

NTA JEE 2024_ 27 29 30 31 Jan 1st Feb 2024

| | |
|----------------|-------------------|
| Application No | |
| Candidate Name | |
| Roll No. | |
| Test Date | 30/01/2024 |
| Test Time | 3:00 PM - 6:00 PM |
| Subject | B. Tech |

Section : Mathematics Section A

Q.1 Let $y = f(x)$ be a thrice differentiable function in $(-5, 5)$. Let the tangents to the curve $y = f(x)$ at $(1, f(1))$ and $(3, f(3))$ make angles $\pi/6$ and $\pi/4$, respectively with positive x -axis. If $27 \int_1^3 ((f'(t))^2 + 1) f''(t) dt = \alpha + \beta\sqrt{3}$ where α, β are integers, then the value of $\alpha + \beta$ equals

- Options
1. -16
 2. 36
 3. -14
 4. 26

Question Type : **MCQ**

Question ID : **4058591026**

Option 1 ID : **4058593278**

Option 2 ID : **4058593276**

Option 3 ID : **4058593277**

Option 4 ID : **4058593275**

Status : **Not Answered**

Chosen Option : --

Q.2 Let a and b be two distinct positive real numbers. Let 11^{th} term of a GP, whose first term is a and third term is b , is equal to p^{th} term of another GP, whose first term is a and fifth term is b . Then p is equal to

- Options
1. 21
 2. 25
 3. 24
 4. 20

Question Type : **MCQ**

Question ID : **4058591020**

Option 1 ID : **4058593251**

Option 2 ID : **4058593254**

Option 3 ID : **4058593253**

Option 4 ID : **4058593252**

Status : **Not Answered**

Chosen Option : --

Q.3 Let $f(x) = (x+3)^2(x-2)^3$, $x \in [-4, 4]$. If M and m are the maximum and minimum values of f , respectively in $[-4, 4]$, then the value of $M - m$ is

- Options 1. 600
2. 392
3. 108
4. 608

Question Type : **MCQ**

Question ID : **4058591023**

Option 1 ID : **4058593263**

Option 2 ID : **4058593264**

Option 3 ID : **4058593266**

Option 4 ID : **4058593265**

Status : **Answered**

Chosen Option : **4**

Q.4 Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function defined by $f(x) = \frac{x}{(1+x^4)^{1/4}}$, and $g(x) = f(f(f(f(x))))$.

Then, $18 \int_0^{\sqrt{2\sqrt{5}}} x^2 g(x) dx$ is equal to

- Options 1. 33
2. 42
3. 36
4. 39

Question Type : **MCQ**

Question ID : **4058591027**

Option 1 ID : **4058593279**

Option 2 ID : **4058593280**

Option 3 ID : **4058593281**

Option 4 ID : **4058593282**

Status : **Not Answered**

Chosen Option : **--**

Q.5 Suppose $2 - p$, p , $2 - a$, a are the coefficients of four consecutive terms in the expansion of $(1+x)^n$. Then the value of $p^2 - a^2 + 6a + 2p$ equals

- Options 1. 4
2. 10
3. 6
4. 8

Question Type : **MCQ**

Question ID : **4058591019**

Option 1 ID : **4058593248**

Option 2 ID : **4058593250**

Option 3 ID : **4058593247**

Option 4 ID : **4058593249**

Status : **Not Answered**

Chosen Option : **--**

Q.6 Let \vec{a} and \vec{b} be two vectors such that $|\vec{b}| = 1$ and $|\vec{b} \times \vec{a}| = 2$. Then

$|\vec{b} \times \vec{a} - \vec{b}|^2$ is equal to

- Options
1. 5
 2. 3
 3. 4
 4. 1

Question Type : **MCQ**

Question ID : **4058591032**

Option 1 ID : **4058593302**

Option 2 ID : **4058593300**

Option 3 ID : **4058593301**

Option 4 ID : **4058593299**

Status : **Answered**

Chosen Option : 4

Q.7 Let a and b be real constants such that the function f defined by

$$f(x) = \begin{cases} x^2 + 3x + a & , x \leq 1 \\ bx + 2 & , x > 1 \end{cases} \text{ be differentiable on } \mathbb{R}. \text{ Then, the value of } \int_{-2}^2 f(x) dx$$

equals

- Options
1. 21
 2. 19/6
 3. 17
 4. 15/6

Question Type : **MCQ**

Question ID : **4058591022**

Option 1 ID : **4058593262**

Option 2 ID : **4058593260**

Option 3 ID : **4058593261**

Option 4 ID : **4058593259**

Status : **Not Answered**

Chosen Option : --

Q.8 For $\alpha, \beta \in (0, \pi/2)$, let $3\sin(\alpha + \beta) = 2\sin(\alpha - \beta)$ and a real number k be such that $\tan \alpha = k \tan \beta$. Then, the value of k is equal to

- Options
1. -5
 2. 5
 3. $-2/3$
 4. $2/3$

Question Type : **MCQ**

Question ID : **4058591025**

Option 1 ID : **4058593273**

Option 2 ID : **4058593274**

Option 3 ID : **4058593272**

Option 4 ID : **4058593271**

Status : **Not Answered**

Chosen Option : --

Q.9 Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined as $f(x) = ae^{2x} + be^x + cx$. If $f(0) = -1, f'(\log_e 2) = 21$ and

$$\int_0^{\log_e 4} (f(x) - cx) dx = \frac{39}{2}, \text{ then the value of } |a + b + c| \text{ equals}$$

- Options 1. 16
2. 8
3. 12
4. 10

Question Type : **MCQ**

Question ID : **4058591024**

Option 1 ID : **4058593270**

Option 2 ID : **4058593267**

Option 3 ID : **4058593269**

Option 4 ID : **4058593268**

Status : **Not Answered**

Chosen Option : --

Q.10 Let P be a point on the hyperbola $H : \frac{x^2}{9} - \frac{y^2}{4} = 1$, in the first quadrant such that

the area of triangle formed by P and the two foci of H is $2\sqrt{13}$. Then, the square of the distance of P from the origin is

- Options 1. 20
2. 18
3. 22
4. 26

Question Type : **MCQ**

Question ID : **4058591029**

Option 1 ID : **4058593288**

Option 2 ID : **4058593287**

Option 3 ID : **4058593289**

Option 4 ID : **4058593290**

Status : **Not Answered**

Chosen Option : --

Q.11 If z is a complex number, then the number of common roots of the equations $z^{1985} + z^{100} + 1 = 0$ and $z^3 + 2z^2 + 2z + 1 = 0$, is equal to

- Options 1. 2
2. 1
3. 3
4. 0

Question Type : **MCQ**

Question ID : **4058591016**

Option 1 ID : **4058593237**

Option 2 ID : **4058593236**

Option 3 ID : **4058593238**

Option 4 ID : **4058593235**

Status : **Not Answered**

Chosen Option : --

Q.12 Let $L_1 : \vec{r} = (\hat{i} - \hat{j} + 2\hat{k}) + \lambda(\hat{i} - \hat{j} + 2\hat{k}), \lambda \in \mathbb{R}$,

$L_2 : \vec{r} = (\hat{j} - \hat{k}) + \mu(3\hat{i} + \hat{j} + p\hat{k}), \mu \in \mathbb{R}$, and $L_3 : \vec{r} = \delta(\ell\hat{i} + m\hat{j} + n\hat{k}), \delta \in \mathbb{R}$

be three lines such that L_1 is perpendicular to L_2 and L_3 is perpendicular to both L_1 and L_2 . Then, the point which lies on L_3 is

- Options**
1. $(1, -7, 4)$
 2. $(-1, 7, 4)$
 3. $(1, 7, -4)$
 4. $(-1, -7, 4)$

Question Type : **MCQ**

Question ID : **4058591031**

Option 1 ID : **4058593297**

Option 2 ID : **4058593296**

Option 3 ID : **4058593295**

Option 4 ID : **4058593298**

Status : **Not Answered**

Chosen Option : --

Q.13 If $x^2 - y^2 + 2hxy + 2gx + 2fy + c = 0$ is the locus of a point, which moves such that it is always equidistant from the lines $x + 2y + 7 = 0$ and $2x - y + 8 = 0$, then the value of $g + c + h - f$ equals

- Options**
1. 14
 2. 8
 3. 6
 4. 29

Question Type : **MCQ**

Question ID : **4058591030**

Option 1 ID : **4058593293**

Option 2 ID : **4058593292**

Option 3 ID : **4058593291**

Option 4 ID : **4058593294**

Status : **Not Answered**

Chosen Option : --

Q.14

Let $R = \begin{pmatrix} x & 0 & 0 \\ 0 & y & 0 \\ 0 & 0 & z \end{pmatrix}$ be a non-zero 3×3 matrix, where

$x \sin \theta = y \sin \left(\theta + \frac{2\pi}{3} \right) = z \sin \left(\theta + \frac{4\pi}{3} \right) \neq 0$, $\theta \in (0, 2\pi)$. For a square matrix M , let

trace (M) denote the sum of all the diagonal entries of M . Then, among the statements:

(I) Trace (R) = 0

(II) If trace ($\text{adj}(\text{adj}(R))$)=0, then R has exactly one non-zero entry.

Options 1. Neither (I) nor (II) is true

2. Only (II) is true

3. Both (I) and (II) are true

4. Only (I) is true

Question Type : **MCQ**

Question ID : **4058591017**

Option 1 ID : **4058593242**

Option 2 ID : **4058593240**

Option 3 ID : **4058593241**

Option 4 ID : **4058593239**

Status : **Not Answered**

Chosen Option : --

Q.15 Let $A(\alpha, 0)$ and $B(0, \beta)$ be the points on the line $5x + 7y = 50$. Let the point P divide the line segment AB internally in the ratio 7:3. Let $3x - 25 = 0$ be a directrix of the ellipse $E : \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ and the corresponding focus be S . If from S , the perpendicular on the x -axis passes through P , then the length of the latus rectum of E is equal to,

Options 1. $\frac{32}{9}$

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

3. $\frac{32}{5}$

4. $\frac{25}{3}$

Question Type : **MCQ**

Question ID : **4058591028**

Option 1 ID : **4058593286**

Option 2 ID : **4058593284**

Option 3 ID : **4058593285**

Option 4 ID : **4058593283**

Status : **Not Answered**

Chosen Option : --

Q.16 Bag A contains 3 white, 7 red balls and Bag B contains 3 white, 2 red balls. One bag is selected at random and a ball is drawn from it. The probability of drawing the ball from the bag A, if the ball drawn is white, is

- Options
1. $\frac{3}{10}$
 2. $\frac{1}{9}$
 3. $\frac{1}{3}$
 4. $\frac{1}{4}$

Question Type : **MCQ**

Question ID : **4058591034**

Option 1 ID : **4058593310**

Option 2 ID : **4058593309**

Option 3 ID : **4058593308**

Option 4 ID : **4058593307**

Status : **Not Answered**

Chosen Option : --

Q.17 Consider the system of linear equations $x + y + z = 5$,
 $x + 2y + \lambda^2 z = 9$, $x + 3y + \lambda z = \mu$, where $\lambda, \mu \in \mathbb{R}$. Then, which of the following statement is **NOT** correct?

- Options
1. System is consistent if $\lambda \neq 1$ and $\mu = 13$
 2. System is inconsistent if $\lambda = 1$ and $\mu \neq 13$
 3. System has infinite number of solutions if $\lambda = 1$ and $\mu = 13$
 4. System has unique solution if $\lambda \neq 1$ and $\mu \neq 13$

Question Type : **MCQ**

Question ID : **4058591018**

Option 1 ID : **4058593243**

Option 2 ID : **4058593244**

Option 3 ID : **4058593246**

Option 4 ID : **4058593245**

Status : **Not Answered**

Chosen Option : --

Q.18 If the domain of the function $f(x) = \log_e \left(\frac{2x+3}{4x^2+x-3} \right) + \cos^{-1} \left(\frac{2x-1}{x+2} \right)$ is $(\alpha, \beta]$,
then the value of $5\beta - 4\alpha$ is equal to

- Options
1. 11
 2. 12
 3. 9
 4. 10

Question Type : **MCQ**

Question ID : **4058591015**

Option 1 ID : **4058593233**

Option 2 ID : **4058593234**

Option 3 ID : **4058593231**

Option 4 ID : **4058593232**

Status : **Not Answered**

Chosen Option : --

Q.19 Let $\vec{a} = \hat{i} + \alpha \hat{j} + \beta \hat{k}$, $\alpha, \beta \in \mathbb{R}$. Let a vector \vec{b} be such that the angle between \vec{a} and \vec{b} is $\frac{\pi}{4}$ and $|\vec{b}|^2 = 6$. If $\vec{a} \cdot \vec{b} = 3\sqrt{2}$, then the value of $(\alpha^2 + \beta^2) |\vec{a} \times \vec{b}|^2$ is equal to

- Options
1. 95
 2. 85
 3. 75
 4. 90

Question Type : **MCQ**

Question ID : **4058591033**

Option 1 ID : **4058593306**

Option 2 ID : **4058593305**

Option 3 ID : **4058593303**

Option 4 ID : **4058593304**

Status : **Not Answered**

Chosen Option : --

Q.20 Let $f: \mathbb{R} - \{0\} \rightarrow \mathbb{R}$ be a function satisfying $f\left(\frac{x}{y}\right) = \frac{f(x)}{f(y)}$ for all $x, y, f(y) \neq 0$. If $f'(1) = 2024$, then

- Options
1. $xf'(x) + 2024f(x) = 0$
 2. $xf'(x) - 2023f(x) = 0$
 3. $xf'(x) - 2024f(x) = 0$
 4. $xf'(x) + f(x) = 2024$

Question Type : **MCQ**

Question ID : **4058591021**

Option 1 ID : **4058593256**

Option 2 ID : **4058593257**

Option 3 ID : **4058593255**

Option 4 ID : **4058593258**

Status : **Not Answered**

Chosen Option : --

Section : **Mathematics Section B**

Q.21 The area of the region enclosed by the parabola $(y - 2)^2 = x - 1$, the line $x - 2y + 4 = 0$ and the positive coordinate axes is _____.

Given --
Answer :

Question Type : **SA**

Question ID : **4058591040**

Status : **Not Answered**

Q.22 Let a line passing through the point $(-1, 2, 3)$ intersect the lines

$$L_1: \frac{x-1}{3} = \frac{y-2}{2} = \frac{z+1}{-2} \text{ at } M(\alpha, \beta, \gamma) \text{ and } L_2: \frac{x+2}{-3} = \frac{y-2}{-2} = \frac{z-1}{4} \text{ at } N(a, b, c).$$

Then, the value of $\frac{(\alpha + \beta + \gamma)^2}{(a + b + c)^2}$ equals _____.

Given --
Answer :

Question Type : SA

Question ID : 4058591043

Status : Not Answered

Q.23 The variance σ^2 of the data

| | | | | | | | |
|-------|---|---|---|---|----|----|----|
| x_i | 0 | 1 | 5 | 6 | 10 | 12 | 17 |
| f_i | 3 | 2 | 3 | 2 | 6 | 3 | 3 |

is _____.

Given --
Answer :

Question Type : SA

Question ID : 4058591044

Status : Not Answered

Q.24 The number of real solutions of the equation $x(x^2 + 3|x| + 5|x-1| + 6|x-2|) = 0$ is _____.

Given --
Answer :

Question Type : SA

Question ID : 4058591036

Status : Not Answered

Q.25 Let $Y = Y(X)$ be a curve lying in the first quadrant such that the area enclosed by the line $Y - y = Y'(x)(X - x)$ and the co-ordinate axes, where (x, y) is any point on the curve, is always $\frac{-y^2}{2Y'(x)} + 1$, $Y'(x) \neq 0$. If $Y(1) = 1$, then $12Y(2)$ equals _____.

Given --
Answer :

Question Type : SA

Question ID : 4058591041

Status : Not Answered

Q.26 The number of symmetric relations defined on the set $\{1, 2, 3, 4\}$ which are not reflexive is _____.

Given 12
Answer :

Question Type : SA

Question ID : 4058591035

Status : Answered

Q.27 In an examination of Mathematics paper, there are 20 questions of equal marks and the question paper is divided into three sections : A , B and C . A student is required to attempt total 15 questions taking at least 4 questions from each section. If section A has 8 questions, section B has 6 questions and section C has 6 questions, then the total number of ways a student can select 15 questions is _____.

Given --
Answer :

Question Type : SA
Question ID : 4058591037
Status : Not Answered

Q.28 Consider two circles $C_1 : x^2 + y^2 = 25$ and $C_2 : (x - a)^2 + y^2 = 16$, where $a \in (5, 9)$. Let the angle between the two radii (one to each circle) drawn from one of the intersection points of C_1 and C_2 be $\sin^{-1}\left(\frac{\sqrt{63}}{8}\right)$. If the length of common chord of C_1 and C_2 is β , then the value of $(a\beta)^2$ equals _____.

Given --
Answer :

Question Type : SA
Question ID : 4058591042
Status : Not Answered

Q.29 Let S_n be the sum to n -terms of an arithmetic progression 3, 7, 11,

If $40 < \left(\frac{6}{n(n+1)} \sum_{k=1}^n S_k\right) < 42$, then n equals _____.

Given --
Answer :

Question Type : SA
Question ID : 4058591039
Status : Not Answered

Q.30 Let $\alpha = \sum_{k=0}^n \left(\frac{{}^n C_k}{k+1}\right)$ and $\beta = \sum_{k=0}^{n-1} \left(\frac{{}^n C_k {}^n C_{k+1}}{k+2}\right)$. If $5\alpha = 6\beta$, then n equals _____.

Given --
Answer :

Question Type : SA
Question ID : 4058591038
Status : Not Answered

Section : Physics Section A

Q.31 If three moles of monoatomic gas ($\gamma = \frac{5}{3}$) is mixed with two moles of a diatomic gas ($\gamma = \frac{7}{5}$), the value of adiabatic exponent γ for the mixture is

- Options**
1. 1.35
 2. 1.40
 3. 1.52
 4. 1.75

Question Type : **MCQ**

Question ID : **4058591053**

Option 1 ID : **4058593356**

Option 2 ID : **4058593353**

Option 3 ID : **4058593354**

Option 4 ID : **4058593355**

Status : **Not Answered**

Chosen Option : --

Q.32 Projectiles A and B are thrown at angles of 45° and 60° with vertical respectively from top of a 400 m high tower. If their ranges and times of flight are same, the ratio of their speeds of projection $v_A : v_B$ is :

[Take $g = 10 \text{ ms}^{-2}$]

- Options**
1. $1:\sqrt{3}$
 2. $\sqrt{2}:1$
 3. $1:2$
 4. $1:\sqrt{2}$

Question Type : **MCQ**

Question ID : **4058591046**

Option 1 ID : **4058593328**

Option 2 ID : **4058593327**

Option 3 ID : **4058593325**

Option 4 ID : **4058593326**

Status : **Not Answered**

Chosen Option : --

Q.33 A beam of unpolarised light of intensity I_0 is passed through a polaroid A and then through another polaroid B which is oriented so that its principal plane makes an angle of 45° relative to that of A . The intensity of emergent light is:

- Options**
1. $I_0/4$
 2. $I_0/8$
 3. $I_0/2$
 4. I_0

Question Type : **MCQ**

Question ID : **4058591059**

Option 1 ID : **4058593379**

Option 2 ID : **4058593380**

Option 3 ID : **4058593378**

Option 4 ID : **4058593377**

Status : **Not Answered**

Chosen Option : --

Q.34 An alternating voltage $V(t) = 220 \sin 100 \pi t$ volt is applied to a purely resistive load of 50Ω . The time taken for the current to rise from half of the peak value to the peak value is:

- Options
1. 7.2 ms
 2. 5 ms
 3. 2.2 ms
 4. 3.3 ms

Question Type : **MCQ**

Question ID : **4058591057**

Option 1 ID : **4058593371**

Option 2 ID : **4058593372**

Option 3 ID : **4058593370**

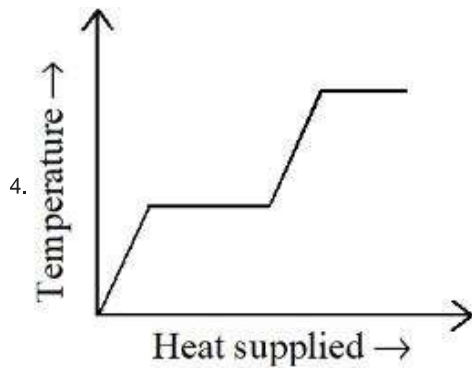
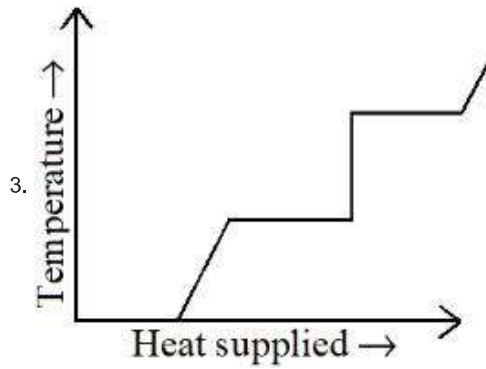
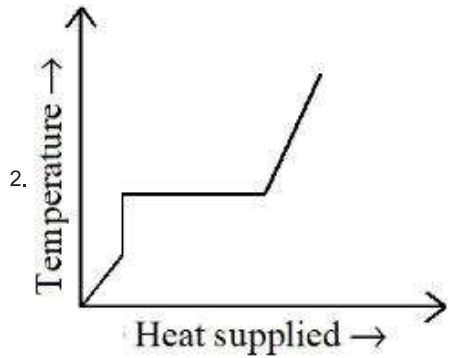
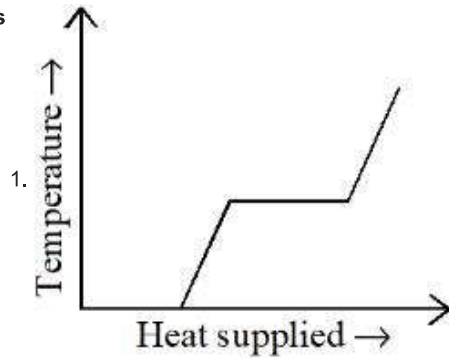
Option 4 ID : **4058593369**

Status : **Not Answered**

Chosen Option : --

Q.35 A block of ice at -10°C is slowly heated and converted to steam at 100°C . Which of the following curves represent the phenomenon qualitatively:

Options



Question Type : **MCQ**

Question ID : **4058591051**

Option 1 ID : **4058593346**

Option 2 ID : **4058593347**

Option 3 ID : **4058593348**

Option 4 ID : **4058593345**

Status : **Answered**

Chosen Option : 1

Q.36 If mass is written as $m = k c^P G^{-1/2} h^{1/2}$ then the value of P will be : (Constants have their usual meaning with k a dimensionless constant)

- Options 1. $1/2$
 2. $1/3$
 3. 2
 4. $-1/3$

Question Type : **MCQ**

Question ID : **4058591045**

Option 1 ID : **4058593324**

Option 2 ID : **4058593321**

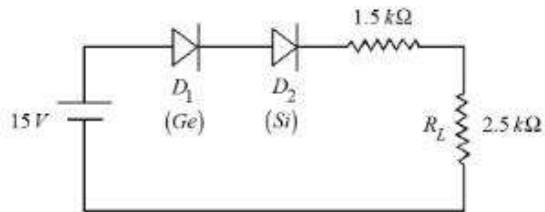
Option 3 ID : **4058593322**

Option 4 ID : **4058593323**

Status : **Not Answered**

Chosen Option : --

Q.37



In the given circuit, the voltage across load resistance (R_L) is:

- Options 1. 9.00 V
 2. 14.00 V
 3. 8.75 V
 4. 8.50 V

Question Type : **MCQ**

Question ID : **4058591063**

Option 1 ID : **4058593395**

Option 2 ID : **4058593396**

Option 3 ID : **4058593394**

Option 4 ID : **4058593393**

Status : **Not Answered**

Chosen Option : --

Q.38 In a nuclear fission reaction of an isotope of mass M , three similar daughter nuclei of same mass are formed. The speed of a daughter nuclei in terms of mass defect ΔM will be :

Options

1. $c\sqrt{\frac{2\Delta M}{M}}$
2. $\sqrt{\frac{2c\Delta M}{M}}$
3. $c\sqrt{\frac{3\Delta M}{M}}$
4. $\frac{\Delta Mc^2}{3}$

Question Type : **MCQ**

Question ID : **4058591061**

Option 1 ID : **4058593386**

Option 2 ID : **4058593388**

Option 3 ID : **4058593387**

Option 4 ID : **4058593385**

Status : **Not Answered**

Chosen Option : --

Q.39 A block of mass m is placed on a surface having vertical crosssection given by $y = x^2 / 4$. If coefficient of friction is 0.5, the maximum height above the ground at which block can be placed without slipping is:

- Options
1. $1/3 m$
 2. $1/4 m$
 3. $1/6 m$
 4. $1/2 m$

Question Type : **MCQ**

Question ID : **4058591048**

Option 1 ID : **4058593336**

Option 2 ID : **4058593333**

Option 3 ID : **4058593334**

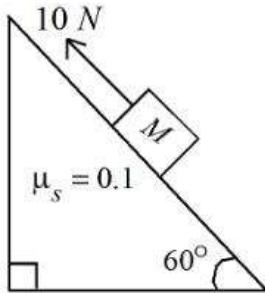
Option 4 ID : **4058593335**

Status : **Not Answered**

Chosen Option : --

Q.40 A block of mass 1 kg is pushed up a surface inclined to horizontal at an angle of 60° by a force of 10 N parallel to the inclined surface as shown in figure. When the block is pushed up by 10 m along inclined surface, the work done against frictional force is :

$$[g = 10\text{ m/s}^2]$$



- Options
1. 5 J
 2. 10 J
 3. $5\sqrt{3}\text{ J}$
 4. $5 \times 10^3\text{ J}$

Question Type : **MCQ**

Question ID : **4058591049**

Option 1 ID : **4058593338**

Option 2 ID : **4058593340**

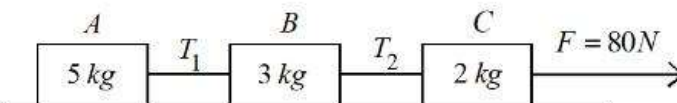
Option 3 ID : **4058593337**

Option 4 ID : **4058593339**

Status : **Not Answered**

Chosen Option : --

Q.41 Three blocks A , B and C are pulled on a horizontal smooth surface by a force of 80 N as shown in figure



The tensions T_1 and T_2 in the string are respectively:

- Options
1. $80\text{ N}, 100\text{ N}$
 2. $88\text{ N}, 96\text{ N}$
 3. $40\text{ N}, 64\text{ N}$
 4. $60\text{ N}, 80\text{ N}$

Question Type : **MCQ**

Question ID : **4058591047**

Option 1 ID : **4058593332**

Option 2 ID : **4058593331**

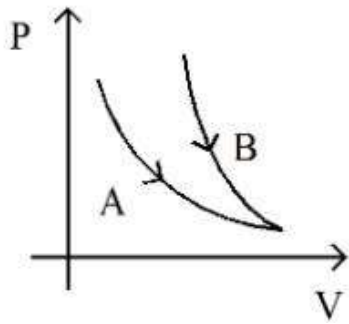
Option 3 ID : **4058593329**

Option 4 ID : **4058593330**

Status : **Not Answered**

Chosen Option : --

Q.42 Choose the correct statement for processes A & B shown in figure.



- Options
1. $PV^\gamma = k$ for process B and $PV = k$ for process A .
 2. $PV = k$ for process B and A .
 3. $\frac{T^\gamma}{P^{\gamma-1}} = k$ for process A and $PV = k$ for process B .
 4. $\frac{P^{\gamma-1}}{T^\gamma} = k$ for process B and $T = k$ for process A .

Question Type : **MCQ**

Question ID : **4058591052**

Option 1 ID : **4058593350**

Option 2 ID : **4058593349**

Option 3 ID : **4058593352**

Option 4 ID : **4058593351**

Status : **Not Answered**

Chosen Option : --

Q.43 Match List I with List II

| List I | | List II | |
|--------|---|---------|---|
| A. | Gauss's law of magnetostatics | I. | $\oint \vec{E} \cdot \vec{d}a = \frac{1}{\epsilon_0} \int \rho dV$ |
| B. | Faraday's law of electro magnetic induction | II. | $\oint \vec{B} \cdot \vec{d}a = 0$ |
| C. | Ampere's law | III. | $\int \vec{E} \cdot \vec{d}l = \frac{-d}{dt} \int \vec{B} \cdot \vec{d}a$ |
| D. | Gauss's law of electrostatics | IV. | $\oint \vec{B} \cdot \vec{d}l = \mu_0 I$ |

Choose the correct answer from the options given below:

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

Question Type : **MCQ**

Question ID : **4058591056**

Option 1 ID : **4058593367**

Option 2 ID : **4058593365**

Option 3 ID : **4058593366**

Option 4 ID : **4058593368**

Status : **Answered**

Chosen Option : **3**

Q.44 Escape velocity of a body from earth is 11.2 km/s . If the radius of a planet be one-third the radius of earth and mass be one-sixth that of earth, the escape velocity from the planet is :

- Options
1. 4.2 km/s
 2. 8.4 km/s
 3. 7.9 km/s
 4. 11.2 km/s

Question Type : **MCQ**

Question ID : **4058591050**

Option 1 ID : **4058593341**

Option 2 ID : **4058593343**

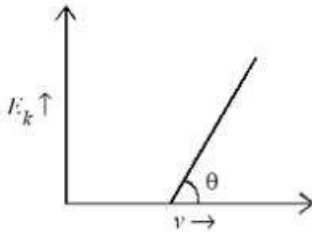
Option 3 ID : **4058593342**

Option 4 ID : **4058593344**

Status : **Not Answered**

Chosen Option : **--**

Q.45 For the photoelectric effect, the maximum kinetic energy (E_k) of the photoelectrons is plotted against the frequency (ν) of the incident photons as shown in figure. The slope of the graph gives



- Options
1. Ratio of Planck's constant to electric charge
 2. Work function of the metal
 3. Charge of electron
 4. Planck's constant

Question Type : **MCQ**

Question ID : **4058591060**

Option 1 ID : **4058593384**

Option 2 ID : **4058593383**

Option 3 ID : **4058593382**

Option 4 ID : **4058593381**

Status : **Answered**

Chosen Option : **2**

Q.46 When a potential difference V is applied across a wire of resistance R , it dissipates energy at a rate W . If the wire is cut into two halves and these halves are connected mutually parallel across the same supply, the energy dissipation rate will become:

- Options
1. $2W$
 2. $1/2W$
 3. $1/4W$
 4. $4W$

Question Type : **MCQ**

Question ID : **4058591055**

Option 1 ID : **4058593361**

Option 2 ID : **4058593362**

Option 3 ID : **4058593364**

Option 4 ID : **4058593363**

Status : **Answered**

Chosen Option : **3**

Q.47 A particle of charge $-q$ and mass m moves in a circle of radius r around an infinitely long line charge of linear charge density $+\lambda$. Then time period will be given as :

(Consider k as Coulomb's constant)

Options

$$1. T = \frac{1}{2\pi} \sqrt{\frac{2k\lambda q}{m}}$$

$$2. T^2 = \frac{4\pi^2 m r^3}{2k\lambda q}$$

$$3. T = 2\pi r \sqrt{\frac{m}{2k\lambda q}}$$

$$4. T = \frac{1}{2\pi r} \sqrt{\frac{m}{2k\lambda q}}$$

Question Type : **MCQ**

Question ID : **4058591054**

Option 1 ID : **4058593359**

Option 2 ID : **4058593358**

Option 3 ID : **4058593357**

Option 4 ID : **4058593360**

Status : **Answered**

Chosen Option : **3**

Q.48 An electron revolving in n^{th} Bohr orbit has magnetic moment μ_n . If $\mu_n \propto n^x$, the value of x is

Options 1. **1**

2. **0**

3. **2**

4. **3**

Question Type : **MCQ**

Question ID : **4058591062**

Option 1 ID : **4058593390**

Option 2 ID : **4058593389**

Option 3 ID : **4058593391**

Option 4 ID : **4058593392**

Status : **Not Answered**

Chosen Option : **--**

Q.49 If the total energy transferred to a surface in time t is $6.48 \times 10^5 J$, then the magnitude of the total momentum delivered to this surface for complete absorption will be:

- Options
1. $2.46 \times 10^{-3} \text{ kg m/s}$
 2. $4.32 \times 10^{-3} \text{ kg m/s}$
 3. $1.58 \times 10^{-3} \text{ kg m/s}$
 4. $2.16 \times 10^{-3} \text{ kg m/s}$

Question Type : **MCQ**

Question ID : **4058591058**

Option 1 ID : **4058593376**

Option 2 ID : **4058593374**

Option 3 ID : **4058593375**

Option 4 ID : **4058593373**

Status : **Not Answered**

Chosen Option : --

Q.50 If 50 Vernier divisions are equal to 49 main scale divisions of a traveling microscope and one smallest reading of main scale is 0.5 mm , the Vernier constant of traveling microscope is

- Options
1. 0.01 cm
 2. 0.01 mm
 3. 0.1 cm
 4. 0.1 mm

Question Type : **MCQ**

Question ID : **4058591064**

Option 1 ID : **4058593398**

Option 2 ID : **4058593399**

Option 3 ID : **4058593400**

Option 4 ID : **4058593397**

Status : **Not Answered**

Chosen Option : --

Section : Physics Section B

Q.51 Two identical charged spheres are suspended by strings of equal lengths. The strings make an angle of 37° with each other. When suspended in a liquid of density 0.7 g/cm^3 , the angle remains same. If density of material of the sphere is 1.4 g/cm^3 , the dielectric constant of the liquid is _____ $\left(\tan 37^\circ = \frac{3}{4} \right)$

Given --
Answer :

Question Type : **SA**

Question ID : **4058591069**

Status : **Not Answered**

- Q.52** A vector has magnitude same as that of $\vec{A} = 3\hat{i} + 4\hat{j}$ and is parallel to $\vec{B} = 4\hat{i} + 3\hat{j}$. The x and y components of this vector in first quadrant are x and 3 respectively where $x =$ _____.

Given 4

Answer :

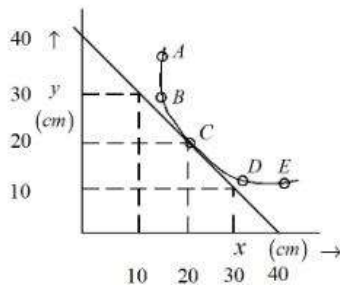
Question Type : SA

Question ID : 4058591065

Status : Answered

- Q.53** In an experiment to measure the focal length (f) of a convex lens, the magnitude of object distance (x) and the image distance (y) are measured with reference to the focal point of the lens. The y - x plot is shown in figure.

The focal length of the lens is _____ cm .



Given 10

Answer :

Question Type : SA

Question ID : 4058591073

Status : Answered

- Q.54** A big drop is formed by coalescing 1000 small identical drops of water. If E_1 be the total surface energy of 1000 small drops of water and E_2 be the surface energy of single big drop of water, then $E_1 : E_2$ is $x : 1$ where $x =$ _____.

Given --

Answer :

Question Type : SA

Question ID : 4058591067

Status : Not Answered

- Q.55** A point source is emitting sound waves of intensity $16 \times 10^{-8} \text{ Wm}^{-2}$ at the origin. The difference in intensity (magnitude only) at two points located at a distances of $2m$ and $4m$ from the origin respectively will be _____ $\times 10^{-8} \text{ Wm}^{-2}$.

Given --

Answer :

Question Type : SA

Question ID : 4058591068

Status : Not Answered

Q.56 Two discs of moment of inertia $I_1 = 4 \text{ kg m}^2$ and $I_2 = 2 \text{ kg m}^2$, about their central axes & normal to their planes, rotating with angular speeds 10 rad/s & 4 rad/s respectively are brought into contact face to face with their axes of rotation coincident. The loss in kinetic energy of the system in the process is _____ J.

Given --
Answer :

Question Type : SA
Question ID : 4058591066
Status : Not Answered

Q.57 A power transmission line feeds input power at 2.3 kV to a step down transformer with its primary winding having 3000 turns. The output power is delivered at 230 V by the transformer. The current in the primary of the transformer is 5 A and its efficiency is 90%. The winding of transformer is made of copper. The output current of transformer is _____ A.

Given --
Answer :

Question Type : SA
Question ID : 4058591072
Status : Not Answered

Q.58 The current of 5 A flows in a square loop of sides 1 m is placed in air. The magnetic field at the centre of the loop is $X\sqrt{2} \times 10^{-7} \text{ T}$. The value of X is _____.

Given --
Answer :

Question Type : SA
Question ID : 4058591071
Status : Not Answered

Q.59 Two resistance of 100Ω and 200Ω are connected in series with a battery of 4 V and negligible internal resistance. A voltmeter is used to measure voltage across 100Ω resistance, which gives reading as 1 V . The resistance of voltmeter must be _____ Ω .

Given 100
Answer :

Question Type : SA
Question ID : 4058591070
Status : Answered

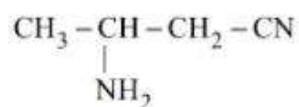
Q.60 A simple pendulum is placed at a place where its distance from the earth's surface is equal to the radius of the earth. If the length of the string is 4 m , then the time period of small oscillations will be _____ s. [take $g = \pi^2 \text{ ms}^{-2}$]

Given --
Answer :

Question Type : SA
Question ID : 4058591074
Status : Not Answered

Section : Chemistry Section A

Q.61 IUPAC name of following compound is :



- Options
1. 3-Aminopropanenitrile
 2. 2-Aminobutanenitrile
 3. 3-Aminobutanenitrile
 4. 2-Aminopentanenitrile

Question Type : **MCQ**

Question ID : **4058591088**

Option 1 ID : **4058593463**

Option 2 ID : **4058593465**

Option 3 ID : **4058593464**

Option 4 ID : **4058593466**

Status : **Answered**

Chosen Option : 1

Q.62 The molecule / ion with square pyramidal shape is

- Options
1. PCl_5
 2. $[\text{Ni}(\text{CN})_4]^{2-}$
 3. PF_5
 4. BrF_5

Question Type : **MCQ**

Question ID : **4058591077**

Option 1 ID : **4058593421**

Option 2 ID : **4058593422**

Option 3 ID : **4058593419**

Option 4 ID : **4058593420**

Status : **Not Answered**

Chosen Option : --

Q.63 The orange colour of $\text{K}_2\text{Cr}_2\text{O}_7$ and purple colour of KMnO_4 is due to

- Options
1. $d \rightarrow d$ transitions in both
 2. $d \rightarrow d$ transitions in $\text{K}_2\text{Cr}_2\text{O}_7$ and charge transfer transitions in KMnO_4 .
 3. $d \rightarrow d$ transitions in KMnO_4 and charge transfer transitions in $\text{K}_2\text{Cr}_2\text{O}_7$.
 4. Charge transfer transition in both.

Question Type : **MCQ**

Question ID : **4058591084**

Option 1 ID : **4058593447**

Option 2 ID : **4058593448**

Option 3 ID : **4058593449**

Option 4 ID : **4058593450**

Status : **Not Answered**

Chosen Option : --

Q.64 Which among the following purification methods is based on the principle of "Solubility" in two different solvents?

- Options
1. Differential Extraction
 2. Column Chromatography
 3. Sublimation
 4. Distillation

Question Type : **MCQ**
Question ID : **4058591086**
Option 1 ID : **4058593457**
Option 2 ID : **4058593458**
Option 3 ID : **4058593455**
Option 4 ID : **4058593456**
Status : **Answered**
Chosen Option : **2**

Q.65 The coordination geometry around the manganese in decacarbonyldimanganese (0) is

- Options
1. Trigonal bipyramidal
 2. Octahedral
 3. Square pyramidal
 4. Square planar

Question Type : **MCQ**
Question ID : **4058591085**
Option 1 ID : **4058593453**
Option 2 ID : **4058593451**
Option 3 ID : **4058593452**
Option 4 ID : **4058593454**
Status : **Not Answered**
Chosen Option : **--**

Q.66 Given below are two statements:

Statement - I: Since Fluorine is more electronegative than nitrogen, the net dipole moment of NF_3 is greater than NH_3 .

Statement - II: In NH_3 , the orbital dipole due to lone pair and the dipole moment of NH bonds are in opposite direction, but in NF_3 the orbital dipole due to lone pair and dipole moments of N-F bonds are in same direction.

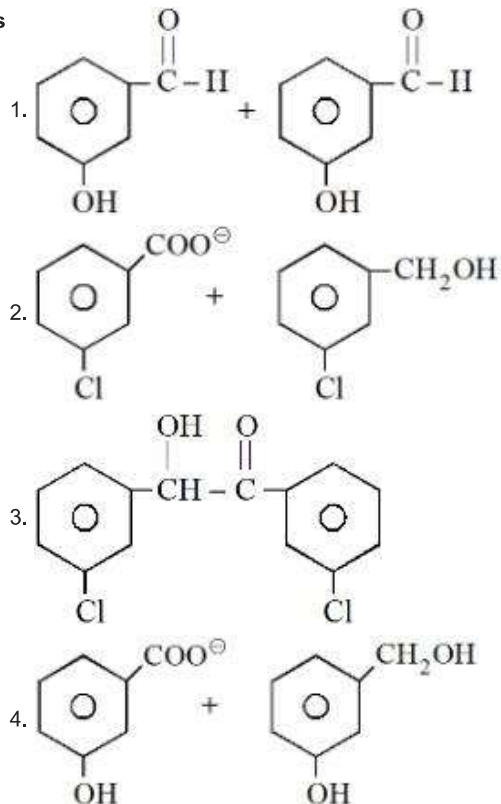
In the light of the above statements, choose the **most appropriate** from the options given below:

- Options
1. Statement I is true but Statement II is false.
 2. Both Statement I and Statement II are true.
 3. Both Statement I and Statement II are false.
 4. Statement I is false but Statement II is true.

Question Type : **MCQ**
Question ID : **4058591076**
Option 1 ID : **4058593417**
Option 2 ID : **4058593415**
Option 3 ID : **4058593416**
Option 4 ID : **4058593418**
Status : **Answered**
Chosen Option : **1**

Q.67 m-chlorobenzaldehyde on treatment with 50% KOH solution yields

Options



Question Type : MCQ

Question ID : 4058591092

Option 1 ID : 4058593480

Option 2 ID : 4058593481

Option 3 ID : 4058593479

Option 4 ID : 4058593482

Status : Not Answered

Chosen Option : --

Q.68 Given below are two statements:

Statement - I: Along the period, the chemical reactivity of the elements gradually increases from group 1 to group 18.

Statement - II: The nature of oxides formed by group 1 elements is basic while that of group 17 elements is acidic.

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

- Options
1. Both Statement I and Statement II are True
 2. Statement I is False but statement I is true
 3. Statement I is True But Statement II is False
 4. Both Statement I and Statement II are False

Question Type : MCQ

Question ID : 4058591080

Option 1 ID : 4058593431

Option 2 ID : 4058593434

Option 3 ID : 4058593433

Option 4 ID : 4058593432

Status : Answered

Chosen Option : 1

Q.69 The correct stability order of carbocations is

- Options
1. $\overset{+}{\text{C}}\text{H}_3 > (\text{CH}_3)_2\overset{+}{\text{C}}\text{H} > \text{CH}_3 - \overset{+}{\text{C}}\text{H}_2 > (\text{CH}_3)_3\overset{+}{\text{C}}$
 2. $(\text{CH}_3)_3\overset{+}{\text{C}} > (\text{CH}_3)_2\overset{+}{\text{C}}\text{H} > \text{CH}_3 - \overset{+}{\text{C}}\text{H}_2 > \overset{+}{\text{C}}\text{H}_3$
 3. $(\text{CH}_3)_3\text{C}^+ > \text{CH}_3 - \overset{+}{\text{C}}\text{H}_2 > (\text{CH}_3)_2\overset{+}{\text{C}}\text{H} > \overset{+}{\text{C}}\text{H}_3$
 4. $\overset{+}{\text{C}}\text{H}_3 > \text{CH}_3 - \overset{+}{\text{C}}\text{H}_2 > \text{CH}_3 - \underset{\text{CH}_3}{\overset{+}{\text{C}}\text{H}} > (\text{CH}_3)_3\text{C}^+$

Question Type : **MCQ**

Question ID : **4058591087**

Option 1 ID : **4058593460**

Option 2 ID : **4058593461**

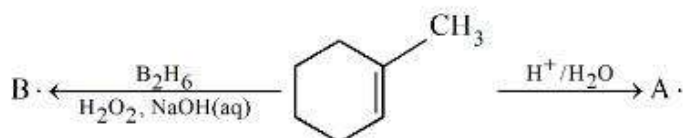
Option 3 ID : **4058593462**

Option 4 ID : **4058593459**

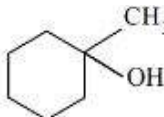
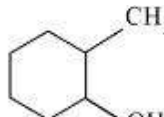
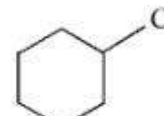
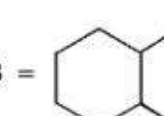
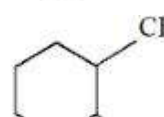
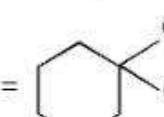
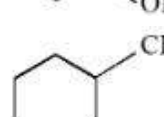
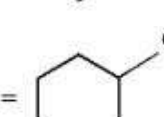
Status : **Answered**

Chosen Option : **2**

Q.70 Products A and B formed in the following set of reactions are



Options

1. A =  B = 
2. A =  B = 
3. A =  B = 
4. A =  B = 

Question Type : **MCQ**

Question ID : **4058591091**

Option 1 ID : **4058593475**

Option 2 ID : **4058593478**

Option 3 ID : **4058593477**

Option 4 ID : **4058593476**

Status : **Answered**

Chosen Option : **1**

Q.71 The solution from the following with highest depression in freezing point/lowest freezing point is

- Options
- 180 g of glucose dissolved in water
 - 180 g of acetic acid dissolved in benzene
 - 180 g of benzoic acid dissolved in benzene
 - 180 g of acetic acid dissolved in water

Question Type : **MCQ**

Question ID : **4058591078**

Option 1 ID : **4058593424**

Option 2 ID : **4058593426**

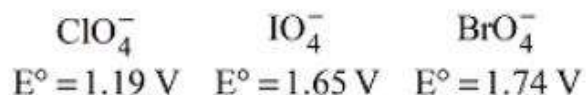
Option 3 ID : **4058593425**

Option 4 ID : **4058593423**

Status : **Not Answered**

Chosen Option : --

Q.72 Reduction potential of ions are given below:



The correct order of their oxidising power is :

- Options
- $\text{BrO}_4^- > \text{ClO}_4^- > \text{IO}_4^-$
 - $\text{ClO}_4^- > \text{IO}_4^- > \text{BrO}_4^-$
 - $\text{IO}_4^- > \text{BrO}_4^- > \text{ClO}_4^-$
 - $\text{BrO}_4^- > \text{IO}_4^- > \text{ClO}_4^-$

Question Type : **MCQ**

Question ID : **4058591079**

Option 1 ID : **4058593430**

Option 2 ID : **4058593427**

Option 3 ID : **4058593428**

Option 4 ID : **4058593429**

Status : **Answered**

Chosen Option : 4

Q.73 Alkaline oxidative fusion of MnO_2 gives "A" which on electrolytic oxidation in alkaline solution produces B. A and B respectively are

- Options
1. Mn_2O_3 and MnO_4^{2-}
 2. Mn_2O_7 and MnO_4^-
 3. MnO_4^{2-} and Mn_2O_7
 4. MnO_4^{2-} and MnO_4^-

Question Type : **MCQ**

Question ID : **4058591083**

Option 1 ID : **4058593443**

Option 2 ID : **4058593446**

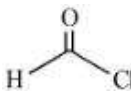
Option 3 ID : **4058593444**

Option 4 ID : **4058593445**

Status : **Not Answered**

Chosen Option : --

Q.74 Salicylaldehyde is synthesized from phenol, when reacted with

- Options
1.  , NaOH
 2. CCl_4 , NaOH
 3. CO_2 , NaOH
 4. HCCl_3 , NaOH

Question Type : **MCQ**

Question ID : **4058591090**

Option 1 ID : **4058593472**

Option 2 ID : **4058593474**

Option 3 ID : **4058593471**

Option 4 ID : **4058593473**

Status : **Answered**

Chosen Option : 4

Q.75 Given below are two statements:

Statement - I: High concentration of strong nucleophilic reagent with secondary alkyl halides which do not have bulky substituents will follow S_N^2 mechanism.

Statement - II: A secondary alkyl halide when treated with a large excess of ethanol follows S_N^1 mechanism.

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

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

Question Type : **MCQ**

Question ID : **4058591089**

Option 1 ID : **4058593470**

Option 2 ID : **4058593468**

Option 3 ID : **4058593467**

Option 4 ID : **4058593469**

Status : **Not Answered**

Chosen Option : --

Q.76 If a substance 'A' dissolves in solution of a mixture of 'B' and 'C' with their respective number of moles as n_A , n_B and n_C , Mole fraction of C in the solution is

:

- Options**
1. $\frac{n_C}{n_A + n_B + n_C}$
 2. $\frac{n_C}{n_A - n_B - n_C}$
 3. $\frac{n_B}{n_A + n_B}$
 4. $\frac{n_C}{n_A \times n_B \times n_C}$

Question Type : **MCQ**

Question ID : **4058591075**

Option 1 ID : **4058593413**

Option 2 ID : **4058593414**

Option 3 ID : **4058593411**

Option 4 ID : **4058593412**

Status : **Answered**

Chosen Option : 1

Q.77 Given below are two statements: One is labelled as **Assertion A** and the other is labelled as **Reason R**:
Assertion A: H_2Te is more acidic than H_2S .
Reason R: Bond dissociation enthalpy of H_2Te is lower than H_2S .
In the light of the above statements, choose the *most appropriate* from the options given below:

- Options
1. Both A and R are true and R is the correct explanation of A.
 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. A is false but R is true.

Question Type : **MCQ**

Question ID : **4058591082**

Option 1 ID : **4058593439**

Option 2 ID : **4058593441**

Option 3 ID : **4058593440**

Option 4 ID : **4058593442**

Status : **Not Answered**

Chosen Option : --

Q.78 Choose the correct statements about the hydrides of group 15 elements.

- A. The stability of the hydrides decreases in the order $\text{NH}_3 > \text{PH}_3 > \text{AsH}_3 > \text{SbH}_3 > \text{BiH}_3$.
- B. The reducing ability of the hydride increases in the order $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3 < \text{SbH}_3 < \text{BiH}_3$.
- C. Among the hydrides, NH_3 is strong reducing agent while BiH_3 is mild reducing agent.
- D. The basicity of the hydrides increases in the order $\text{NH}_3 < \text{PH}_3 < \text{AsH}_3 < \text{SbH}_3 < \text{BiH}_3$.

Choose the *most appropriate* from the options given below:

- Options
1. A and D only
 2. C and D only
 3. A and B only
 4. B and C only

Question Type : **MCQ**

Question ID : **4058591081**

Option 1 ID : **4058593438**

Option 2 ID : **4058593437**

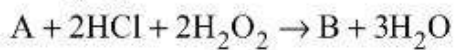
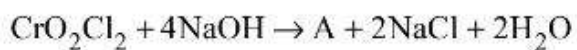
Option 3 ID : **4058593435**

Option 4 ID : **4058593436**

Status : **Not Answered**

Chosen Option : --

Q.79 A and B formed in the following reactions are:



Options 1. $\text{A} = \text{Na}_2\text{Cr}_2\text{O}_7$, $\text{B} = \text{CrO}_3$

2. $\text{A} = \text{Na}_2\text{CrO}_4$, $\text{B} = \text{CrO}_5$

3. $\text{A} = \text{Na}_2\text{Cr}_2\text{O}_7$, $\text{B} = \text{CrO}_5$

4. $\text{A} = \text{Na}_2\text{Cr}_2\text{O}_4$, $\text{B} = \text{CrO}_4$

Question Type : **MCQ**

Question ID : **4058591094**

Option 1 ID : **4058593487**

Option 2 ID : **4058593490**

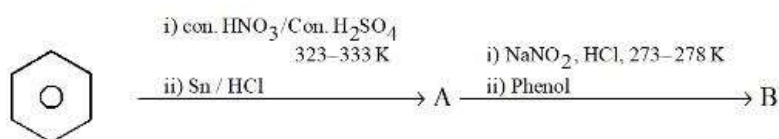
Option 3 ID : **4058593489**

Option 4 ID : **4058593488**

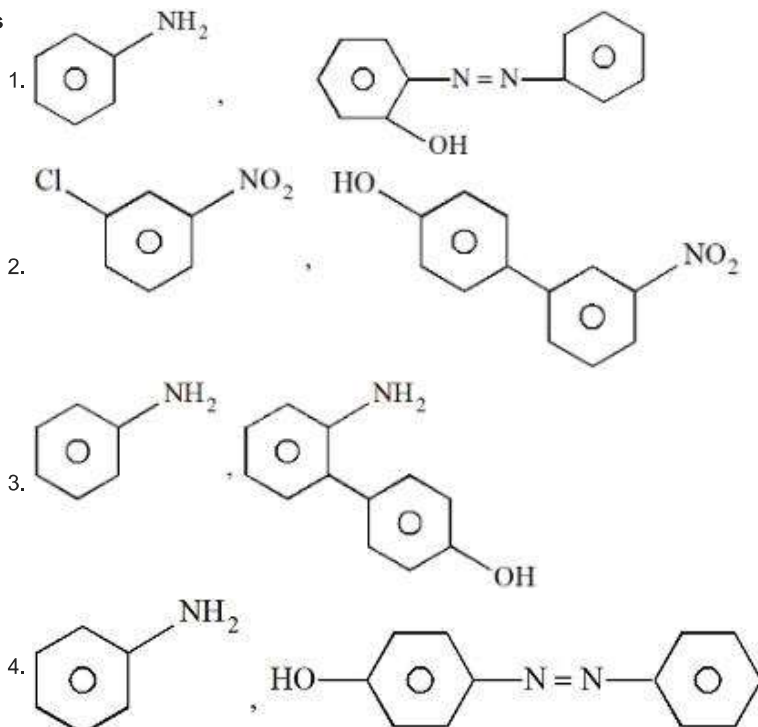
Status : **Answered**

Chosen Option : **2**

Q.80 The products A and B formed in the following reaction scheme are respectively



Options



Question Type : **MCQ**

Question ID : **4058591093**

Option 1 ID : **4058593486**

Option 2 ID : **4058593484**

Option 3 ID : **4058593483**

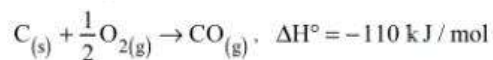
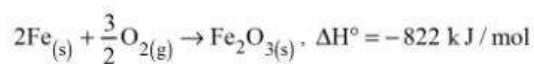
Option 4 ID : **4058593485**

Status : **Answered**

Chosen Option : **4**

Section : **Chemistry Section B**

Q.81 Two reactions are given below:



Then enthalpy change for following reaction $3\text{C}_{(s)} + \text{Fe}_2\text{O}_{3(s)} \rightarrow 2\text{Fe}_{(s)} + 3\text{CO}_{(g)}$ is _____ kJ/mol.

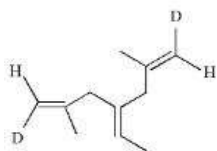
Given --
Answer :

Question Type : **SA**

Question ID : **4058591096**

Status : **Not Answered**

Q.82 Number. of geometrical isomers possible for the given structure is/are _____.



Given --
Answer :

Question Type : **SA**
Question ID : **4058591101**
Status : **Not Answered**

Q.83 The total number of correct statements, regarding the nucleic acids is _____

- A. RNA is regarded as the reserve of genetic information
- B. DNA molecule self-duplicates during cell division
- C. DNA synthesizes proteins in the cell
- D. The message for the synthesis of particular proteins is present in DNA
- E. Identical DNA strands are transferred to daughter cells.

Given 3
Answer :

Question Type : **SA**
Question ID : **4058591103**
Status : **Answered**

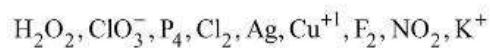
Q.84 2-chlorobutane + $\text{Cl}_2 \rightarrow \text{C}_4\text{H}_8\text{Cl}_2$ (isomers)

Total number of optically active isomers shown by $\text{C}_4\text{H}_8\text{Cl}_2$, obtained in the above reaction is _____.

Given 0
Answer :

Question Type : **SA**
Question ID : **4058591102**
Status : **Answered**

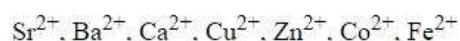
Q.85 Total number of species from the following which can undergo disproportionation reaction is _____.



Given --
Answer :

Question Type : **SA**
Question ID : **4058591098**
Status : **Not Answered**

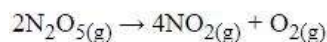
Q.86 Number of metal ions characterized by flame test among the following is _____.



Given --
Answer :

Question Type : SA
Question ID : 4058591104
Status : Not Answered

Q.87 NO_2 required for a reaction is produced by decomposition of N_2O_5 in CCl_4 as by equation



The initial concentration of N_2O_5 is 3 mol L^{-1} and it is 2.75 mol L^{-1} after 30 minutes.

The rate of formation of NO_2 is $x \times 10^{-3} \text{ mol L}^{-1} \text{ min}^{-1}$, value of x is _____.
(nearest integer)

Given 4
Answer :

Question Type : SA
Question ID : 4058591099
Status : Answered

Q.88 The pH of an aqueous solution containing 1M benzoic acid ($\text{pK}_a = 4.20$) and 1M sodium benzoate is 4.5. The volume of benzoic acid solution in 300 mL of this buffer solution is _____ mL. (given : $\log 2 = 0.3$)

Given --
Answer :

Question Type : SA
Question ID : 4058591097
Status : Not Answered

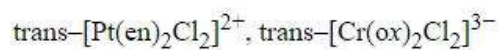
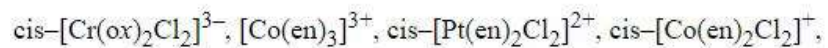
Q.89 Number of spectral lines obtained in He^+ spectra, when an electron makes transition from fifth excited state to first excited state will be

Given --
Answer :

Question Type : SA
Question ID : 4058591095
Status : Not Answered

Q.90 Number of complexes which show optical isomerism among the following is

_____.



Given --
Answer :

Question Type : **SA**

Question ID : **4058591100**

Status : **Not Answered**