**
Option 3 ID : **878270219149**
Option 4 ID : **878270219152**
Status : **Answered**
Chosen Option : **1**

Q.45

A galvanometer of resistance 100 Ω when connected in series with 400 Ω measures a voltage of upto 10 V. The value of resistance required to convert the galvanometer into ammeter to read upto 10 A is $x \times 10^{-2}$ Ω. The value of x is :

Options 1.

2

2.

800

3.

200

4.

20

Question Type : **MCQ**
Question ID : **87827055743**
Option 1 ID : **878270219202**
Option 2 ID : **878270219204**
Option 3 ID : **878270219203**
Option 4 ID : **878270219201**
Status : **Answered**
Chosen Option : **3**

Q.46

The angular momentum of an electron in a hydrogen atom is proportional to :
(Where r is the radius of orbit of electron)

Options 1.

$\frac{1}{\sqrt{r}}$

2.

$\frac{1}{r}$

3.

r

4.

$\sqrt{r}$

Question Type : **MCQ**
Question ID : **87827055745**
Option 1 ID : **878270219210**
Option 2 ID : **878270219212**
Option 3 ID : **878270219211**
Option 4 ID : **878270219209**
Status : **Answered**
Chosen Option : **3**

Q.47

A series LCR circuit is subjected to an ac signal of 200 V, 50 Hz. If the voltage across the inductor (L = 10 mH) is 31.4 V, then the current in this circuit is _____.

Options 1.

10 A

2.

10 mA

3.

68 A

4.

63 A

Question Type : **MCQ**
Question ID : **87827055738**
Option 1 ID : **878270219181**
Option 2 ID : **878270219182**
Option 3 ID : **878270219184**
Option 4 ID : **878270219183**
Status : **Answered**
Chosen Option : **1**

Q.48

What is the dimensional formula of ab^{-1} in the equation $\left(P + \frac{a}{V^2}\right)(V - b) = RT$, where letters have their usual meaning.

Options 1.

$[M^0L^3T^{-2}]$

2.

$[M^{-1}L^5T^3]$

3.

$[M^6L^7T^4]$

4.

$[ML^2T^{-2}]$

Question Type : **MCQ**
Question ID : **87827055728**
Option 1 ID : **878270219143**
Option 2 ID : **878270219142**
Option 3 ID : **878270219144**
Option 4 ID : **878270219141**
Status : **Answered**
Chosen Option : **4**

Q.49

If n is the number density and d is the diameter of the molecule, then the average distance covered by a molecule between two successive collisions (i.e. mean free path) is represented by :

Options 1.

$$\frac{1}{\sqrt{2n\pi d^2}}$$

2.

$$\frac{1}{\sqrt{2}\ n\pi d^2}$$

3.

$$\sqrt{2}\ n\pi\ d^2$$

4.

$$\frac{1}{\sqrt{2}\ n^2\pi^2 d^2}$$

Question Type : **MCQ**
Question ID : **87827055736**
Option 1 ID : **878270219174**
Option 2 ID : **878270219173**
Option 3 ID : **878270219175**
Option 4 ID : **878270219176**
Status : **Marked For Review**
Chosen Option : **2**

Q.50

The electrostatic force $\left(\vec{F}_1\right)$ and magnetic force $\left(\vec{F}_2\right)$ acting on a charge q moving with velocity v can be written :

Options 1.

$$\vec{F}_1 = q\vec{E},\ \vec{F}_2 = q(\vec{V}\times\vec{B})$$

2.

$$\vec{F}_1 = q\vec{B},\ \vec{F}_2 = q(\vec{B}\times\vec{V})$$

3.

$$\vec{F}_1 = q\vec{E},\ \vec{F}_2 = q(\vec{B}\times\vec{V})$$

4.

$$\vec{F}_1 = q\vec{V}\cdot\vec{E},\ \vec{F}_2 = q(\vec{B}\cdot\vec{V})$$

Question Type : **MCQ**
Question ID : **87827055740**
Option 1 ID : **878270219190**
Option 2 ID : **878270219191**
Option 3 ID : **878270219189**
Option 4 ID : **878270219192**
Status : **Answered**
Chosen Option : **1**

Section : **Physics Section B**

Q.51

A sonometer wire of resonating length 90 cm has a fundamental frequency of 400 Hz when kept under some tension. The resonating length of the wire with fundamental frequency of 600 Hz under same tension _____ cm.

Given **60**
Answer :

Question Type : **SA**
Question ID : **87827055752**
Status : **Answered**

Q.52

A wire of resistance 20 Ω is divided into 10 equal parts, resulting pairs. A combination of two parts are connected in parallel and so on. Now resulting pairs of parallel combination are connected in series. The equivalent resistance of final combination is _____Ω.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055753**
Status : **Not Answered**

Q.53

A solenoid of length 0.5 m has a radius of 1 cm and is made up of 'm' number of turns. It carries a current of 5 A. If the magnitude of the magnetic field inside the solenoid is 6.28×10^{-3}T then the value of m is _____.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055754**
Status : **Not Answered**

Q.54

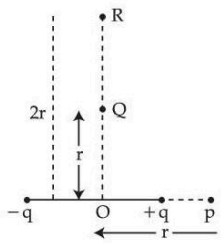
The shortest wavelength of the spectral lines in the Lyman series of hydrogen spectrum is 915 Å. The longest wavelength of spectral lines in the Balmer series will be _____ Å.

Given **6588**
Answer :

Question Type : **SA**
Question ID : **87827055757**
Status : **Answered**

Q.55

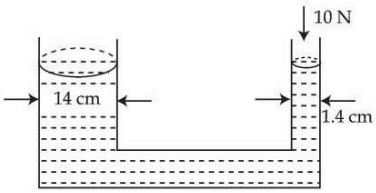
The electric field at point p due to an electric dipole is E. The electric field at point R on equitorial line will be $\frac{E}{x}$. The value of x :



Given **16**
Answer :

Question Type : **SA**
Question ID : **87827055755**
Status : **Answered**

Q.56



A hydraulic press containing water has two arms with diameters as mentioned in the figure. A force of 10 N is applied on the surface of water in the thinner arm. The force required to be applied on the surface of water in the thicker arm to maintain equilibrium of water is _____ N.

Given **1000**
Answer :

Question Type : **SA**
Question ID : **87827055751**
Status : **Answered**

Q.57

The maximum height reached by a projectile is 64 m. If the initial velocity is halved, the new maximum height of the projectile is _____ m.

Given **16**
Answer :

Question Type : **SA**
Question ID : **87827055748**
Status : **Answered**

Q.58

A hollow sphere is rolling on a plane surface about its axis of symmetry. The ratio of rotational kinetic energy to its total kinetic energy is $\frac{x}{5}$. The value of x is _____.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055749**
Status : **Not Answered**

Q.59

The current in an inductor is given by $I=(3t+8)$ where t is in second. The magnitude of induced emf produced in the inductor is 12 mV. The self-inductance of the inductor _____ mH.

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055756**
Status : **Not Answered**

Q.60

In a single slit experiment, a parallel beam of green light of wavelength 550 nm passes through a slit of width 0.20 mm. The transmitted light is collected on a screen 100 cm away. The distance of first order minima from the central maximum will be $x\times10^{-5}$ m. The value of x is :

Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055750**
Status : **Not Answered**

Section : **Chemistry Section A**

Q.61

$$CH_3CH_2-OH \xrightarrow[\text{(ii) } KMnO_4]{\text{(i) Jone's Reagent}} P$$

(iii) NaOH, CaO, Δ

Consider the above reaction sequence and identify the major product P.

Options

1. Methoxymethane
2. Methanoic acid
3. Methane
4. Methanal

Question Type : **MCQ**
Question ID : **87827055775**
Option 1 ID : **878270219302**
Option 2 ID : **878270219301**
Option 3 ID : **878270219300**
Option 4 ID : **878270219299**
Status : **Not Answered**
Chosen Option : **--**

Q.62

Given below are two statements :

Statement I : On passing $HCl_{(g)}$ through a saturated solution of $BaCl_2$, at room temperature white turbidity appears.

Statement II : When HCl gas is passed through a saturated solution of NaCl, sodium chloride is precipitated due to common ion effect.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

Options

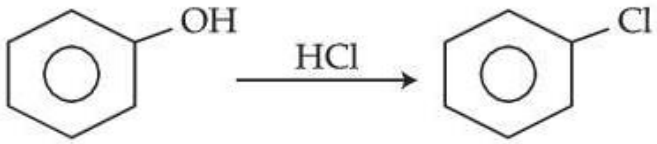
1. **Statement I** is correct but **Statement II** is incorrect
2. Both **Statement I** and **Statement II** are incorrect
3. **Statement I** is incorrect but **Statement II** is correct
4. Both **Statement I** and **Statement II** are correct

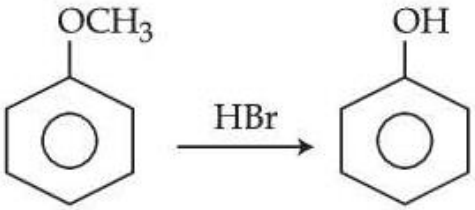
Question Type : **MCQ**
Question ID : **87827055760**
Option 1 ID : **878270219241**
Option 2 ID : **878270219240**
Option 3 ID : **878270219242**
Option 4 ID : **878270219239**
Status : **Not Answered**
Chosen Option : **--**

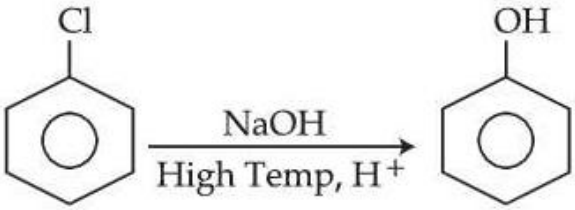
Q.63

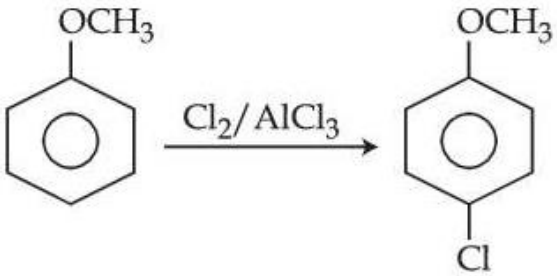
Which one of the following reactions is NOT possible ?

Options

1. 

2. 

3. 

4. 

Question Type : **MCQ**
Question ID : **87827055773**
Option 1 ID : **878270219291**
Option 2 ID : **878270219294**
Option 3 ID : **878270219292**
Option 4 ID : **878270219293**
Status : **Marked For Review**
Chosen Option : **1**

Q.64

The metal atom present in the complex MABXL (where A, B, X and L are unidentate ligands and M is metal) involves sp^3 hybridization. The number of geometrical isomers exhibited by the complex is :

Options

1. 2
2. 4
3. 0
4. 3

Question Type : **MCQ**
Question ID : **87827055767**
Option 1 ID : **878270219268**
Option 2 ID : **878270219270**
Option 3 ID : **878270219267**
Option 4 ID : **878270219269**
Status : **Not Answered**
Chosen Option : **--**

Q.65 Match **List - I** with **List - II**.

	List - I (Pair of Compounds)		**List - II (Isomerism)**
(A)	n-propanol and Isopropanol	(I)	Metamerism
(B)	Methoxypropane and ethoxyethane	(II)	Chain Isomerism
(C)	Propanone and propanal	(III)	Position Isomerism
(D)	Neopentane and Isopentane	(IV)	Functional Isomerism

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

Options

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

Question Type : **MCQ**
Question ID : **87827055771**
Option 1 ID : **878270219283**
Option 2 ID : **878270219286**
Option 3 ID : **878270219284**
Option 4 ID : **878270219285**
Status : **Marked For Review**
Chosen Option : **4**

Q.66 Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : NH_3 and NF_3 molecule have pyramidal shape with a lone pair of electrons on nitrogen atom. The resultant dipole moment of NH_3 is greater than that of NF_3.

Reason (R) : In NH_3, the orbital dipole due to lone pair is in the same direction as the resultant dipole moment of the N – H bonds. F is the most electronegative element.

In the light of the above statements, choose the **correct** answer from the options given below :

Options

1. **(A)** is false but **(R)** is true
2. **(A)** is true but **(R)** is false
3. Both **(A)** and **(R)** are true but **(R)** is NOT the correct explanation of **(A)**
4. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**

Question Type : **MCQ**
Question ID : **87827055759**
Option 1 ID : **878270219238**
Option 2 ID : **878270219237**
Option 3 ID : **878270219236**
Option 4 ID : **878270219235**
Status : **Answered**
Chosen Option : **4**

Q.67 The quantity of silver deposited when one coulomb charge is passed through $AgNO_3$ solution :

Options

1. 1 g of silver
2. 0.1 g atom of silver
3. 1 chemical equivalent of silver
4. 1 electrochemical equivalent of silver

Question Type : **MCQ**
Question ID : **87827055762**
Option 1 ID : **878270219247**
Option 2 ID : **878270219248**
Option 3 ID : **878270219250**
Option 4 ID : **878270219249**
Status : **Not Answered**
Chosen Option : **--**

Q.68 The number of complexes from the following with no electrons in the t_2 orbital is _____.
$TiCl_4$, $[MnO_4]^-$, $[FeO_4]^{2-}$, $[FeCl_4]^-$, $[CoCl_4]^{2-}$

Options

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

Question Type : **MCQ**
Question ID : **87827055768**
Option 1 ID : **878270219272**
Option 2 ID : **878270219273**
Option 3 ID : **878270219271**
Option 4 ID : **878270219274**
Status : **Answered**
Chosen Option : **2**

Q.69

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

	List - I		List - II
(A)	ICl	(I)	T - shape
(B)	ICl_3	(II)	Square pyramidal
(C)	ClF_5	(III)	Pentagonal bipyramidal
(D)	IF_7	(IV)	Linear

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

Options

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

Question Type : **MCQ**
Question ID : **87827055764**
Option 1 ID : **878270219255**
Option 2 ID : **878270219258**
Option 3 ID : **878270219257**
Option 4 ID : **878270219256**
Status : **Answered**
Chosen Option : **2**

Q.70

For the electro chemical cell

$$M|M^{2+}||X|X^{2-}$$

If $E^0_{(M^{2+}/M)} = 0.46\,V$ and $E^0_{(X/X^{2-})} = 0.34\,V$.

Which of the following is **correct** ?

Options

1. $E_{cell} = 0.80\ V$
2. $E_{cell} = -0.80\ V$
3. $M + X \rightarrow M^{2+} + X^{2-}$ is a spontaneous reaction
4. $M^{2+} + X^{2-} \rightarrow M + X$ is a spontaneous reaction

Question Type : **MCQ**
Question ID : **87827055761**
Option 1 ID : **878270219245**
Option 2 ID : **878270219246**
Option 3 ID : **878270219243**
Option 4 ID : **878270219244**
Status : **Answered**
Chosen Option : **4**

Q.71 While preparing crystals of Mohr's salt, dil H_2SO_4 is added to a mixture of ferrous sulphate and ammonium sulphate, before dissolving this mixture in water, dil H_2SO_4 is added here to :

Options

1. prevent the hydrolysis of ferrous sulphate
2. increase the rate of formation of crystals
3. make the medium strongly acidic
4. prevent the hydrolysis of ammonium sulphate

Question Type : **MCQ**
Question ID : **87827055769**
Option 1 ID : **878270219277**
Option 2 ID : **878270219278**
Option 3 ID : **878270219276**
Option 4 ID : **878270219275**
Status : **Not Answered**
Chosen Option : **--**

Q.72 Given below are two statements :

Statement I : The metallic radius of Na is 1.86 A° and the ionic radius of Na^+ is lesser than 1.86 A°.

Statement II : Ions are always smaller in size than the corresponding elements.

In the light of the above statements, choose the **correct** answer from the options given below :

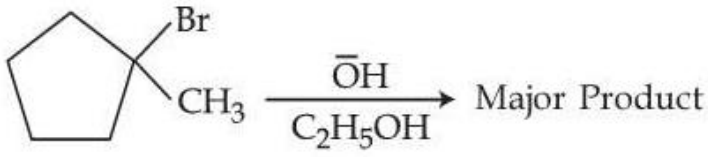
Options

1. **Statement I** is incorrect but **Statement II** is true
2. **Statement I** is correct but **Statement II** is false
3. Both **Statement I** and **Statement II** are false
4. Both **Statement I** and **Statement II** are true

Question Type : **MCQ**
Question ID : **87827055763**
Option 1 ID : **878270219254**
Option 2 ID : **878270219253**
Option 3 ID : **878270219252**
Option 4 ID : **878270219251**
Status : **Answered**
Chosen Option : **2**

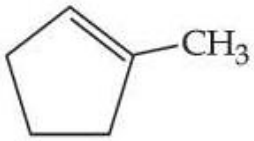
Q.73

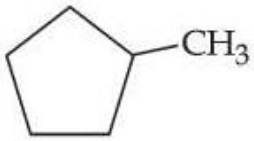
Identify the major product in the following reaction.

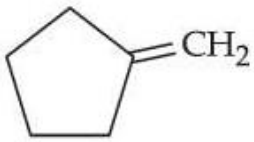


Options

1. 

2. 

3. 

4. 

Question Type : **MCQ**
Question ID : **87827055774**
Option 1 ID : **878270219297**
Option 2 ID : **878270219296**
Option 3 ID : **878270219298**
Option 4 ID : **878270219295**
Status : **Answered**
Chosen Option : **4**

Q.74

Coagulation of egg, on heating is because of :

Options

1. Denaturation of protein occurs

2. Biological property of protein remains unchanged

3. The secondary structure of protein remains unchanged

4. Breaking of the peptide linkage in the primary structure of protein occurs

Question Type : **MCQ**
Question ID : **87827055777**
Option 1 ID : **878270219310**
Option 2 ID : **878270219308**
Option 3 ID : **878270219309**
Option 4 ID : **878270219307**
Status : **Answered**
Chosen Option : **1**

Q.75 The number of ions from the following that have the ability to liberate hydrogen from a dilute acid is _____.

Ti^{2+}, Cr^{2+} and V^{2+}

Options

1. 2
2. 3
3. 1
4. 0

Question Type : **MCQ**
Question ID : **87827055766**
Option 1 ID : **878270219265**
Option 2 ID : **878270219266**
Option 3 ID : **878270219264**
Option 4 ID : **878270219263**
Status : **Not Answered**
Chosen Option : **--**

Q.76 The **correct** statements from the following are :

(A) The decreasing order of atomic radii of group 13 elements is Tl > In > Ga > Al > B.

(B) Down the group 13 electronegativity decreases from top to bottom.

(C) Al dissolves in dil. HCl and liberates H_2 but conc. HNO_3 renders Al passive by forming a protective oxide layer on the surface.

(D) All elements of group 13 exhibits highly stable +1 oxidation state.

(E) Hybridisation of Al in $[Al(H_2O)_6]^{3+}$ ion is sp^3d^2.

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

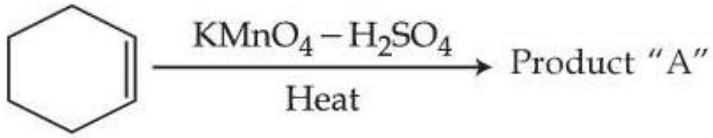
Options

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

Question Type : **MCQ**
Question ID : **87827055765**
Option 1 ID : **878270219261**
Option 2 ID : **878270219262**
Option 3 ID : **878270219260**
Option 4 ID : **878270219259**
Status : **Answered**
Chosen Option : **3**

Q.77

Consider the given chemical reaction :



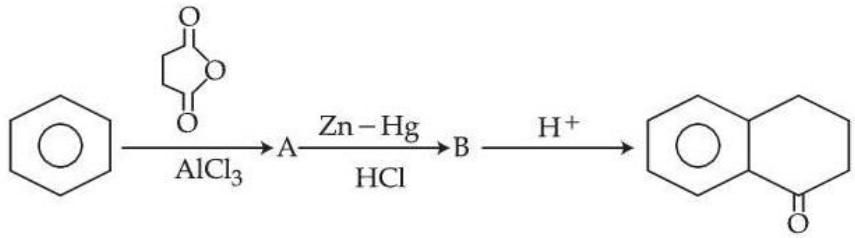
Product "A" is :

Options

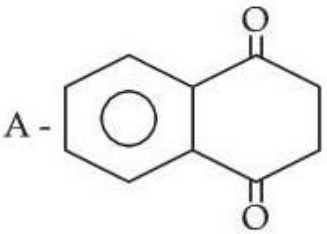
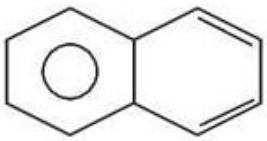
1. acetic acid
2. picric acid
3. oxalic acid
4. adipic acid

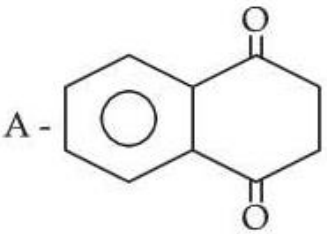
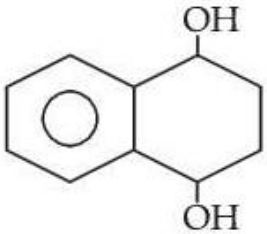
Question Type : **MCQ**
Question ID : **87827055776**
Option 1 ID : **878270219303**
Option 2 ID : **878270219306**
Option 3 ID : **878270219304**
Option 4 ID : **878270219305**
Status : **Answered**
Chosen Option : **4**

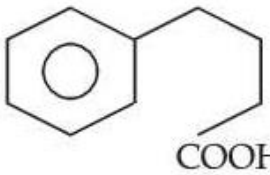
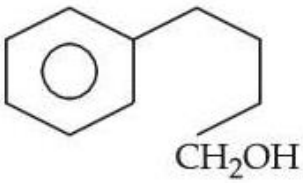
Q.78 Identify A and B in the given chemical reaction sequence :

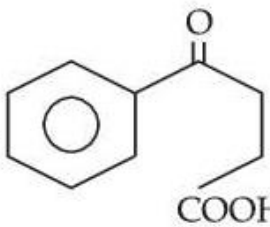
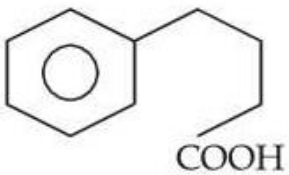


Options

1. A -  , B - 

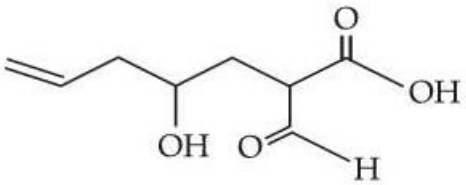
2. A -  , B - 

3. A -  , B - 

4. A -  , B - 

Question Type :	**MCQ**
Question ID :	**87827055772**
Option 1 ID :	**878270219290**
Option 2 ID :	**878270219289**
Option 3 ID :	**878270219288**
Option 4 ID :	**878270219287**
Status :	**Answered**
Chosen Option :	**4**

Q.79 The correct nomenclature for the following compound is :



Options

1. 2-carboxy-4-hydroxyhept-6-enal
2. 2-carboxy-4-hydroxyhept-7-enal
3. 2-formyl-4-hydroxyhept-6-enoic acid
4. 2-formyl-4-hydroxyhept-7-enoic acid

Question Type : **MCQ**
Question ID : **87827055770**
Option 1 ID : **878270219280**
Option 2 ID : **878270219279**
Option 3 ID : **878270219281**
Option 4 ID : **878270219282**
Status : **Answered**
Chosen Option : **1**

Q.80 The number of moles of methane required to produce 11 g $CO_2(g)$ after complete combustion is :
(Given molar mass of methane in g mol^{-1} : 16)

Options

1. 0.5
2. 0.25
3. 0.75
4. 0.35

Question Type : **MCQ**
Question ID : **87827055758**
Option 1 ID : **878270219232**
Option 2 ID : **878270219231**
Option 3 ID : **878270219233**
Option 4 ID : **878270219234**
Status : **Answered**
Chosen Option : **2**

Section : **Chemistry Section B**

Q.81 Using the given figure, the ratio of R_f values of sample A and sample C is $x \times 10^{-2}$. Value of x is _____.

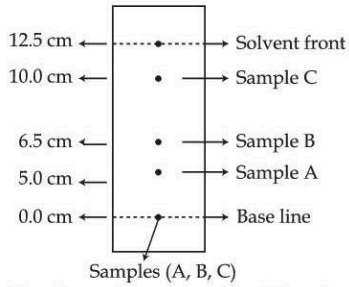
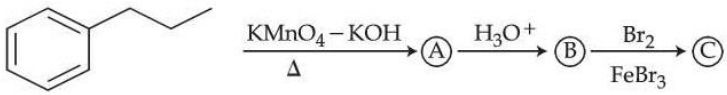


Fig : Paper chromatography of Samples

Given **50**
Answer :

Question Type : **SA**
Question ID : **87827055785**
Status : **Answered**

Q.82 The product Ⓒ in the following sequence of reactions has _____ π bonds.



Given **--**
Answer :

Question Type : **SA**
Question ID : **87827055786**
Status : **Not Answered**

Q.83 Considering acetic acid dissociates in water, its dissociation constant is 6.25×10^{-5}. If 5 mL of acetic acid is dissolved in 1 litre water, the solution will freeze at $-x \times 10^{-2}$ °C, provided pure water freezes at 0 °C.

$x =$ _____. (Nearest integer)

Given : $(K_f)_{water} = 1.86$ K kg mol^{-1}.
density of acetic acid is 1.2 g mol^{-1}.
molar mass of water = 18 g mol^{-1}.
molar mass of acetic acid = 60 g mol^{-1}.
density of water = 1 g cm^{-3}

Acetic acid dissociates as $CH_3COOH \rightleftharpoons CH_3COO^{\ominus} + H^{\oplus}$

Given **19**
Answer :

Question Type : **SA**
Question ID : **87827055781**
Status : **Marked For Review**

Q.84 Combustion of 1 mole of benzene is expressed at

$$C_6H_6(l) + \frac{15}{2} O_2(g) \rightarrow 6\,CO_2(g) + 3\,H_2O(l).$$

The standard enthalpy of combustion of 2 mol of benzene is $-'x'$ kJ.

$x =$ _____.

Given :

1. standard Enthalpy of formation of 1 mol of $C_6H_6(l)$, for the reaction $6\,C\ (graphite) + 3\,H_2(g) \rightarrow C_6H_6(l)$ is 48.5 kJ mol^{-1}.
2. Standard Enthalpy of formation of 1 mol of $CO_2(g)$, for the reaction $C\ (graphite) + O_2(g) \rightarrow CO_2(g)$ is -393.5 kJ mol^{-1}.
3. Standard and Enthalpy of formation of 1 mol of $H_2O(l)$, for the reaction $H_2(g) + \frac{1}{2} O_2(g) \rightarrow H_2O\,(l)$ is -286 kJ mol^{-1}.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055780**
Status : **Not Answered**

Q.85 Consider the following single step reaction in gas phase at constant temperature.

$$2A_{(g)} + B_{(g)} \rightarrow C_{(g)}$$

The initial rate of the reaction is recorded as r_1 when the reaction starts with 1.5 atm pressure of A and 0.7 atm pressure of B. After some time, the rate r_2 is recorded when the pressure of C becomes 0.5 atm. The ratio $r_1 : r_2$ is _____ $\times 10^{-1}$. (Nearest integer)

Given --
Answer :

Question Type : **SA**
Question ID : **87827055782**
Status : **Not Answered**

Q.86 In the Claisen-Schmidt reaction to prepare 351 g of dibenzalacetone using 87 g of acetone, the amount of benzaldehyde required is _____ g. (Nearest integer)

Given --
Answer :

Question Type : **SA**
Question ID : **87827055784**
Status : **Not Answered**

Q.87 The fusion of chromite ore with sodium carbonate in the presence of air leads to the formation of products A and B along with the evolution of CO_2. The sum of spin-only magnetic moment values of A and B is _____ B.M. (Nearest integer)

[Given atomic number : C : 6, Na : 11, O : 8, Fe : 26, Cr : 24]

Given --
Answer :

Question Type : **SA**
Question ID : **87827055783**
Status : **Not Answered**

Q.88 Number of compounds from the following with zero dipole moment is _____.

HF, H_2, H_2S, CO_2, NH_3, BF_3, CH_4, $CHCl_3$, SiF_4, H_2O, BeF_2

Given **3**
Answer :

Question Type : **SA**
Question ID : **87827055779**
Status : **Answered**

Q.89 X g of ethanamine was subjected to reaction with $NaNO_2/HCl$ followed by hydrolysis to liberate N_2 and HCl. The HCl generated was completely neutralised by 0.2 moles of NaOH. X is _____ g.

Given --
Answer :

Question Type : **SA**
Question ID : **87827055787**
Status : **Not Answered**

Q.90 In an atom, total number of electrons having quantum numbers $n=4$, $|m_l|=1$ and $m_s=-\frac{1}{2}$ is _____.

Given **6**
Answer :

Question Type : **SA**
Question ID : **87827055778**
Status : **Answered**