

National Testing Agency

Question Paper Name :	B Tech 28th Jan 2026 Shift 2
Subject Name :	B. Tech
Duration :	180
Total Marks :	300
Display Marks:	Yes

B. Tech

Group Number :	1
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300

Mathematics Section A

Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 8606541670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $P_1 : y = 4x^2$ and $P_2 : y = x^2 + 27$ be two parabolas. If the area of the bounded region enclosed between P_1 and P_2 is six times the area of the bounded region enclosed between the line $y = \alpha x$, $\alpha > 0$ and P_1 , then α is equal to :

Options :

8606545687. 6

8606545688. 8

8606545689. 12

8606545690. 15

Question Number : 2 Question Id : 8606541668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $f(x) = \int \frac{dx}{x^{\left(\frac{2}{3}\right)} + 2x^{\left(\frac{1}{2}\right)}}$ be such that $f(0) = -26 + 24 \log_e(2)$. If $f(1) = a + b \log_e(3)$, where $a, b \in \mathbb{Z}$,

then $a + b$ is equal to :

Options :

8606545679. - 26

8606545680. - 18

8606545681. - 11

8606545682. - 5

Question Number : 3 Question Id : 8606541657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements :

Statement I : $25^{13} + 20^{13} + 8^{13} + 3^{13}$ is divisible by 7.

Statement II : The integral part of $(7 + 4\sqrt{3})^{25}$ is an odd number.

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

Options :

8606545635. Both **Statement I** and **Statement II** are true

8606545636. Both **Statement I** and **Statement II** are false

8606545637. **Statement I** is true but **Statement II** is false

8606545638. **Statement I** is false but **Statement II** is true

Question Number : 4 Question Id : 8606541662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let the ellipse $E: \frac{x^2}{144} + \frac{y^2}{169} = 1$ and the hyperbola $H: \frac{x^2}{16} - \frac{y^2}{\lambda^2} = -1$ have the same foci. If e and L

respectively denote the eccentricity and the length of the latus rectum of H , then the value of $24(e + L)$ is :

Options :

8606545655. 67

8606545656. 126

8606545657. 148

Question Number : 5 Question Id : 8606541654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let the arithmetic mean of $\frac{1}{a}$ and $\frac{1}{b}$ be $\frac{5}{16}$, $a > 2$. If α is such that $a, 4, \alpha, b$ are in A.P., then the equation $\alpha x^2 - ax + 2(\alpha - 2b) = 0$ has :

Options :

8606545623. complex roots of magnitude less than 2
8606545624. both roots in the interval $(-2, 0)$
8606545625. one root in $(1, 4)$ and another in $(-2, 0)$
8606545626. one root in $(0, 2)$ and another in $(-4, -2)$

Question Number : 6 Question Id : 8606541656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The sum of the coefficients of x^{499} and x^{500} in $(1+x)^{1000} + x(1+x)^{999} + x^2(1+x)^{998} + \dots + x^{1000}$ is :

Options :

8606545631. $^{1002}C_{501}$
8606545632. $^{1002}C_{500}$
8606545633. $^{1000}C_{501}$
8606545634. $^{1001}C_{501}$

Question Number : 7 Question Id : 8606541669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $y = y(x)$ be the solution of the differential equation $x \frac{dy}{dx} - y = x^2 \cot x$, $x \in (0, \pi)$. If $y\left(\frac{\pi}{2}\right) = \frac{\pi}{2}$, then

$6y\left(\frac{\pi}{6}\right) - 8y\left(\frac{\pi}{4}\right)$ is equal to :

Options :

8606545683. $-\pi$
8606545684. π

8606545685. -3π

8606545686. 3π

Question Number : 8 Question Id : 8606541659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An ellipse has its center at $(1, -2)$, one focus at $(3, -2)$ and one vertex at $(5, -2)$. Then the length of its latus rectum is :

Options :

8606545643. $6\sqrt{3}$

8606545644. $\frac{16}{\sqrt{3}}$

8606545645. $4\sqrt{3}$

8606545646. 6

Question Number : 9 Question Id : 8606541652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements :

Statement I : The function $f: \mathbf{R} \rightarrow \mathbf{R}$ defined by $f(x) = \frac{x}{1 + |x|}$ is one-one.

Statement II : The function $f: \mathbf{R} \rightarrow \mathbf{R}$ defined by $f(x) = \frac{x^2 + 4x - 30}{x^2 - 8x + 18}$ is many-one.

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

Options :

8606545615. Both **Statement I** and **Statement II** are true

8606545616. Both **Statement I** and **Statement II** are false

8606545617. **Statement I** is true but **Statement II** is false

8606545618. **Statement I** is false but **Statement II** is true

Question Number : 10 Question Id : 8606541666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $f(x) = \lim_{\theta \rightarrow 0} \left(\frac{\cos \pi x - x^{\left(\frac{2}{\theta}\right)} \sin(x-1)}{1 + x^{\left(\frac{2}{\theta}\right)} (x-1)} \right), x \in \mathbf{R}$. Consider the following two statements :

(I) $f(x)$ is discontinuous at $x = 1$.

(II) $f(x)$ is continuous at $x = -1$.

Then,

Options :

8606545671. Only (I) is True

8606545672. Only (II) is True

8606545673. Both (I) and (II) are True

8606545674. Neither (I) nor (II) is True

Question Number : 11 Question Id : 8606541663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let A be the focus of the parabola $y^2 = 8x$. Let the line $y = mx + c$ intersect the parabola at two distinct points B and C. If the centroid of the triangle ABC is $\left(\frac{7}{3}, \frac{4}{3}\right)$, then $(BC)^2$ is equal to :

Options :

8606545659. 32

8606545660. 41

8606545661. 80

8606545662. 89

Question Number : 12 Question Id : 8606541667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let $[\cdot]$ denote the greatest integer function. Then $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \left(\frac{12(3+[x])}{3+[\sin x]+[\cos x]} \right) dx$ is equal to :

Options :

8606545675. $15\pi + 4$

8606545676. $13\pi + 1$

8606545677. $11\pi + 2$

8606545678. $12\pi + 5$

Question Number : 13 Question Id : 8606541664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let P be a point in the plane of the vectors $\vec{AB} = 3\hat{i} + \hat{j} - \hat{k}$ and $\vec{AC} = \hat{i} - \hat{j} + 3\hat{k}$ such that P is equidistant from the lines AB and AC. If $\left| \vec{AP} \right| = \frac{\sqrt{5}}{2}$, then the area of the triangle ABP is :

Options :

8606545663. $\frac{3}{2}$

8606545664. $\frac{\sqrt{26}}{4}$

8606545665. $\frac{\sqrt{30}}{4}$

8606545666. 2

Question Number : 14 Question Id : 8606541665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let Q(a, b, c) be the image of the point P(3, 2, 1) in the line $\frac{x-1}{1} = \frac{y}{2} = \frac{z-1}{1}$. Then the distance of Q from the line $\frac{x-9}{3} = \frac{y-9}{2} = \frac{z-5}{-2}$ is

Options :

8606545667. 8

8606545668. 5

8606545669. 6

8606545670. 7

The probability distribution of a random variable X is given below :

X	4k	$\frac{30}{7}k$	$\frac{32}{7}k$	$\frac{34}{7}k$	$\frac{36}{7}k$	$\frac{38}{7}k$	$\frac{40}{7}k$	6k
P(X)	$\frac{2}{15}$	$\frac{1}{15}$	$\frac{2}{15}$	$\frac{1}{5}$	$\frac{1}{15}$	$\frac{2}{15}$	$\frac{1}{5}$	$\frac{1}{15}$

If $E(X) = \frac{263}{15}$, then $P(X < 20)$ is equal to :

Options :

8606545639. $\frac{8}{15}$

8606545640. $\frac{3}{5}$

8606545641. $\frac{11}{15}$

8606545642. $\frac{14}{15}$

Considering the principal values of inverse trigonometric functions, the value of the expression

$\tan\left(2\sin^{-1}\left(\frac{2}{\sqrt{13}}\right) - 2\cos^{-1}\left(\frac{3}{\sqrt{10}}\right)\right)$ is equal to :

Options :

8606545651. $\frac{16}{63}$

8606545652. $\frac{33}{56}$

8606545653. $-\frac{16}{63}$

8606545654. $-\frac{33}{56}$

Question Number : 17 Question Id : 8606541660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let the circle $x^2 + y^2 = 4$ intersect x -axis at the points $A(a, 0)$, $a > 0$ and $B(b, 0)$. Let $P(2 \cos \alpha, 2 \sin \alpha)$, $0 < \alpha < \frac{\pi}{2}$ and $Q(2 \cos \beta, 2 \sin \beta)$ be two points such that $(\alpha - \beta) = \frac{\pi}{2}$. Then the point of intersection of AQ and BP lies on :

Options :

8606545647. $x^2 + y^2 - 4x - 4 = 0$

8606545648. $x^2 + y^2 - 4y - 4 = 0$

8606545649. $x^2 + y^2 - 4x - 4y - 4 = 0$

8606545650. $x^2 + y^2 - 4x - 4y = 0$

Question Number : 18 Question Id : 8606541653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let

$$A = \{z \in \mathbb{C} : |z - 2| \leq 4\} \text{ and}$$

$$B = \{z \in \mathbb{C} : |z - 2| + |z + 2| = 5\}.$$

Then the max $\{|z_1 - z_2| : z_1 \in A \text{ and } z_2 \in B\}$ is :

Options :

8606545619. $\frac{15}{2}$

8606545620. 8

8606545621. $\frac{17}{2}$

8606545622. 9

Question Number : 19 Question Id : 8606541655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\frac{6}{3^{26}} + \frac{10 \cdot 1}{3^{25}} + \frac{10 \cdot 2}{3^{24}} + \frac{10 \cdot 2^2}{3^{23}} + \dots + \frac{10 \cdot 2^{24}}{3}$ is equal to :

Options :

8606545627. 3^{25}

8606545628. 3^{26}

8606545629. 2^{25}

8606545630. 2²⁶

Question Number : 20 Question Id : 8606541651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The sum of all the elements in the range of $f(x) = \text{Sgn}(\sin x) + \text{Sgn}(\cos x) + \text{Sgn}(\tan x) + \text{Sgn}(\cot x)$,

$x \neq \frac{n\pi}{2}, n \in \mathbb{Z}$, where $\text{Sgn}(t) = \begin{cases} 1, & \text{if } t > 0 \\ -1, & \text{if } t < 0 \end{cases}$, is :

Options :

8606545611. 2

8606545612. 4

8606545613. -2

8606545614. 0

Mathematics Section B

Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 21 Question Id : 8606541672 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

If $\sum_{r=1}^{25} \left(\frac{r}{r^4 + r^2 + 1} \right) = \frac{p}{q}$, where p and q are positive integers such that $\text{gcd}(p, q) = 1$, then p + q is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText

Question Number : 22 Question Id : 8606541673 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Three persons enter in a lift at the ground floor. The lift will go upto 10th floor. The number of ways, in which the three persons can exit the lift at three different floors, if the lift does not stop at first, second and third floors, is equal to _____.

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText

Question Number : 23 Question Id : 8606541674 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

If the distance of the point $P(43, \alpha, \beta)$, $\beta < 0$, from the line $\vec{r} = 4\hat{i} - \hat{k} + \mu(2\hat{i} + 3\hat{k})$, $\mu \in \mathbf{R}$ along a line with direction ratios $3, -1, 0$ is $13\sqrt{10}$, then $\alpha^2 + \beta^2$ is equal to _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 24 Question Id : 8606541675 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let f be a differentiable function satisfying $f(x) = 1 - 2x + \int_0^x e^{(x-t)} f(t) dt$, $x \in \mathbf{R}$ and let

$g(x) = \int_0^x (f(t) + 2)^{15} (t - 4)^6 (t + 12)^{17} dt$, $x \in \mathbf{R}$. If p and q are respectively the points of local minima and local maxima of g , then the value of $|p + q|$ is equal to _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 25 Question Id : 8606541671 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Let $A = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix}$ and B be two matrices such that $A^{100} = 100B + I$. Then the sum of all the elements of B^{100} is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Physics Section A

Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 26 Question Id : 8606541691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a transparent prism, if the angle of minimum deviation is equal to its refracting angle, the refractive index n of the prism satisfies.

Options :

8606545756. $1 < n < 2$

8606545757. $n \geq 2$

8606545758. $\sqrt{2} < n < 2\sqrt{2}$

8606545759. $\sqrt{2} < n < 2$

Question Number : 27 Question Id : 8606541689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following is **not** a measurable quantity ?

Options :

8606545748. Displacement current

8606545749. Voltage

8606545750. Voltage difference

8606545751. Resistance

Question Number : 28 Question Id : 8606541685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Identify the correct statements :

- A. Electrostatic field lines form closed loops .
- B. The electric field lines point radially outward when charge is greater than zero.
- C. The Gauss - Law is valid only for inverse - square force.
- D. The workdone in moving a charged particle in a static electric field around a closed path is zero.
- E. The motion of a particle under Coulomb's force must take place in a plane.

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

Options :

8606545732. A, B, C, D Only

8606545733. B, C, D, E Only

8606545734. A, C, E Only

8606545735. A, B, D, E Only

Question Number : 29 Question Id : 8606541677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The time period of a simple harmonic oscillator is $T = 2\pi\sqrt{\frac{k}{m}}$. Measured value of mass (m) of the object is 10 g with an accuracy of 10 mg and time for 50 oscillations of the spring is found to be 60 s using a watch of 2 s resolution. Percentage error in determination of spring constant (k) is _____%.

Options :

8606545700. 6.76

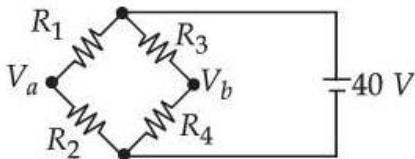
8606545701. 3.35

8606545702. 7.60

8606545703. 3.43

Question Number : 30 Question Id : 8606541687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Wheatstone bridge is initially at room temperature and all arms of the bridge have same value of resistances ($R_1 = R_2 = R_3 = R_4$). When R_3 resistance is heated to some temperature, its resistance value has gone up by 10%. The potential difference ($V_a - V_b$) (after R_3 is heated) is _____ V.



Options :

8606545740. 1.05

8606545741. 0

8606545742. 2

8606545743. 0.95

Question Number : 31 Question Id : 8606541683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The speed of a longitudinal wave in a metallic bar is 400 m/s. If the density and Young's modulus of the bar material are increased by 0.5% and 1%, respectively then the speed of the wave is changed approximately to _____ m/s.

Options :

8606545724. 398

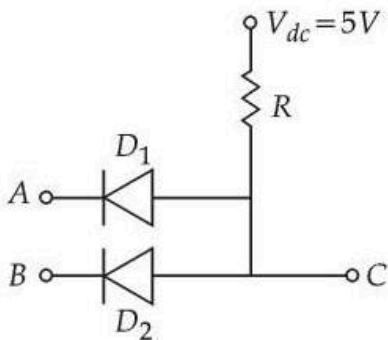
8606545725. 401

8606545726. 402

8606545727. 399

Question Number : 32 Question Id : 8606541695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two p-n junction diodes D_1 and D_2 are connected as shown in figure. A and B are input signals and C is the output. The given circuit will function as a _____.



Options :

8606545772. OR Gate

8606545773. NAND Gate

8606545774. AND Gate

8606545775. NOR Gate

Question Number : 33 Question Id : 8606541684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The mean free path of a molecule of diameter 5×10^{-10} m at the temperature 41°C and pressure 1.38×10^5 Pa, is given as _____ m. (Given $k_B = 1.38 \times 10^{-23}$ J/K).

Options :

8606545728. $10\sqrt{2} \times 10^{-8}$

8606545729. $2\sqrt{2} \times 10^{-8}$

8606545730. $2\sqrt{2} \times 10^{-10}$

8606545731. 2×10^{-8}

Question Number : 34 Question Id : 8606541694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A nucleus has mass number α and radius R_α . Another nucleus has mass number β and radius R_β .
If $\beta = 8\alpha$ then R_α / R_β is :

Options :

8606545768. 0.5

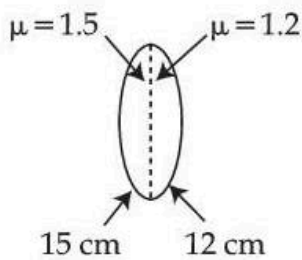
8606545769. 1

8606545770. 8

8606545771. 2

Question Number : 35 Question Id : 8606541692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A biconvex lens is formed by using two thin planoconvex lenses, as shown in the figure. The refractive index and radius of curved surfaces are also mentioned in figure. When an object is placed on the left side of lens at a distance of 30 cm from the biconvex lens, the magnification of the image will be :



Options :

8606545760. +2

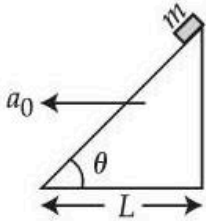
8606545761. -2

8606545762. -2.5

8606545763. +2.5

Question Number : 36 Question Id : 8606541679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A small block of mass m slides down from the top of a frictionless inclined surface, while the inclined plane is moving towards left with constant acceleration a_0 . The angle between the inclined plane and ground is θ and its base length is L . Assuming that initially the small block is at the top of the inclined plane, the time it takes to reach the lowest point of the inclined plane is _____.



Options :

8606545708. $\sqrt{\frac{4L}{g \sin 2\theta - a_0(1 + \cos 2\theta)}}$

8606545709. $\sqrt{\frac{2L}{g \sin 2\theta - a_0(1 + \cos 2\theta)}}$

8606545710. $\sqrt{\frac{4L}{g \cos^2 \theta - a_0 \sin \theta \cos \theta}}$

8606545711. $\sqrt{\frac{2L}{g \sin \theta - a_0 \cos \theta}}$

Question Number : 37 Question Id : 8606541676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an experiment, a set of reading are obtained as follows - 1.24 mm, 1.25 mm, 1.23 mm, 1.21 mm. The expected least count of the instrument used in recording these readings is _____ mm.

Options :

8606545696. 0.1

8606545697. 0.001

8606545698. 0.05

8606545699. 0.01

Question Number : 38 Question Id : 8606541693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Number of photons of equal energy emitted per second by a 6 mW laser source operating at 663 nm is _____. (Given : $h = 6.63 \times 10^{-34}$ J.s and $c = 3 \times 10^8$ m/s)

Options :

8606545764. 5×10^{15}

8606545765. 10×10^{15}

8606545766. 2×10^{16}

8606545767. 5×10^{16}

Question Number : 39 Question Id : 8606541680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A particle starts moving from time $t=0$ and its coordinate is given as $x(t) = 4t^3 - 3t$

- A. The particle returns to its original position (origin) 0.866 units later
- B. The particle is 1 unit away from origin at its turning point
- C. Acceleration of the particle is non-negative
- D. The particle is 0.5 units away from origin at its turning point
- E. Particle never turns back as acceleration is non-negative

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

Options :

8606545712. A, C Only

8606545713. A, C, D Only

8606545714. A, B, C Only

8606545715. C, E Only

Question Number : 40 Question Id : 8606541682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match List - I with List - II.

List - I

- A. Coefficient of viscosity
- B. Surface tension
- C. Pressure
- D. Surface energy

List - II

- I. $[ML^{-1}T^{-2}]$
- II. $[ML^2T^{-2}]$
- III. $[ML^0T^{-2}]$
- IV. $[ML^{-1}T^{-1}]$

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

Options :

8606545720. A-IV, B-III, C-I, D-II

8606545721. A-I, B-II, C-IV, D-III

8606545722. A-I, B-III, C-II, D-IV

8606545723. A-IV, B-I, C-II, D-III

Question Number : 41 Question Id : 8606541690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A plane electromagnetic wave is moving in free space with velocity $c = 3 \times 10^8$ m/s and its electric field is given as $\vec{E} = 54 \sin(kz - \omega t) \hat{j}$ V/m, where $\hat{j}$ is the unit vector along y -axis. The magnetic field vector $\vec{B}$ of the wave is :

Options :

8606545752. $-1.8 \times 10^{-7} \sin(kz - \omega t) \hat{i}$ T

8606545753. $1.4 \times 10^{-7} \sin(kz - \omega t) \hat{k}$ T

8606545754. $+1.8 \times 10^{-7} \sin(kz - \omega t) \hat{i}$ T

8606545755. $1.4 \times 10^{-7} \sin(kz - \omega t) \hat{i}$ T

Question Number : 42 Question Id : 8606541688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A long cylindrical conductor with large cross section carries an electric current distributed uniformly over its cross-section. Magnetic field due to this current is :

- A. maximum at either ends of the conductor and minimum at the midpoint
- B. maximum at the axis of the conductor
- C. minimum at the surface of the conductor
- D. minimum at the axis of the conductor
- E. same at all points in the cross-section of the conductor

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

Options :

8606545744. A, D Only

8606545745. D Only

8606545746. B, C Only

8606545747. E Only

Question Number : 43 Question Id : 8606541681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

When the position vector $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ changes sign as $-\vec{r}$, which one of the following vector will not flip under sign change ?

Options :

8606545716. Velocity

8606545717. Acceleration

8606545718. Angular momentum

8606545719. Linear momentum

Question Number : 44 Question Id : 8606541686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Identify the correct statements :

- A. Effective capacitance of a series combination of capacitors is always smaller than the smallest capacitance of the capacitor in the combination.
- B. When a dielectric medium is placed between the charged plates of a capacitor, displacement of charges cannot occur due to insulation property of dielectric.
- C. Increasing of area of capacitor plate or decreasing of thickness of dielectric is an alternate method to increase the capacitance.
- D. For a point charge, concentric spherical shells centered at the location of the charge are equipotential surfaces.

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

Options :

8606545736. A, B and C Only

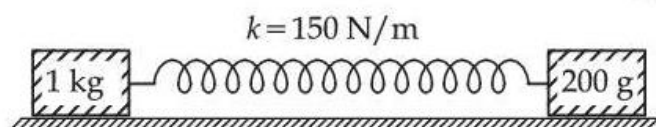
8606545737. B and D Only

8606545738. C and D Only

8606545739. A, C and D Only

Question Number : 45 Question Id : 8606541678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

As shown in the figure, a spring is kept in a stretched position with some extension by holding the masses 1 kg and 0.2 kg with a separation more than spring natural length and are released. Assuming the horizontal surface to be frictionless, the angular frequency (in SI unit) of the system is :



Options :

8606545704. 5

8606545705. 30

8606545706. 27

8606545707. 20

Physics Section B

Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 46 Question Id : 8606541696 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A fly wheel having mass 3 kg and radius 5 m is free to rotate about a horizontal axis. A string having negligible mass is wound around the wheel and the loose end of the string is connected to 3 kg mass. The mass is kept at rest initially and released. Kinetic energy of the wheel when the mass descends by 3 m is _____ J. ($g = 10 \text{ m/s}^2$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 47 Question Id : 8606541697 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Two tuning forks A and B are sounded together giving rise to 8 beats in 2 s. When fork A is loaded with wax, the beat frequency is reduced to 4 beats in 2 s. If the original frequency of tuning fork B is 380 Hz then original frequency of tuning fork A is _____ Hz.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 48 Question Id : 8606541700 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A beam of light consisting of wavelengths 650 nm and 550 nm illuminates the Young's double slits with separation of 2 mm such that the interference fringes are formed on a screen, placed at a distance of 1.2 m from the slits. The least distance of a point from the central maximum, where the bright fringes due to both the wavelengths coincide, is _____ $\times 10^{-5}$ m.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal
Text Areas : PlainText

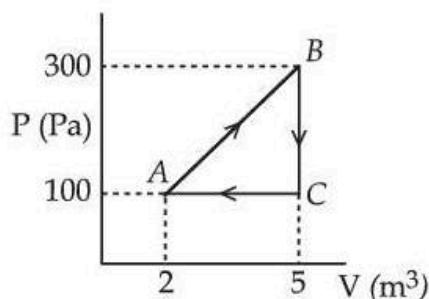
Question Number : 49 Question Id : 8606541698 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

An inductor stores 16 J of magnetic field energy and dissipates 32 W of thermal energy due to its resistance when an a.c. current of 2 A (rms) and frequency 50 Hz flows through it. The ratio of inductive reactance to its resistance is _____. ($\pi = 3.14$)

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText

Question Number : 50 Question Id : 8606541699 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A thermodynamic system is taken through the cyclic process ABC as shown in the figure. The total work done by the system during the cycle ABC is _____ J.



Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText

Chemistry Section A

Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 51 Question Id : 8606541707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the elements N, P, O, S, Cl and F. The number of valence electrons present in the elements with most and least metallic character from the above list is respectively.

Options :

8606545805. 7 and 5

8606545806. 6 and 7

8606545807. 5 and 7

8606545808. 5 and 6

Question Number : 52 Question Id : 8606541703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The plot of $\log_{10} K$ vs $\frac{1}{T}$ gives a straight line. The intercept and slope respectively are (where K is equilibrium constant).

Options :

8606545789. $-\frac{\Delta H^{\circ}}{2.303R}, \frac{\Delta S^{\circ}}{2.303R}$

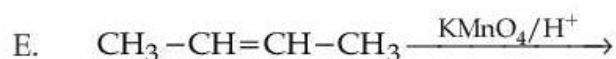
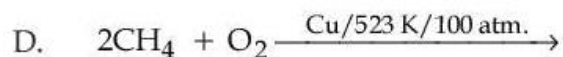
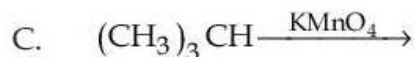
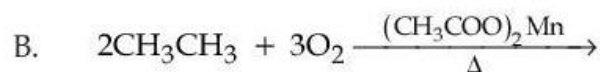
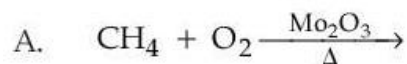
8606545790. $-\frac{\Delta S^{\circ}R}{2.303}, \frac{\Delta H^{\circ}R}{2.303}$

8606545791. $\frac{2.303R}{\Delta H^{\circ}}, \frac{2.303R}{\Delta S^{\circ}}$

8606545792. $\frac{\Delta S^{\circ}}{2.303R}, -\frac{\Delta H^{\circ}}{2.303R}$

Question Number : 53 Question Id : 8606541714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The reactions which produce alcohol as the product are :



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

Options :

8606545833. A and D Only

8606545834. B, D and E Only

8606545835. C and D Only

8606545836. A, C and E Only

Question Number : 54 Question Id : 8606541720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A student has been given 0.314 g of an organic compound and asked to estimate Sulphur. During the experiment, the student has obtained 0.4813 g of barium sulphate. The percentage of sulphur present in the compound is _____. (Given Molar mass in g mol^{-1} S : 32, BaSO_4 : 233)

Options :

8606545857. 42.10%

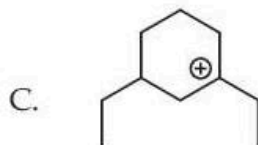
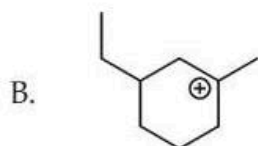
8606545858. 63.15%

8606545859. 48.24%

8606545860. 21.05%

Question Number : 55 Question Id : 8606541712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The cyclic cations having the same number of hyperconjugation are :



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

Options :

8606545825. A and B Only

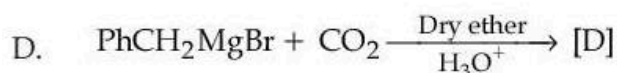
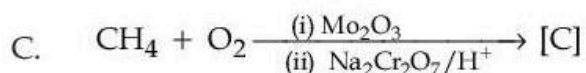
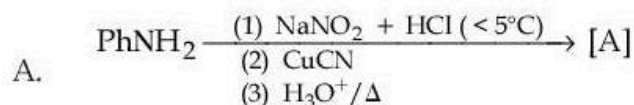
8606545826. A, C and D only

8606545827. B and C Only

8606545828. A and C Only

Question Number : 56 Question Id : 8606541716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct order of acidic strength of the major products formed in the given reactions, is :



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

Options :

8606545841. $\text{A} > \text{D} > \text{B} > \text{C}$

8606545842. $\text{A} > \text{D} > \text{C} > \text{B}$

8606545843. $\text{C} > \text{A} > \text{D} > \text{B}$

8606545844. $\text{C} > \text{B} > \text{A} > \text{D}$

Question Number : 57 Question Id : 8606541718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Total number of alkali insoluble solid sulphonamides obtained by reaction of given amines with Hinsberg's reagent is _____.

Aniline, N-Methylaniline, Methanamine, N, N – Dimethylmethanamine, N-Methyl methanamine, Phenylmethanamine, N-propylaniline, N-phenylaniline, N, N-Dimethylaniline, Allyl amine, Isopropyl amine

Options :

8606545849. 5

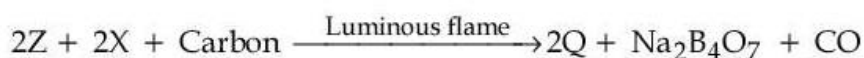
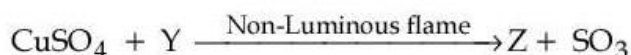
8606545850. 4

8606545851. 8

8606545852. 2

Question Number : 58 Question Id : 8606541711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following reactions



The oxidation states of Cu in Z and Q, respectively are :

Options :

8606545821. +2 and +2

8606545822. +2 and +1

8606545823. +1 and +1

8606545824. +1 and +2

Question Number : 59 Question Id : 8606541702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The wavelength of photon 'A' is 400 nm. The frequency of photon 'B' is 10^{16} s^{-1} . The wave number of photon 'C' is 10^4 cm^{-1} . The correct order of energy of these photons is :

Options :

8606545785. $A > B > C$

8606545786. $C > B > A$

8606545787. $B > A > C$

8606545788. $A > C > B$

Question Number : 60 Question Id : 8606541717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

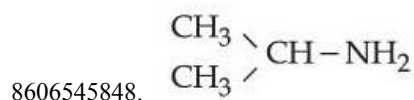
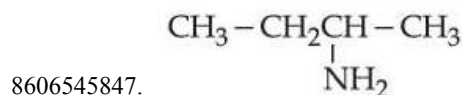
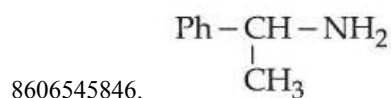
A student performed analysis of aliphatic organic compound 'X' which on analysis gave C = 61.01%, H = 15.25%, N = 23.74%.

This compound, on treatment with $\text{HNO}_2/\text{H}_2\text{O}$ produced another compound 'Y' which did not contain any nitrogen atom. However, the compound 'Y' upon controlled oxidation produced another compound 'Z' that responded to iodoform test.

The structure of 'X' is :

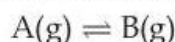
Options :

8606545845. $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$



Question Number : 61 Question Id : 8606541705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Observe the following equilibrium in a 1 L flask.



At T(K), the equilibrium concentrations of A and B are 0.5 M and 0.375 M respectively. 0.1 moles of A is added into the flask and heated to T(K) to establish the equilibrium again. The new equilibrium concentrations (in M) of A and B are respectively

Options :

8606545797. 0.557, 0.418.

8606545798. 0.742, 0.557.

8606545799. 0.367, 0.275.

8606545800. 0.53, 0.4.

Question Number : 62 Question Id : 8606541708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements :

Statement I : The increasing order of boiling point of hydrogen halides is $\text{HCl} < \text{HBr} < \text{HI} < \text{HF}$.

Statement II : The increasing order of melting point of hydrogen halides is $\text{HCl} < \text{HBr} < \text{HF} < \text{HI}$.

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

Options :

8606545809. Both **Statement I** and **Statement II** are true

8606545810. Both **Statement I** and **Statement II** are false

8606545811. **Statement I** is true but **Statement II** is false

8606545812. **Statement I** is false but **Statement II** is true

Match List - I with List - II according to shape.

List - I	List - II
A. XeO_3	I. BrF_5
B. XeF_2	II. NH_3
C. XeO_2F_2	III. $[\text{I}_3]^-$
D. XeOF_4	IV. SF_4

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

Options :

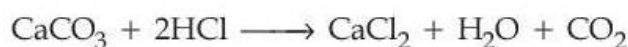
8606545801. A-II, B-I, C-III, D-IV

8606545802. A-II, B-III, C-I, D-IV

8606545803. A-III, B-II, C-IV, D-I

8606545804. A-II, B-III, C-IV, D-I

For the given reaction;



If 90 g CaCO_3 is added to 300 mL of HCl which contains 38.55% HCl by mass and has density 1.13 g mL^{-1} , then which of the following option is **correct** ?

Given molar mass of H, Cl, Ca and O are 1, 35.5, 40 and 16 g mol^{-1} respectively.

Options :

8606545781. 60.32 g of HCl remains unreacted

8606545782. 64.97 g of HCl remains unreacted

8606545783. 32.85 g of CaCO_3 remains unreacted

8606545784. 97.30 g of HCl reacted

Question Number : 65 Question Id : 8606541709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following statements about manganate and permanganate ions. Identify the correct statements.

- A. The geometry of both manganate and permanganate ions is tetrahedral.
- B. The oxidation states of Mn in manganate and permanganate are +7 and +6, respectively.
- C. Oxidation of Mn(II) salt by peroxodisulphate gives manganate ion as the final product.
- D. Manganate ion is paramagnetic and permanganate ions is diamagnetic.
- E. Acidified permanganate ion reduces oxalate, nitrite and iodide ions.

Choose the correct answer from the options given below :

Options :

8606545813. A, B and C Only

8606545814. A, D and E Only

8606545815. A, C and D Only

8606545816. A and D Only

Question Number : 66 Question Id : 8606541710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct increasing order of spin-only magnetic moment values of the complex ions $[\text{MnBr}_4]^{2-}$ (A), $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$ (B), $[\text{Ni}(\text{CN})_4]^{2-}$ (C) and $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$ (D) is :

Options :

8606545817. $A = B < C < D$

8606545818. $A = B < D < C$

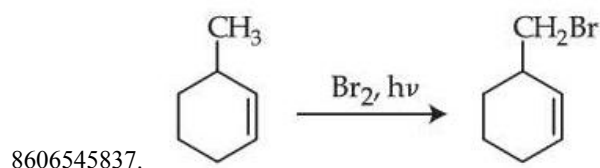
8606545819. $C = D < B < A$

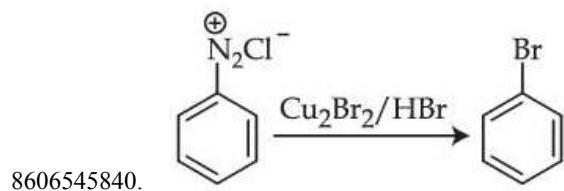
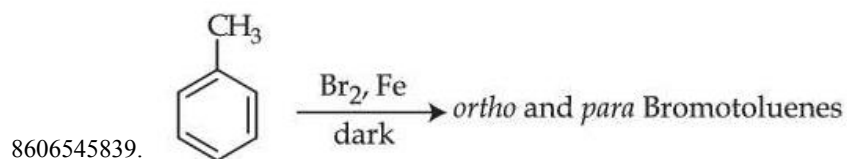
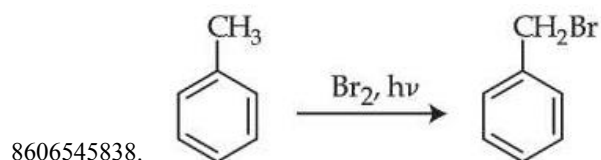
8606545820. $C < B < D < A$

Question Number : 67 Question Id : 8606541715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following reaction is NOT correctly represented ?

Options :

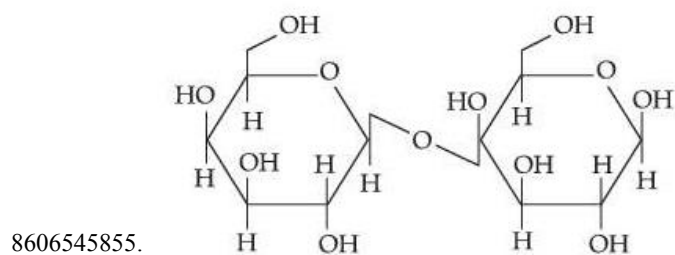
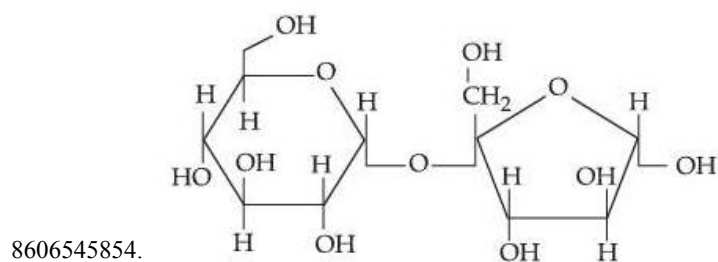
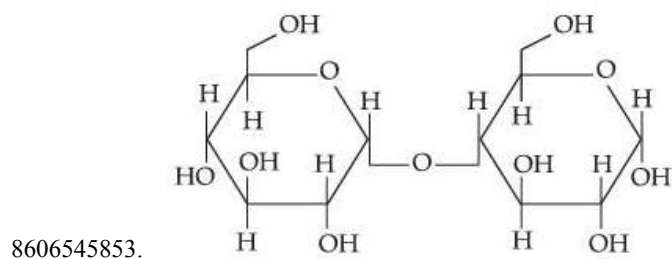


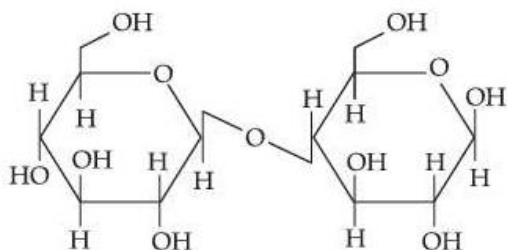


Question Number : 68 Question Id : 8606541719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Structures of four disaccharides are given below. Among the given disaccharides, the non-reducing sugar is :

Options :





8606545856.

Question Number : 69 Question Id : 8606541713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Identify the **correct** statements :

The presence of $-\text{NO}_2$ group in benzene ring

- A. activates the ring towards electrophilic substitutions.
- B. deactivates the ring towards electrophilic substitutions.
- C. activates the ring towards nucleophilic substitutions.
- D. deactivates the ring towards nucleophilic substitutions.

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

Options :

8606545829. A and D Only

8606545830. C and A Only

8606545831. B and C Only

8606545832. B and D Only

Question Number : 70 Question Id : 8606541704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following aqueous solutions.

- I. 2.2 g Glucose in 125 mL of solution.
- II. 1.9 g Calcium chloride in 250 mL of solution.
- III. 9.0 g Urea in 500 mL of solution.
- IV. 20.5 g Aluminium sulphate in 750 mL of solution.

The **correct** increasing order of boiling point of these solutions will be :

[Given : Molar mass in g mol^{-1} : H = 1, C = 12, N = 14, O = 16, Cl = 35.5, Ca = 40, Al = 27 and S = 32]

Options :

8606545793. I < II < III < IV

8606545794. III < I < II < IV

8606545795. II < III < I < IV

8606545796. II < III < IV < I

Chemistry Section B

Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	20
Maximum Instruction Time :	0
Sub-Section Number :	1
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 71 Question Id : 8606541722 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

For strong electrolyte Λ_m increases slowly with dilution and can be represented by the equation

$$\Lambda_m = \Lambda_m^\circ - Ac^{1/2}$$

Molar conductivity values of the solutions of strong electrolyte AB at 18°C are given below :

c [mol L ⁻¹]	0.04	0.09	0.16	0.25
Λ_m [S cm ² mol ⁻¹]	96.1	95.7	95.3	94.9

The value of constant A based on the above data [in S cm² mol⁻¹/(mol/L)^{1/2}] unit is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 72 Question Id : 8606541724 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A $\longrightarrow$ B (first reaction)

C $\longrightarrow$ D (second reaction)

Consider the above two first-order reactions. The rate constant for first reaction at 500 K is double of the same at 300 K. At 500 K, 50% of the reaction becomes complete in 2 hour. The activation energy of the second reaction is half of that of first reaction. If the rate constant at 500 K of the second reaction becomes double of the rate constant of first reaction at the same temperature; then rate constant for the second reaction at 300 K is _____ $\times 10^{-1}$ hour⁻¹ (nearest integer).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 73 Question Id : 8606541725 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

The number of isoelectronic species among Sc³⁺, Cr²⁺, Mn³⁺, Co³⁺ and Fe³⁺ is 'n'. If 'n' moles of AgCl is formed during the reaction of complex with formula CoCl₃(en)₂NH₃ with excess of AgNO₃ solution, then the number of electrons present in the t_{2g} orbital of the complex is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

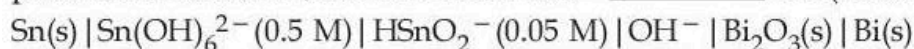
Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 74 Question Id : 8606541723 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

A volume of x mL of 5 M NaHCO_3 solution was mixed with 10 mL of 2 M H_2CO_3 solution to make an electrolytic buffer. If the same buffer was used in the following electrochemical cell to record a cell potential of 235.3 mV, then the value of $x =$ _____ mL (nearest integer).



Consider upto one place of decimal for intermediate calculations

$$\left[\begin{array}{l} \text{Given :} \quad E^\circ_{\text{HSnO}_2^- \mid \text{Sn(OH)}_6^{2-}} = -0.9 \text{ V} \\ E^\circ_{\text{Bi}_2\text{O}_3 \mid \text{Bi}} = -0.44 \text{ V} \\ \text{pK}_a(\text{H}_2\text{CO}_3) = 6.11 \\ \frac{2.303 RT}{F} = 0.059 \text{ V} \\ \text{Antilog}(1.29) = 19.5 \end{array} \right]$$

Response Type : Numeric

Evaluation Required For SA : Yes

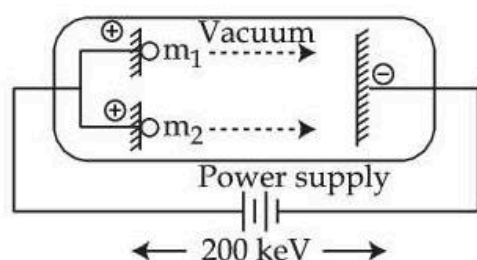
Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Question Number : 75 Question Id : 8606541721 Question Type : SA Display Question Number : Yes Keyboard Layout : Inscript

Two positively charged particles m_1 and m_2 have been accelerated across the same potential difference of 200 keV as shown below.



[Given mass of $m_1 = 1$ amu and $m_2 = 4$ amu]

The deBroglie wavelength of m_1 will be x times of m_2 . The value of x is _____ (nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText