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Question Paper Name :	B Tech 1st Feb 2024 Shift 2
Subject Name :	B. Tech
Creation Date :	2024-02-03 09:45:55
Duration :	180
Total Marks :	300
Display Marks:	Yes

B. Tech

Group Number :	1
Group Id :	95617723
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics Section A

Section Id :	95617774
Section Number :	1

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	95617777
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 1 Question Id : 9561771216 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the domain of the function $f(x) = \frac{\sqrt{x^2 - 25}}{(4 - x^2)} + \log_{10}(x^2 + 2x - 15)$ is $(-\infty, \alpha) \cup [\beta, \infty)$, then $\alpha^2 + \beta^3$ is equal to :

Options :

9561772551. 125

9561772552. 140

9561772553. 150

9561772554. 175

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Question Number : 1 Question Id : 9561771216 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि फलन $f(x) = \dfrac{\sqrt{x^2 - 25}}{(4 - x^2)} + \log_{10}(x^2 + 2x - 15)$ का प्रांत $(-\infty, \alpha) \cup [\beta, \infty)$ है, तो $\alpha^2 + \beta^3$ बराबर है :

Options :

9561772551. 125

9561772552. 140

9561772553. 150

9561772554. 175

Question Number : 2 Question Id : 9561771217 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the relations R_1 and R_2 defined as $aR_1b \Leftrightarrow a^2 + b^2 = 1$ for all $a, b \in \mathbf{R}$ and $(a, b)R_2(c, d) \Leftrightarrow a + d = b + c$ for all $(a, b), (c, d) \in \mathbf{N} \times \mathbf{N}$. Then

Options :

9561772555. Only R_1 is an equivalence relation

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9561772556. Only R_2 is an equivalence relation

9561772557. R_1 and R_2 both are equivalence relations

9561772558. Neither R_1 nor R_2 is an equivalence relation

Question Number : 2 Question Id : 9561771217 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सभी $a, b \in \mathbf{R}$ के लिए $a R_1 b \Leftrightarrow a^2+b^2=1$ तथा सभी $(a, b), (c, d) \in \mathbf{N} \times \mathbf{N}$ के लिए $(a, b) R_2 (c, d) \Leftrightarrow$ $a+d=b+c$ द्वारा परिभाषित संबंधों R_1 तथा R_2 में :

Options :

9561772555. केवल R_1 एक तुल्यता संबंध है

9561772556. केवल R_2 एक तुल्यता संबंध है

9561772557. R_1 तथा R_2 दोनों तुल्यता संबंध हैं

9561772558. न तो R_1 न ही R_2 एक तुल्यता संबंध है

Question Number : 3 Question Id : 9561771218 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If z is a complex number such that $|z| \geq 1$, then the minimum value of $\left|z + \frac{1}{2}(3 + 4i)\right|$ is :

Options :

9561772559. $\frac{3}{2}$

9561772560. 2

9561772561. $\frac{5}{2}$

9561772562. 3

Question Number : 3 Question Id : 9561771218 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि एक सम्मिश्र संख्या z के लिए $|z| \geq 1$ है, तो $\left|z + \frac{1}{2}(3 + 4i)\right|$ का न्यूनतम मान है :

Options :

9561772559. $\frac{3}{2}$

9561772560. 2

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9561772561. $\frac{5}{2}$

9561772562. 3

Question Number : 4 Question Id : 9561771219 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let α and β be the roots of the equation $px^2+qx-r=0$, where $p\neq 0$. If p, q and r be the consecutive terms of a non constant G.P. and $\frac{1}{\alpha}+\frac{1}{\beta}=\frac{3}{4}$, then the value of $(\alpha-\beta)^2$ is :

Options :

9561772563. 9

9561772564. $\frac{80}{9}$

9561772565. $\frac{20}{3}$

9561772566. 8

Question Number : 4 Question Id : 9561771219 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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Correct Marks : 4 Wrong Marks : 1

माना समीकरण $px^2+qx-r=0$, $p\neq 0$ के मूल α तथा β हैं। यदि p, q तथा r एक परिवर्तनीय (non constant) G.P. के क्रमागत पद हैं तथा $\frac{1}{\alpha}+\frac{1}{\beta}=\frac{3}{4}$ है, तो $(\alpha-\beta)^2$ का मान है :

Options :

9561772563. 9

9561772564. $\frac{80}{9}$

9561772565. $\frac{20}{3}$

9561772566. 8

Question Number : 5 Question Id : 9561771220 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let the system of equations $x+2y+3z=5$, $2x+3y+z=9$, $4x+3y+\lambda z=\mu$ have infinite number of solutions. Then $\lambda+2\mu$ is equal to :

Options :

9561772567. 17

9561772568. 22

9561772569.

15

9561772570. 28

Question Number : 5 Question Id : 9561771220 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना समीकरण निकाय $x+2y+3z=5, 2x+3y+z=9, 4x+3y+\lambda z=\mu$ के अनंत हल हैं। तो $\lambda+2\mu$ बराबर है :

Options :

9561772567. 17

9561772568. 22

9561772569. 15

9561772570. 28

Question Number : 6 Question Id : 9561771221 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Let m and n be the coefficients of seventh and thirteenth terms respectively in the expansion of $\left(\frac{1}{3}x^{\frac{1}{3}}+\frac{1}{2x^{\frac{2}{3}}}\right)^{18}$. Then $\left(\frac{n}{m}\right)^{\frac{1}{3}}$ is :

Options :

9561772571. $\frac{1}{4}$

9561772572. $\frac{1}{9}$

9561772573. $\frac{4}{9}$

9561772574. $\frac{9}{4}$

Question Number : 6 Question Id : 9561771221 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $\left(\frac{1}{3}x^{\frac{1}{3}}+\frac{1}{2x^{\frac{2}{3}}}\right)^{18}$ के प्रसार में सातवें तथा तेरहवें पदों के गुणांक क्रमशः m तथा n है। तो $\left(\frac{n}{m}\right)^{\frac{1}{3}}$ बराबर है :

Options :

9561772571. $\frac{1}{4}$

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9561772572. $\frac{1}{9}$

9561772573. $\frac{4}{9}$

9561772574. $\frac{9}{4}$

Question Number : 7 Question Id : 9561771222 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let S_n denote the sum of the first n terms of an arithmetic progression. If $S_{10} = 390$ and the ratio of the tenth and the fifth terms is 15 : 7, then $S_{15} - S_5$ is equal to :

Options :

9561772575. 690

9561772576. 800

9561772577. 890

9561772578. 790

Question Number : 7 Question Id : 9561771222 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना एक समान्तर श्रेढ़ी के प्रथम n पदों का योग S_n है। यदि $S_{10}=390$ तथा दसवें और पाँचवें पदों का अनुपात 15 : 7 है, तो $S_{15}-S_5$ बराबर है :

Options :

9561772575. 690

9561772576. 800

9561772577. 890

9561772578. 790

Question Number : 8 Question Id : 9561771223 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let $f(x)=|2x^2+5|x|-3|$, $x \epsilon R$. If m and n denote the number of points where f is not continuous and not differentiable respectively, then m + n is equal to :

Options :

9561772579. 0

9561772580. 2

9561772581. 3

9561772582. 5

Question Number : 8 Question Id : 9561771223 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $f(x)=|2x^2+5|x|-3|, x\epsilon R$ हैं। यदि m तथा n क्रमशः उन बिंदुओं, जहाँ पर f संतत **नहीं** है तथा अवकलनीय **नहीं** है की संख्या हैं, तो m+n बराबर है :

Options :

9561772579. 0

9561772580. 2

9561772581. 3

9561772582. 5

Question Number : 9 Question Id : 9561771224 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Let $f(x)=\begin{cases}x-1, x \text{ is even,}\\ 2x, \quad x \text{ is odd,}\end{cases}$ $x \in \mathbb{N}$. If for some $a \in \mathbb{N}$, $f(f(f(a)))=21$, then $\lim_{x\to a^-}\left\{\frac{|x|^3}{a}-\left[\frac{x}{a}\right]\right\}$,

where [t] denotes the greatest integer less than or equal to t, is equal to :

Options :

9561772583. 121

9561772584. 144

9561772585. 169

9561772586. 225

Question Number : 9 Question Id : 9561771224 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $f(x)=\begin{cases}x-1, x \text{ सम है,}\\ 2x, \quad x \text{ विषम है,}\end{cases}$ $x \in \mathbb{N}$ हैं। यदि किसी $a \in \mathbb{N}$ के लिए $f(f(f(a)))=21$ है, तो $\lim_{x\to a^-}\left\{\frac{|x|^3}{a}-\left[\frac{x}{a}\right]\right\}$,

जहाँ [t] महत्तम पूर्णांक $\leq t$ है, बराबर है :

Options :

9561772583. 121

9561772584. 144

9561772585. 169

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9561772586. 225

Question Number : 10 Question Id : 9561771225 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $\int_0^{\frac{\pi}{3}} \cos^4 x \, dx = a\pi + b\sqrt{3}$, where a and b are rational numbers, then $9a + 8b$ is equal to :

Options :

9561772587. 3

9561772588. 2

9561772589. $\frac{3}{2}$

9561772590. 1

Question Number : 10 Question Id : 9561771225 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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यदि $\int_{0}^{\frac{\pi}{3}} \cos^4 x \, dx = a\pi + b\sqrt{3}$ है, जहाँ a तथा b परिमेय संख्याएँ हैं, तो $9a + 8b$ बराबर है :

Options :

9561772587. 3

9561772588. 2

9561772589. $\frac{3}{2}$

9561772590. 1

Question Number : 11 Question Id : 9561771226 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The value of $\int_0^1 (2x^3 - 3x^2 - x + 1)^{\frac{1}{3}} dx$ is equal to :

Options :

9561772591. -1

9561772592. 0

9561772593. 1

9561772594. 2

Question Number : 11 Question Id : 9561771226 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$\int_0^1 (2x^3 - 3x^2 - x + 1)^{\frac{1}{3}} dx$ का मान बराबर है :

Options :

9561772591. -1

9561772592. 0

9561772593. 1

9561772594. 2

Question Number : 12 Question Id : 9561771227 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let α be a non-zero real number. Suppose $f : \mathbb{R} \to \mathbb{R}$ is a differentiable function such that $f(0) = 2$ and $\lim_{x \to -\infty} f(x) = 1$. If $f'(x) = \alpha f(x) + 3$, for all $x \in \mathbb{R}$, then $f(-\log_e 2)$ is equal to ________.

Options :

9561772595. 3

9561772596. 5

9561772597. 7

9561772598. 9

Question Number : 12 Question Id : 9561771227 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना α एक शून्येत्तर वास्तविक संख्या है। माना एक अवकलनीय फलन $f: \mathbb{R} \rightarrow \mathbb{R}$ के लिए $f(0)=2$ तथा $\lim_{x \to -\infty} f(x) = 1$ हैं। यदि $f'(x)=\alpha f(x)+3, \forall x \in \mathbb{R}$ है, तो $f(-\log_e 2)$ बराबर है ______ ।

Options :

9561772595. 3

9561772596. 5

9561772597. 7

9561772598. 9

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Question Number : 13 Question Id : 9561771228 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let P be a point on the ellipse $\frac{x^2}{9}+\frac{y^2}{4}=1$. Let the line passing through P and parallel to y-axis meet the circle $x^2+y^2=9$ at point Q such that P and Q are on the same side of the x-axis. Then, the eccentricity of the locus of the point R on PQ such that PR : RQ = 4 : 3 as P moves on the ellipse, is :

Options :

9561772599. $\frac{\sqrt{13}}{7}$

9561772600. $\frac{11}{19}$

9561772601. $\frac{\sqrt{139}}{23}$

9561772602. $\frac{13}{21}$

Question Number : 13 Question Id : 9561771228 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना दीर्घवृत्त $\frac{x^2}{9}+\frac{y^2}{4}=1$ पर एक बिंदु P है। माना P से होकर जाने वाली तथा y-अक्ष के समांतर रेखा, वृत्त $x^2+y^2=9$ को बिंदु Q पर मिलती है तथा P और Q, x-अक्ष के एक ही ओर हैं। तो बिंदु P के दीर्घवृत्त पर चलने पर PQ पर एक बिंदु R, जिसके लिए PR : RQ = 4 : 3 है, के बिंदुपथ की उत्केन्द्रता है :

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Options :

9561772599. $\frac{\sqrt{13}}{7}$

9561772600. $\frac{11}{19}$

9561772601. $\frac{\sqrt{139}}{23}$

9561772602. $\frac{13}{21}$

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Question Number : 14 Question Id : 9561771229 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let the locus of the midpoints of the chords of the circle $x^2+(y-1)^2=1$ drawn from the origin intersect the line $x+y=1$ at P and Q. Then, the length of PQ is :

Options :

9561772603. 1

9561772604. $\sqrt{2}$

9561772605. $\frac{1}{\sqrt{2}}$

9561772606. $\frac{1}{2}$

Question Number : 14 Question Id : 9561771229 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना मूल बिंदु से वृत्त $x^2+(y-1)^2=1$ पर खींची गई जीवाओं के मध्य बिंदु का बिंदुपथ रेखा $x+y=1$ को बिंदुओं P तथा Q पर काटता है। तो PQ की लंबाई है।

Options :

9561772603. 1

9561772604. $\sqrt{2}$

9561772605. $\frac{1}{\sqrt{2}}$

9561772606. $\frac{1}{2}$

Question Number : 15 Question Id : 9561771230 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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If the mirror image of the point P(3, 4, 9) in the line $\frac{x-1}{3}=\frac{y+1}{2}=\frac{z-2}{1}$ is (α, β, γ), then 14 $(\alpha+\beta+\gamma)$ is :

Options :

9561772607. 102

9561772608. 108

9561772609. 132

9561772610. 138

Question Number : 15 Question Id : 9561771230 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि बिंदु P(3, 4, 9) का रेखा $\frac{x-1}{3}=\frac{y+1}{2}=\frac{z-2}{1}$ में दर्पण प्रतिबिंब (α, β, γ) है, तो 14 $(\alpha+\beta+\gamma)$ बराबर है :

Options :

9561772607. 102

9561772608. 108

9561772609. 132

9561772610.

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Question Number : 16 Question Id : 9561771231 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let P and Q be the points on the line $\frac{x+3}{8}=\frac{y-4}{2}=\frac{z+1}{2}$ which are at a distance of 6 units from the point R (1, 2, 3). If the centroid of the triangle PQR is (α, β, γ), then $\alpha^2+\beta^2+\gamma^2$ is :

Options :

9561772611. 18

9561772612. 24

9561772613. 26

9561772614. 36

Question Number : 16 Question Id : 9561771231 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना रेखा $\frac{x+3}{8}=\frac{y-4}{2}=\frac{z+1}{2}$ पर बिंदु R (1, 2, 3) से 6 इकाई दूरी पर दो बिंदु P तथा Q हैं। यदि त्रिभुज PQR का केन्द्रक (α, β, γ) है, तो $\alpha^2+\beta^2+\gamma^2$ बराबर है :

Options :

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9561772611. 18

9561772612. 24

9561772613. 26

9561772614. 36

Question Number : 17 Question Id : 9561771232 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider a ΔABC where $A(1, 3, 2)$, $B(-2, 8, 0)$ and $C(3, 6, 7)$. If the angle bisector of $\angle BAC$ meets the line BC at D, then the length of the projection of the vector $\vec{AD}$ on the vector $\vec{AC}$ is :

Options :

9561772615. $\sqrt{19}$

9561772616. $\dfrac{37}{2\sqrt{38}}$

9561772617. $\dfrac{\sqrt{38}}{2}$

9561772618. $\dfrac{39}{2\sqrt{38}}$

Question Number : 17 Question Id : 9561771232 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक ΔABC, जहाँ $A(1, 3, 2)$, $B(-2, 8, 0)$ तथा $C(3, 6, 7)$ हैं, का विचार कीजिए। यदि कोण BAC की समद्विभाजक रेखा, BC को D पर मिलती है, तो सदिश $\vec{AD}$ के सदिश $\vec{AC}$ पर प्रेक्षप की लंबाई है :

Options :

9561772615. $\sqrt{19}$

9561772616. $\frac{37}{2\sqrt{38}}$

9561772617. $\frac{\sqrt{38}}{2}$

9561772618. $\frac{39}{2\sqrt{38}}$

Question Number : 18 Question Id : 9561771233 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Let Ajay will not appear in JEE exam with probability $p = \frac{2}{7}$, while both Ajay and Vijay will appear in the exam with probability $q = \frac{1}{5}$. Then the probability, that Ajay will appear in the exam and Vijay will not appear is :

Options :

9561772619. $\frac{3}{35}$

9561772620. $\frac{24}{35}$

9561772621. $\frac{18}{35}$

9561772622. $\frac{9}{35}$

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Question Number : 18 Question Id : 9561771233 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना अजय के JEE परीक्षा न देने की प्रायिकता $p = \frac{2}{7}$ है, जबकि अजय तथा विजय दोनों के इस परीक्षा को देने की प्रायिकता $q = \frac{1}{5}$ है। तो अजय के परीक्षा देने तथा विजय के परीक्षा न देने की प्रायिकता है :

Options :

9561772619. $\frac{3}{35}$

9561772620. $\frac{24}{35}$

9561772621. $\frac{18}{35}$

9561772622. $\frac{9}{35}$

Question Number : 19 Question Id : 9561771234 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider 10 observations $x_1, x_2, \ldots, x_{10}$ such that $\sum_{i=1}^{10} (x_i - \alpha) = 2$ and $\sum_{i=1}^{10} (x_i - \beta)^2 = 40$, where α, β are positive integers. Let the mean and the variance of the observations be $\frac{6}{5}$ and $\frac{84}{25}$ respectively.

Then $\frac{\beta}{\alpha}$ is equal to :

Options :

9561772623. 1

9561772624. 2

9561772625. $\frac{3}{2}$

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9561772626. $\frac{5}{2}$

Question Number : 19 Question Id : 9561771234 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

10 प्रेक्षणों $x_1, x_2, \ldots, x_{10}$, के लिए $\sum_{i=1}^{10} (x_i - \alpha) = 2$ तथा $\sum_{i=1}^{10} (x_i - \beta)^2 = 40$ हैं, जहाँ α तथा β धनात्मक पूर्णांक हैं।

माना इन प्रेक्षणों के माध्य तथा प्रसरण क्रमशः $\frac{6}{5}$ तथा $\frac{84}{25}$ हैं। तो $\frac{\beta}{\alpha}$ बराबर है :

Options :

9561772623. 1

9561772624. 2

9561772625. $\frac{3}{2}$

9561772626. $\frac{5}{2}$

Question Number : 20 Question Id : 9561771235 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of solutions of the equation $4 \sin^2 x - 4 \cos^3 x + 9 - 4 \cos x = 0$; $x \in [-2\pi, 2\pi]$ is :

Options :

9561772627. 0

9561772628. 1

9561772629. 2

9561772630. 3

Question Number : 20 Question Id : 9561771235 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

समीकरण $4\sin^2 x - 4\cos^3 x + 9 - 4\cos x = 0;\ x \in [-2\pi, 2\pi]$ के हलों की संख्या है :

Options :

9561772627. 0

9561772628. 1

9561772629. 2

9561772630. 3

Mathematics Section B

Section Id :	95617775
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	95617778
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 21 Question Id : 9561771236 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let $A = I_2 - 2\,MM^T$, where M is a real matrix of order 2×1 such that the relation $M^T M = I_1$ holds. If λ is a real number such that the relation $AX = \lambda X$ holds for some non-zero real matrix X of order 2×1, then the sum of squares of all possible values of λ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 21 Question Id : 9561771236 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना कोटि 2×1 के एक वास्तविक आव्यूह M के लिए $M^T M = I_1$ है तथा $A = I_2 - 2MM^T$ है। यदि λ एक वास्तविक संख्या है तथा कोटि 2×1 के किसी शून्येत्तर वास्तविक आव्यूह X के लिए $AX=\lambda X$ है, तो λ के सभी संभव मानों के वर्गों का योग है ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 22 Question Id : 9561771237 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The lines $L_1, L_2, \ldots, L_{20}$ are distinct. For $n=1, 2, 3, \ldots, 10$ all the lines L_{2n-1} are parallel to each other and all the lines L_{2n} pass through a given point P. The maximum number of points of intersection of pairs of lines from the set $\{L_1, L_2, \ldots, L_{20}\}$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 22 Question Id : 9561771237 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

रेखाएँ $L_1, L_2, \ldots, L_{20}$ भिन्न हैं। $n=1, 2, 3, \ldots, 10$ के लिए सभी रेखाएँ L_{2n-1} एक दूसरे के समांतर हैं तथा सभी रेखाएँ L_{2n} एक दिए गए बिंदु P से होकर जाती है। तो समुच्चय $\{L_1, L_2, \ldots, L_{20}\}$ के रेखा युग्मों के प्रतिच्छेदन बिंदुओं की अधिकतम संख्या है ________।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 23 Question Id : 9561771238 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If three successive terms of a G.P. with common ratio r ($r > 1$) are the lengths of the sides of a triangle and [r] denotes the greatest integer less than or equal to r, then $3[r]+[-r]$ is equal to __________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 23 Question Id : 9561771238 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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यदि सार्व अनुपात r (r > 1) की एक G.P. के तीन क्रमागत पद एक त्रिभुज की भुजाओं की लंबाइयाँ हैं तथा [r] महत्तम पूर्णांक $\leq r$ है, तो $3[r]+[-r]$ बराबर है ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 24 Question Id : 9561771239 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let $f:(0,\infty)\rightarrow R$ and $F(x)=\int_0^x t\,f(t)\,dt$. If $F(x^2)=x^4+x^5$, then $\sum_{r=1}^{12} f(r^2)$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 24 Question Id : 9561771239 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $f:(0,\infty)\rightarrow R$ तथा $F(x)=\int_0^x t\,f(t)\,dt$ है। यदि $F(x^2)=x^4+x^5$ है, तो $\sum_{r=1}^{12} f(r^2)$ बराबर है ________ ।

Response Type : Numeric

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Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 25 Question Id : 9561771240 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $y = \frac{(\sqrt{x}+1)(x^2-\sqrt{x})}{x\sqrt{x}+x+\sqrt{x}} + \frac{1}{15}(3\cos^2 x - 5)\cos^3 x$, then $96\,y'\left(\frac{\pi}{6}\right)$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 25 Question Id : 9561771240 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $y = \frac{(\sqrt{x}+1)(x^2-\sqrt{x})}{x\sqrt{x}+x+\sqrt{x}} + \frac{1}{15}(3\cos^2 x - 5)\cos^3 x$ है, तो $96\,y'\left(\frac{\pi}{6}\right)$ बराबर है ________।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 26 Question Id : 9561771241 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The sum of squares of all possible values of k, for which area of the region bounded by the parabolas $2y^2 = kx$ and $ky^2 = 2(y - x)$ is maximum, is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 26 Question Id : 9561771241 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

k के सभी संभव मानों, जिनके लिए परवलयों $2y^2 = kx$ तथा $ky^2 = 2(y - x)$ से घिरे क्षेत्र का क्षेत्रफल अधिकतम है, के वर्गों का योग है ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 27 Question Id : 9561771242 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $\frac{dx}{dy} = \frac{1 + x - y^2}{y}$, $x(1) = 1$, then $5x(2)$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 27 Question Id : 9561771242 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $\frac{dx}{dy} = \frac{1 + x - y^2}{y}$, $x(1) = 1$ है, तो $5x(2)$ बराबर है ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 28 Question Id : 9561771243 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Three points O(0, 0), P(a, a^2), Q(−b, b^2), a > 0, b > 0, are on the parabola $y = x^2$. Let S_1 be the area of the region bounded by the line PQ and the parabola, and S_2 be the area of the triangle OPQ. If the minimum value of $\frac{S_1}{S_2}$ is $\frac{m}{n}$, gcd(m, n) = 1, then m + n is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 28 Question Id : 9561771243 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

परवलय $y = x^2$ पर तीन बिंदु O(0, 0), P(a, a^2), Q(−b, b^2), a > 0, b > 0 हैं। माना रेखा PQ तथा परवलय से घिरे क्षेत्र का क्षेत्रफल S_1 है तथा त्रिभुज OPQ का क्षेत्रफल S_2 है। यदि $\frac{S_1}{S_2}$ का न्यूनतम मान $\frac{m}{n}$, gcd(m, n) = 1 है, तो m + n बराबर है ________।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 29 Question Id : 9561771244 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Let ABC be an isosceles triangle in which A is at $(-1, 0)$, $\angle A = \frac{2\pi}{3}$, AB = AC and B is on the positve x-axis. If $BC = 4\sqrt{3}$ and the line BC intersects the line $y = x + 3$ at (α, β), then $\frac{\beta^4}{\alpha^2}$ is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 29 Question Id : 9561771244 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना एक समद्विबाहु त्रिभुज ABC में A, बिंदु $(-1, 0)$ है, $\angle A = \frac{2\pi}{3}$ है, AB = AC है तथा B, धनात्मक x-अक्ष पर है। यदि $BC = 4\sqrt{3}$ तथा रेखा BC, रेखा $y = x + 3$ को (α, β) पर काटती है, तो $\frac{\beta^4}{\alpha^2}$ बराबर है ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 30 Question Id : 9561771245 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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Correct Marks : 4 Wrong Marks : 1

Let $\vec{a} = \hat{i} + \hat{j} + \hat{k}$, $\vec{b} = -\hat{i} - 8\hat{j} + 2\hat{k}$ and $\vec{c} = 4\hat{i} + c_2\hat{j} + c_3\hat{k}$ be three vectors such that $\vec{b} \times \vec{a} = \vec{c} \times \vec{a}$. If the angle between the vector $\vec{c}$ and the vector $3\hat{i} + 4\hat{j} + \hat{k}$ is θ, then the greatest integer less than or equal to $\tan^2\theta$ is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 30 Question Id : 9561771245 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना तीन सदिशों $\vec{a} = \hat{i} + \hat{j} + \hat{k}$, $\vec{b} = -\hat{i} - 8\hat{j} + 2\hat{k}$ तथा $\vec{c} = 4\hat{i} + c_2\hat{j} + c_3\hat{k}$ के लिए $\vec{b} \times \vec{a} = \vec{c} \times \vec{a}$ हैं। यदि सदिश $\vec{c}$ तथा सदिश $3\hat{i} + 4\hat{j} + \hat{k}$ के बीच का कोण θ है, तो महत्तम पूर्णांक $\leq \tan^2\theta$ बराबर है ________।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Physics Section A

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Section Id :	95617776
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	95617779
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 31 Question Id : 9561771246 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List - I with List - II.

	List - I (Number)		List - II (Significant figure)
(A)	1001	(I)	3
(B)	010.1	(II)	4
(C)	100.100	(III)	5
(D)	0.0010010	(IV)	6

Choose the correct answer from the options given below :

Options :

9561772641. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

9561772642.

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

9561772643. (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

9561772644. (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

Question Number : 31 Question Id : 9561771246 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची – I का सूची – II से मिलान कीजिए।

	सूची – I (संख्या)		सूची – II (सार्थक अंक)
(A)	1001	(I)	3
(B)	010.1	(II)	4
(C)	100.100	(III)	5
(D)	0.0010010	(IV)	6

नीचे दिये विकल्पों से **सही** उत्तर चुनिए :

Options :

9561772641. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

9561772642. (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

9561772643. (A)-(III), (B)-(IV), (C)-(II), (D)-(I)

9561772644. (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

Question Number : 32 Question Id : 9561771247 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Train A is moving along two parallel rail tracks towards north with speed 72 km/h and train B is moving towards south with speed 108 km/h. Velocity of train B with respect to A and velocity of ground with respect to B are (in ms^{-1}) :

Options :

9561772645. -50 and 30

9561772646. 50 and -30

9561772647. -50 and -30

9561772648. -30 and 50

Question Number : 32 Question Id : 9561771247 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A रेलगाड़ी 72 किमी/घं की चाल से उत्तर की ओर तथा B रेलगाड़ी 108 किमी/घं की चाल से दो समान्तर रेल पटरियों पर गति कर रही है। A के सापेक्ष रेलगाड़ी B का वेग तथा B के सापेक्ष पृथ्वी का वेग (मी/से में) हैं :

Options :

9561772645.

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-50 और 30

9561772646. 50 और -30

9561772647. -50 और -30

9561772648. -30 और 50

Question Number : 33 Question Id : 9561771248 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A cricket player catches a ball of mass 120 g moving with 25 m/s speed. If the catching process is completed in 0.1 s then the magnitude of force exerted by the ball on the hand of player will be (in SI unit) :

Options :

9561772649. 12

9561772650. 25

9561772651. 30

9561772652. 24

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Question Number : 33 Question Id : 9561771248 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक क्रिकेट खिलाड़ी 25 मी/से की चाल से गतिमान 120 ग्राम द्रव्यमान की एक गेंद को पकड़ता है। यदि गेंद पकड़ने की प्रक्रिया 0.1 से में पूर्ण होती है तब गेंद द्वारा खिलाड़ी के हाथों पर लगाये गये बल का परिमाण (SI मात्रक में) होगा :

Options :

9561772649. 12

9561772650. 25

9561772651. 30

9561772652. 24

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Question Number : 34 Question Id : 9561771249 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A body of mass 4 kg experiences two forces $\vec{F_1} = 5\hat{i} + 8\hat{j} + 7\hat{k}$ and $\vec{F_2} = 3\hat{i} - 4\hat{j} - 3\hat{k}$. The acceleration acting on the body is :

Options :

9561772653. $2\hat{i} + \hat{j} + \hat{k}$

9561772654. $4\hat{i} + 2\hat{j} + 2\hat{k}$

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9561772655. $2\hat{i} + 3\hat{j} + 3\hat{k}$

9561772656. $-2\hat{i} - \hat{j} - \hat{k}$

Question Number : 34 Question Id : 9561771249 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

4 किग्रा द्रव्यमान की एक वस्तु पर दो बल $\vec{F_1} = 5\hat{i} + 8\hat{j} + 7\hat{k}$ तथा $\vec{F_2} = 3\hat{i} - 4\hat{j} - 3\hat{k}$ लग रहे हैं। वस्तु पर आरोपित त्वरण है :

Options :

9561772653. $2\hat{i} + \hat{j} + \hat{k}$

9561772654. $4\hat{i} + 2\hat{j} + 2\hat{k}$

9561772655. $2\hat{i} + 3\hat{j} + 3\hat{k}$

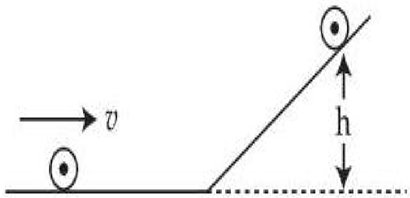
9561772656. $-2\hat{i} - \hat{j} - \hat{k}$

Question Number : 35 Question Id : 9561771250 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A disc of radius R and mass M is rolling horizontally without slipping with speed v. It then moves up an inclined smooth surface as shown in figure. The maximum height that the disc can go up the incline is :



Options :

9561772657. $\frac{v^2}{g}$

9561772658. $\frac{1}{2}\frac{v^2}{g}$

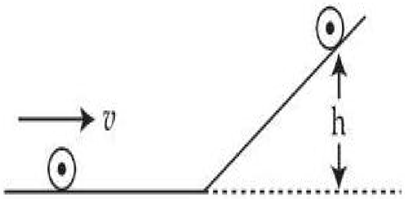
9561772659. $\frac{2}{3}\frac{v^2}{g}$

9561772660. $\frac{3}{4}\frac{v^2}{g}$

Question Number : 35 Question Id : 9561771250 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

R त्रिज्या तथा M द्रव्यमान की एक चकती (डिस्क) v चाल से क्षैतिज दिशा में बिना फिसले लुढ़कती है। इसके बाद यह एक चिकने आनत तल पर ऊपर की ओर गति करती है जैसा कि चित्र में दर्शाया गया है। चकती द्वारा आनत तल पर चढ़ सकने की अधिकतम ऊँचाई है :



Options :

9561772657. $\frac{v^2}{g}$

9561772658. $\frac{1}{2}\frac{v^2}{g}$

9561772659. $\frac{2}{3}\frac{v^2}{g}$

9561772660. $\frac{3}{4}\frac{v^2}{g}$

Question Number : 36 Question Id : 9561771251 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A light planet is revolving around a massive star in a circular orbit of radius R with a period of revolution T. If the force of attraction between planet and star is proportional to $R^{-3/2}$ then choose the correct option :

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Options :

9561772661. $T^2 \propto R^3$

9561772662. $T^2 \propto R^{7/2}$

9561772663. $T^2 \propto R^{5/2}$

9561772664. $T^2 \propto R^{3/2}$

Question Number : 36 Question Id : 9561771251 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक हल्का ग्रह किसी भारी तारे के परितः R त्रिज्या की वृत्तीय कक्षा में घूम रहा है जिसका परिक्रमण काल T है। यदि ग्रह तथा तारे के मध्य लगने वाला बल $R^{-3/2}$ के अनुक्रमानुपाती हो तो सही विकल्प चुनिए :

Options :

9561772661. $T^2 \propto R^3$

9561772662. $T^2 \propto R^{7/2}$

9561772663. $T^2 \propto R^{5/2}$

9561772664. $T^2 \propto R^{3/2}$

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Question Number : 37 Question Id : 9561771252 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A big drop is formed by coalescing 1000 small droplets of water. The surface energy will become :

Options :

9561772665. $\frac{1}{100}$th

9561772666. $\frac{1}{10}$th

9561772667. 10 times

9561772668. 100 times

Question Number : 37 Question Id : 9561771252 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

पानी की 1000 छोटी बूँदे मिलकर एक बड़ी बूँद बनाती हैं। इसकी पृष्ठ ऊर्जा हो जायेगी :

Options :

9561772665. $\frac{1}{100}$ गुना

9561772666. $\frac{1}{10}$ गुना

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9561772667. 10 गुना

9561772668. 100 गुना

Question Number : 38 Question Id : 9561771253 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A diatomic gas ($\gamma = 1.4$) does 200 J of work when it is expanded isobarically. The heat given to the gas in the process is :

Options :

9561772669. 600 J

9561772670. 700 J

9561772671. 800 J

9561772672. 850 J

Question Number : 38 Question Id : 9561771253 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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जब एक द्विपरमाणुक गैस ($\gamma = 1.4$) का समदाबी प्रसार किया जाता है तो इसके द्वारा कृत कार्य 200 J है। इस प्रक्रम में गैस को दी गई ऊष्मा है :

Options :

9561772669. 600 J

9561772670. 700 J

9561772671. 800 J

9561772672. 850 J

Question Number : 39 Question Id : 9561771254 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the root mean square velocity of hydrogen molecule at a given temperature and pressure is 2 km/s, the root mean square velocity of oxygen at the same condition in km/s is :

Options :

9561772673. 0.5

9561772674. 1.0

9561772675. 1.5

9561772676. 2.0

Question Number : 39 Question Id : 9561771254 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि एक दिये गये तापमान तथा दाब पर हाइड्रोजन अणु का वर्ग मध्य वेग 2 किमी/से हो तो समान परिस्थिति में आक्सीजन का वर्ग माध्य मूल वेग (किमी/से में) है :

Options :

9561772673. 0.5

9561772674. 1.0

9561772675. 1.5

9561772676. 2.0

Question Number : 40 Question Id : 9561771255 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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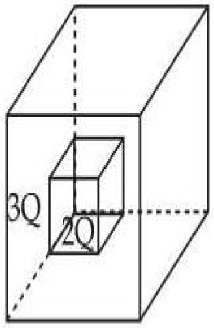
C_1 and C_2 are two hollow concentric cubes enclosing charges 2Q and 3Q respectively as shown in figure. The ratio of electric flux passing through C_1 and C_2 is :



Options :

9561772677. 2 : 3

9561772678. 2 : 5

9561772679. 3 : 2

9561772680. 5 : 2

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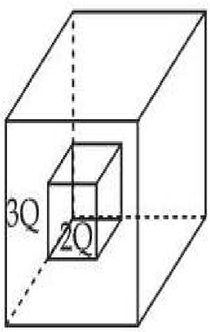
Question Number : 40 Question Id : 9561771255 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

प्रदर्शित चित्र में C_1 व C_2 दो खोखले सकेन्द्रीय घन है जिनके अन्दर क्रमश: 2Q व 3Q आवेश स्थित हैं। C_1 व C_2 से गुजरने वाले वैद्युत फलक्स का अनुपात है :



Options :

9561772677. $2 : 3$

9561772678. $2 : 5$

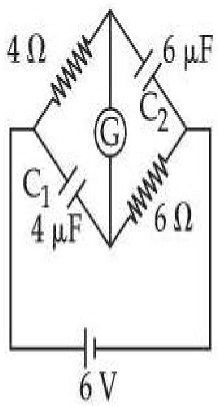
9561772679. $3 : 2$

9561772680. $5 : 2$

Question Number : 41 Question Id : 9561771256 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A galvanometer (G) of 2 Ω resistance is connected in the given circuit. The ratio of charge stored in C_1 and C_2 is :



Options :

9561772681. $\frac{2}{3}$

9561772682. $\frac{1}{2}$

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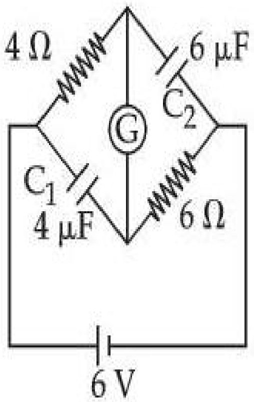
9561772683. $\frac{3}{2}$

9561772684. 1

Question Number : 41 Question Id : 9561771256 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिये गये परिपथ में 2 Ω का एक धारामापी (G) जुड़ा है। C_1 व C_2 में संचित आवेशों का अनुपात है :



Options :

9561772681. $\frac{2}{3}$

9561772682. $\frac{1}{2}$

9561772683. $\frac{3}{2}$

9561772684. 1

Question Number : 42 Question Id : 9561771257 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In an ammeter, 5% of the main current passes through the galvanometer. If resistance of the galvanometer is G, the resistance of ammeter will be :

Options :

9561772685. $\frac{G}{199}$

9561772686. $\frac{G}{200}$

9561772687. 200 G

9561772688. 199 G

Question Number : 42 Question Id : 9561771257 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक अमीटर में, मुख्य धारा का 5% भाग धारामापी से गुजरता है। यदि धारामापी का प्रतिरोध G हो तो अमीटर का प्रतिरोध होगा :

Options :

9561772685.

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$\frac{G}{199}$

9561772686. $\frac{G}{200}$

9561772687. 200 G

9561772688. 199 G

Question Number : 43 Question Id : 9561771258 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A transformer has an efficiency of 80% and works at 10 V and 4 kW. If the secondary voltage is 240 V, then the current in the secondary coil is :

Options :

9561772689. 13.33 A

9561772690. 15.1 A

9561772691. 1.33 A

9561772692. 1.59 A

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Question Number : 43 Question Id : 9561771258 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक ट्रान्सफार्मर की दक्षता 80% है जो 10 V तथा 4 kW पर कार्य करता है। यदि द्वितीयक कुंडली का वोल्टेज 240 V है तो द्वितीयक कुंडली में धारा है :

Options :

9561772689. 13.33 A

9561772690. 15.1 A

9561772691. 1.33 A

9561772692. 1.59 A

Question Number : 44 Question Id : 9561771259 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If frequency of electromagnetic wave is 60 MHz and it travels in air along z direction then the corresponding electric and magnetic field vectors will be mutually perpendicular to each other and the wavelength of the wave (in m) is :

Options :

9561772693. 10

9561772694. 5

9561772695. 2.5

9561772696. 2

Question Number : 44 Question Id : 9561771259 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि किसी समतल विद्युतचुंबकीय तरंग की आवृत्ति 60 MHz है तथा यह वायु में z अक्ष की धनात्मक दिशा के अनुदिश संचरित होती है तब इसके संगत वैद्युत तथा चुम्बकीय क्षेत्र एक दूसरे के परस्पर लम्बवत हैं। तरंग की तरगं दैर्ध्य (मीटर में) है :

Options :

9561772693. 10

9561772694. 5

9561772695. 2.5

9561772696. 2

Question Number : 45 Question Id : 9561771260 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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A microwave of wavelength 2.0 cm falls normally on a slit of width 4.0 cm. The angular spread of the central maxima of the diffraction pattern obtained on a screen 1.5 m away from the slit, will be :

Options :

9561772697. $30°$

9561772698. $60°$

9561772699. $15°$

9561772700. $45°$

Question Number : 45 Question Id : 9561771260 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

2.0 से.मी. तरंगदैर्ध्य की एक सूक्ष्म तरंग 4.0 से.मी. चौड़ाई की एक झिर्री पर आपतित होती है। झिर्री से 1.5 मी की दूरी पर एक पर्दे पर विवर्तन पैटर्न के केन्द्रीय उच्चिष्ट का कोणीय विस्तार होगा :

Options :

9561772697. $30°$

9561772698. $60°$

9561772699. $15°$

9561772700. $45°$

Question Number : 46 Question Id : 9561771261 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Monochromatic light of frequency 6×10^{14} Hz is produced by a laser. The power emitted is 2×10^{-3} W. How many photons per second on an average, are emitted by the source ?
(Given $h = 6.63 \times 10^{-34}$ Js)

Options :

9561772701. 5×10^{15}

9561772702. 7×10^{16}

9561772703. 6×10^{15}

9561772704. 9×10^{18}

Question Number : 46 Question Id : 9561771261 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

किसी लेज़र द्वारा 6×10^{14} Hz आवृत्ति का एकवर्णी प्रकाश उत्पन्न किया गया है। उत्सर्जित शक्ति 2×10^{-3} W है। स्रोत द्वारा औसतन उत्सर्जित प्रति सेकंड फोटानों की संख्या कितनी होगी :
(दिया है : $h = 6.63 \times 10^{-34}$ Js)

Options :

9561772701. 5×10^{15}

9561772702. 7×10^{16}

9561772703. 6×10^{15}

9561772704. 9×10^{18}

Question Number : 47 Question Id : 9561771262 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

From the statements given below :

(A) The angular momentum of an electron in n^{th} orbit is an integral multiple of $\hbar$.

(B) Nuclear forces do not obey inverse square law.

(C) Nuclear forces are spin dependent.

(D) Nuclear forces are central and charge independent.

(E) Stability of nucleus is inversely proportional to the value of packing fraction.

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

Options :

9561772705. (A), (B), (C), (D) only

9561772706. (A), (C), (D), (E) only

9561772707. (B), (C), (D), (E) only

9561772708. (A), (B), (C), (E) only

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Question Number : 47 Question Id : 9561771262 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिये गये कथनों से :

(A) n वीं कक्षा में किसी इलैक्ट्रान का कोणीय संवेग $\hbar$ का पूर्ण गुणज होता है।

(B) नाभिकीय बल व्युत्क्रम वर्ग नियम का पालन नहीं करते हैं।

(C) नाभिकीय बल चक्रण आधारित होते है।

(D) नाभिकीय बल केन्द्रीय होते है तथा आवेश पर निर्भर नहीं करते है।

(E) नाभिकों का स्थाईत्व संकुलन अंश के मान के व्युत्क्रमानुपाती होता है।

नीचे दिये गये विकल्पों से **सही** उत्तर चुनिए :

Options :

9561772705. केवल (A), (B), (C), (D)

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9561772706. केवल (A), (C), (D), (E)

9561772707. केवल (B), (C), (D), (E)

9561772708. केवल (A), (B), (C), (E)

Question Number : 48 Question Id : 9561771263 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Conductivity of a photodiode starts changing only if the wavelength of incident light is less than 660 nm. The band gap of photodiode is found to be $\left(\frac{X}{8}\right)$eV. The value of X is :

(Given, $h=6.6\times10^{-34}$ Js, $e=1.6\times10^{-19}$ C)

Options :

9561772709. 11

9561772710. 13

9561772711. 15

9561772712. 21

Question Number : 48 Question Id : 9561771263 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

केवल एक फोटो डायोड की चालकता बदलने लगती है यदि अपतित प्रकाश की तरंगदैर्ध्य 660 nm से कम होती है। फोटो डायोड का बैण्ड गैप $\left(\frac{X}{8}\right)$eV प्राप्त होता है। X का मान है :

(दिया है, $h=6.6\times10^{-34}$ Js, $e=1.6\times10^{-19}$ C)

Options :

9561772709. 11

9561772710. 13

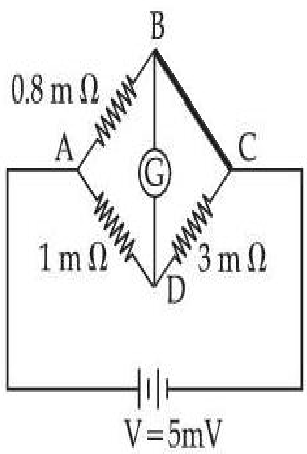
9561772711. 15

9561772712. 21

Question Number : 49 Question Id : 9561771264 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

To measure the temperature coefficient of resistivity α of a semiconductor, an electrical arrangement shown in the figure is prepared. The arm BC is made up of the semiconductor. The experiment is being conducted at 25°C and resistance of the semiconductor arm is 3 mΩ. Arm BC is cooled at a constant rate of 2°C/s. If the galvanometer G shows no deflection after 10 s, then α is :



Options :

9561772713. $-1\times10^{-2}\ ^{\circ}C^{-1}$

9561772714. $-1.5\times10^{-2}\ ^{\circ}C^{-1}$

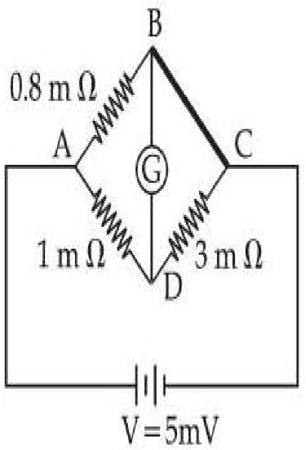
9561772715. $-2\times10^{-2}\ ^{\circ}C^{-1}$

9561772716. $-2.5\times10^{-2}\ ^{\circ}C^{-1}$

Question Number : 49 Question Id : 9561771264 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक अद्धचालक का प्रतिरोध ताप गुणांक ज्ञात करने के लिए, चित्र अनुसार एक परिपथ तैयार किया गया है। BC भुजा को अर्द्धचालक द्वारा तैयार किया गया है। प्रयोग 25°C पर किया गया है तथा अर्द्धचालक भुजा का प्रतिरोध 3 mΩ प्राप्त होता है। BC भुजा को 2°C/s. की एक नियत दर से ठंडा किया गया हैं। यदि 10 से बाद धारामापी G शून्य विक्षेप प्रदान करता है तो α का मान है :



Options :

9561772713. $-1\times10^{-2}\,°C^{-1}$

9561772714. $-1.5\times10^{-2}\,°C^{-1}$

9561772715. $-2\times10^{-2}\,°C^{-1}$

9561772716. $-2.5\times10^{-2}\,°C^{-1}$

Question Number : 50 Question Id : 9561771265 Question Type : MCQ Option Shuffling : Yes Is

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Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a metre-bridge when a resistance in the left gap is 2 Ω and unknown resistance in the right gap, the balance length is found to be 40 cm. On shunting the unknown resistance with 2 Ω, the balance length changes by :

Options :

9561772717. 62.5 cm

9561772718. 22.5 cm

9561772719. 65 cm

9561772720. 20 cm

Question Number : 50 Question Id : 9561771265 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक मीटर सेतु में जब बाँये अन्तराल में प्रतिरोध 2 Ω तथा दाहिने अन्तराल में एक अज्ञात प्रतिरोध जुड़ा है तब सन्तुलित लम्बाई 40 सेमी है। अज्ञात प्रतिरोध को 2 Ω से शंट करने पर सन्तुलित लम्बाई होगी :

Options :

9561772717. 62.5 सेमी

9561772718. 22.5 सेमी

9561772719. 65 सेमी

9561772720. 20 सेमी

Physics Section B

Section Id :	95617777
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	95617780
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 51 Question Id : 9561771266 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A particle initially at rest starts moving from reference point $x = 0$ along x-axis, with velocity v that varies as $v = 4\sqrt{x}$ m/s. The acceleration of the particle is ________ ms^{-2}.

Response Type : Numeric

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Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 51 Question Id : 9561771266 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

विरामावस्था में स्थित एक कण संदर्भ बिन्दु $x=0$ से x-अक्ष के अनुदिश v वेग गति प्रारम्भ करता है जिसका वेग निम्न प्रकार परिवर्तित होता है; $v=4\sqrt{x}$ मी/से। कण का त्वरण ________ मी/से^{2} है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 52 Question Id : 9561771267 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A uniform rod AB of mass 2 kg and length 30 cm at rest on a smooth horizontal surface. An impulse of force 0.2 Ns is applied to end B. The time taken by the rod to turn through at right angles will be $\frac{\pi}{x}$ s, where $x=$________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 52 Question Id : 9561771267 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

2 किग्रा द्रव्यमान तथा 30 सेमी लम्बाई की एक एकसमान छड़ AB एक चिकने क्षैतिज तल पर विराम में स्थित है।

0.2 Ns बल का आवेग B सिरे आरोपित होता है। छड़ को समकोण तक घूमने में लगा समय $\frac{\pi}{x}$ से है जहाँ $x =$ ________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 53 Question Id : 9561771268 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

One end of a metal wire is fixed to a ceiling and a load of 2 kg hangs from the other end. A similar wire is attached to the bottom of the load and another load of 1 kg hangs from this lower wire. Then the ratio of longitudinal strain of upper wire to that of the lower wire will be ________.

[Area of cross section of wire $= 0.005\ cm^2$, $Y = 2 \times 10^{11}\ Nm^{-2}$ and $g = 10\ ms^{-2}$]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 53 Question Id : 9561771268 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक धातु के तार के एक सिरे को छत से बाँधा गया है। तथा इसके दूसरे सिरे पर 2 कि.ग्रा. का एक भार लटका है। समान प्रकार के एक तार को भार की तली से बाँधा गया है तथा इसके नीचे 1 किग्रा का भार बाँधा है। उपरी तथा निचले तार की अनुदैर्ध्य विकृतियों का अनुपात ________ होगा।

(तार का अनुप्रस्थ परिच्छेद क्षेत्रफल$=0.005$ सेमी^{2} $\gamma=2\times10^{11}$ Nm^{-2} तथा $g=10$ मी/से^{2})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 54 Question Id : 9561771269 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A mass m is suspended from a spring of negligible mass and the system oscillates with a frequency f_1. The frequency of oscillations if a mass 9 m is suspended from the same spring is f_2. The value of $\frac{f_1}{f_2}$ is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 54 Question Id : 9561771269 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक m द्रव्यमान को नगण्य द्रव्यमान के स्प्रिंग से लटका है तथा निकाय f_1 आवृत्ति से दोलन करता है। यदि समान स्प्रिंग से 9 m द्रव्यमान लटकाने पर दोलन की आवृत्ति f_2 है। $\frac{f_1}{f_2}$ का मान ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 55 Question Id : 9561771270 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Suppose a uniformly charged wall provides a uniform electric field of 2×10^4 N/C normally. A charged particle of mass 2 g being suspended through a silk thread of length 20 cm and remain stayed at a distance of 10 cm from the wall. Then the charge on the particle will be $\frac{1}{\sqrt{x}}$ μC where $x=$________. [use $g=10$ m/s^2]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

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Possible Answers :

1

Question Number : 55 Question Id : 9561771270 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक समान आवेशित दीवार 2×10^4 N/C का लम्बवत एक समान वैद्युत क्षेत्र प्रदान करता है। 2 ग्राम द्रव्यमान का एक आवेशित कण 20 सेमी लम्बे एक सिल्क के धागे से लटका है तथा यह दीवार से 10 सेमी की दूरी पर ठहरा है। कण पर आवेश $\frac{1}{\sqrt{x}}$ μC होगा जहाँ $x =$ ________ । (दिया है $g = 10$ मी/से^{2})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

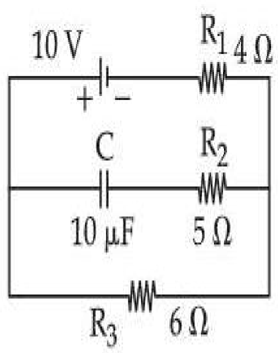
1

Question Number : 56 Question Id : 9561771271 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In an electrical circuit drawn below the amount of charge stored in the capacitor is ________ μC.



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

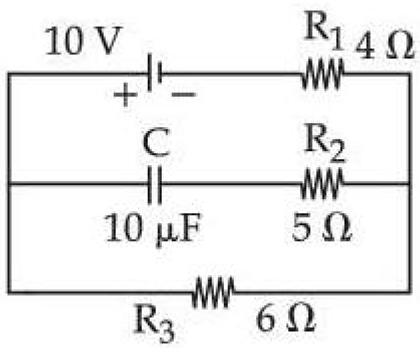
1

Question Number : 56 Question Id : 9561771271 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिये गये परिपथ में एक संधारित्र में संचित आवेश ________ μC है।



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 57 Question Id : 9561771272 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A moving coil galvanometer has 100 turns and each turn has an area of 2.0 cm^2. The magnetic field produced by the magnet is 0.01 T and the deflection in the coil is 0.05 radian when a current of 10 mA is passed through it. The torsional constant of the suspension wire is $x \times 10^{-5}$ N-m/rad. The value of x is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 57 Question Id : 9561771272 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक चल कुंडली धारामापी में 100 फेरे है तथा प्रत्येक फेरे का क्षेत्रफल 2.0 सेमी^{2} है। चुम्बक द्वारा उत्पन्न चुंबकीय क्षेत्र 0.01 T है तथा कुंडली में उत्पन्न विक्षेप 0.05 रेडियन है जब इसमें गुजरने वाली धारा 10 mA है। निलंबन तार का मरोड़ स्थिरांक is $x \times 10^{-5}$ Nm/rad है। x का मान ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 58 Question Id : 9561771273 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A coil of 200 turns and area 0.20 m^2 is rotated at half a revolution per second and is placed in uniform magnetic field of 0.01 T perpendicular to axis of rotation of the coil. The maximum voltage generated in the coil is $\frac{2\pi}{\beta}$ volt. The value of β is ________.

Response Type : Numeric

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Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 58 Question Id : 9561771273 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

200 फेरों की तथा 0.20 मी^{2} क्षेत्रफल की कुंडली प्रति सेकंड आधा चक्कर घूमती है तथा कुंडली की घूर्णन अक्ष के लम्बवत 0.01 T के एक समान चुंबकीय क्षेत्र में स्थित हैं। कुंडली में उत्पन्न अधिकतम वोल्टेज $\frac{2\pi}{\beta}$ वोल्ट है। β का मान ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 59 Question Id : 9561771274 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In Young's double slit experiment, monochromatic light of wavelength 5000 Å is used. The slits are 1.0 mm apart and screen is placed at 1.0 m away from slits. The distance from the centre of the screen where intensity becomes half of the maximum intensity for the first time is ________ $\times 10^{-6}$ m.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 59 Question Id : 9561771274 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यंग द्विझिर्री प्रयोग में 5000 Å तरंगदैर्ध्य का एकवर्णी प्रकाश उपयोग किया गया है। झिर्रियों के बीच की दूरी 1.0 मिमी तथा झिर्रियों से पर्दे के बीच की दूरी 1.0 मी है। पर्दे के केन्द्र से वह दूरी, जहाँ तीव्रता अधिकतम तीव्रता की आधी हो जाती है, ________ $\times 10^{-6}$ मी है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 60 Question Id : 9561771275 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A particular hydrogen - like ion emits the radiation of frequency 3×10^{15} Hz when it makes transition from n=2 to n=1. The frequency of radiation emitted in transition from n=3 to n=1 is $\frac{x}{9} \times 10^{15}$ Hz, when $x =$ ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

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Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 60 Question Id : 9561771275 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक हाइड्रोजन प्रकार का आयन 3×10^{15} Hz आवृत्ति का विकिरण उत्सर्जित करता है जब यह $n=2$ से $n=1$ में संकरण करता है। $n=3$ से $n=1$ में संकरण में उत्सर्जित विकिरण की आवृत्ति $\frac{x}{9} \times 10^{15}$ Hz है जब $x=$________ ।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Chemistry Section A

Section Id :	95617778
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 95617781

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 61 Question Id : 9561771276 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of radial node/s for 3p orbital is :

Options :

9561772731. 3

9561772732. 4

9561772733. 2

9561772734. 1

Question Number : 61 Question Id : 9561771276 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

3p कक्षक में त्रिज्य नोडों का संख्या है :

Options :

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9561772731. 3

9561772732. 4

9561772733. 2

9561772734. 1

Question Number : 62 Question Id : 9561771277 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement (I) : A π bonding MO has lower electron density above and below the inter-nuclear axis.

Statement (II) : The π^* antibonding MO has a node between the nuclei.

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

Options :

9561772735. Both **Statement I** and **Statement II** are true

9561772736. Both **Statement I** and **Statement II** are false

9561772737. **Statement I** is true but **Statement II** is false

9561772738. **Statement I** is false but **Statement II** is true

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Question Number : 62 Question Id : 9561771277 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं :

कथन (I) : किसी π आबंधी अणु कक्षक में अंतरानाभिक अक्ष के ऊपर और नीचे इलेक्ट्रॉन घनत्व कम होता है।

कथन (II) : π* अनाबंधी अणु कक्षक में नाभिकों के बीच एक नोड होती है।

ऊपर दिए गए कथनों के संदर्भ में, नीचे दिए गए विकल्पों में **सही** उत्तर चुनिए :

Options :

9561772735. **कथन I** और **कथन II** दोनों सत्य हैं।

9561772736. **कथन I** और **कथन II** दोनों असत्य हैं।

9561772737. **कथन I** सत्य है परंतु **कथन II** असत्य है।

9561772738. **कथन I** असत्य है परंतु **कथन II** सत्य है।

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Question Number : 63 Question Id : 9561771278 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Select the compound from the following that will show intramolecular hydrogen bonding.

Options :

9561772739. NH_3

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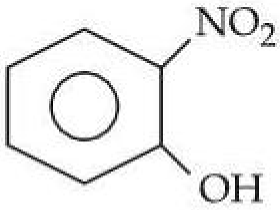
9561772740. C_2H_5OH

9561772741. 

9561772742. H_2O

Question Number : 63 Question Id : 9561771278 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

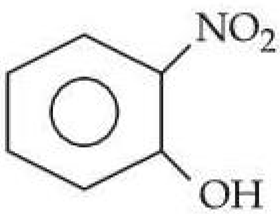
Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से आंतरअणुक हाइड्रोजन आबंधन दर्शाने वाले यौगिक को चुनिए :

Options :

9561772739. NH_3

9561772740. C_2H_5OH

9561772741. 

9561772742. H_2O

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Question Number : 64 Question Id : 9561771279 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Solubility of calcium phosphate (molecular mass, M) in water is W_g per 100 mL at 25 °C. Its solubility product at 25 °C will be approximately.

Options :

9561772743. $10^7 \left(\frac{W}{M}\right)^3$

9561772744. $10^7 \left(\frac{W}{M}\right)^5$

9561772745. $10^5 \left(\frac{W}{M}\right)^5$

9561772746. $10^3 \left(\frac{W}{M}\right)^5$

Question Number : 64 Question Id : 9561771279 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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25 °C पर कैल्सियम फ़ॉस्फेट (आण्विक द्रव्यमान, M) की जल में विलेयता W_g प्रति 100 mL है। 25 °C पर इसका विलेयता गुणनफल लगभग होगा :

Options :

9561772743. $10^7 \left(\frac{W}{M}\right)^3$

9561772744. $10^7 \left(\frac{W}{M}\right)^5$

9561772745. $10^5 \left(\frac{W}{M}\right)^5$

9561772746. $10^3 \left(\frac{W}{M}\right)^5$

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Question Number : 65 Question Id : 9561771280 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement (I) : Both metals and non-metals exist in p and d-block elements.

Statement (II) : Non-metals have higher ionisation enthalpy and higher electronegativity than the metals.

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

Options :

9561772747. Both **Statement I** and **Statement II** are true

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9561772748. Both **Statement I** and **Statement II** are false

9561772749. **Statement I** is true but **Statement II** is false

9561772750. **Statement I** is false but **Statement II** is true

Question Number : 65 Question Id : 9561771280 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं :

कथन (I) : p- और d- ब्लॉक तत्वों में धातु और अधातु दोनों पाए जाते हैं।

कथन (II) : अधातुओं की, धातुओं की तुलना में, उच्चतर आयनन एन्थैल्पियाँ और उच्चतर विद्युत ऋणात्मकताएँ होती हैं।

ऊपर दिए गए कथनों के संदर्भ में, नीचे दिए गए विकल्पों में **सही** उत्तर चुनिए :

Options :

9561772747. **कथन I** और **कथन II** दोनों सत्य हैं।

9561772748. **कथन I** और **कथन II** दोनों असत्य हैं।

9561772749. **कथन I** सत्य है परंतु **कथन II** असत्य है।

9561772750. **कथन I** असत्य है परंतु **कथन II** सत्य है।

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Question Number : 66 Question Id : 9561771281 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The strongest reducing agent among the following is :

Options :

9561772751. PH_3

9561772752. BiH_3

9561772753. NH_3

9561772754. SbH_3

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Question Number : 66 Question Id : 9561771281 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से प्रबलतम अपचायी कर्मक है :

Options :

9561772751. PH_3

9561772752. BiH_3

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9561772753. NH_3

9561772754. SbH_3

Question Number : 67 Question Id : 9561771282 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement (I) : SiO_2 and GeO_2 are acidic while SnO and PbO are amphoteric in nature.

Statement (II) : Allotropic forms of carbon are due to property of catenation and pπ-dπ bond formation.

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

Options :

9561772755. Both **Statement I** and **Statement II** are true

9561772756. Both **Statement I** and **Statement II** are false

9561772757. **Statement I** is true but **Statement II** is false

9561772758. **Statement I** is false but **Statement II** is true

Question Number : 67 Question Id : 9561771282 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं :

कथन (I) : SiO_2 और GeO_2 प्रकृति में अम्लीय होते हैं जबकि SnO और PbO प्रकृति में उभयधर्मी होते हैं।

कथन (II) : कार्बन के अपररूप, शृखलन के गुणधर्म और $p\pi$-$d\pi$ आबंध के बनने के कारण होते है।

ऊपर दिए गए कथनों के संदर्भ में, नीचे दिए गए विकल्पों में **सही** उत्तर चुनिए :

Options :

9561772755. **कथन I** और **कथन II** दोनों सत्य हैं।

9561772756. **कथन I** और **कथन II** दोनों असत्य हैं।

9561772757. **कथन I** सत्य है परंतु **कथन II** असत्य है।

9561772758. **कथन I** असत्य है परंतु **कथन II** सत्य है।

Question Number : 68 Question Id : 9561771283 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The transition metal having highest 3^{rd} ionisation enthalpy is :

Options :

9561772759. V

9561772760. Cr

9561772761.

Mn

9561772762. Fe

Question Number : 68 Question Id : 9561771283 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

वह संक्रमण धातु जिसकी तीसरी आयनन एन्थैल्पी उच्चतम होती है, है :

Options :

9561772759. V

9561772760. Cr

9561772761. Mn

9561772762. Fe

Question Number : 69 Question Id : 9561771284 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : In aqueous solutions Cr^{2+} is reducing while Mn^{3+} is oxidising in nature.

Reason (R) : Extra stability to half filled electronic configuration is observed than incompletely filled electronic configuration.

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

Options :

9561772763. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**

9561772764. Both **(A)** and **(R)** are true but **(R)** is **not** the correct explanation of **(A)**

9561772765. **(A)** is true but **(R)** is false

9561772766. **(A)** is false but **(R)** is true

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Question Number : 69 Question Id : 9561771284 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक को **अभिकथन** (A) और दूसरे को **कारण** (R) द्वारा दर्शाया गया है :

अभिकथन (A) : जलीय विलयनों में, Cr^{2+} प्रकृति में अपचायक जबकि Mn^{3+} उपचायक होता है।

कारण (R) : अपूर्ण रूप से भरे इलेक्ट्रॉनिक विन्यास की तुलना में अर्ध-भरे इलेक्ट्रॉनिक विन्यास का अतिरिक्त स्थायित्व।

ऊपर दिए गए कथनों के संदर्भ में, निम्नलिखित विकल्पों में से **सही** उत्तर चुनिए :

Options :

9561772763. **(A)** और **(R)** दोनों सत्य हैं और **(R)**, **(A)** की सही व्याख्या है।

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9561772764. (A) और (R) दोनों सत्य हैं और (R), (A) की सही व्याख्या नहीं है।

9561772765. (A) सत्य है परंतु (R) असत्य है।

9561772766. (A) असत्य है परंतु (R) सत्य है।

Question Number : 70 Question Id : 9561771285 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$[Co(NH_3)_6]^{3+}$ and $[CoF_6]^{3-}$ are respectively known as :

Options :

9561772767. Spin paired Complex, Spin free Complex

9561772768. Spin free Complex, Spin paired Complex

9561772769. Outer orbital Complex, Inner orbital Complex

9561772770. Inner orbital Complex, Spin paired Complex

Question Number : 70 Question Id : 9561771285 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$[Co(NH_3)_6]^{3+}$ और $[CoF_6]^{3-}$ क्रमशः जाने जाते है :

Options :

9561772767. प्रचक्रण युग्मित संकुल, प्रचक्रण मुक्त संकुल

9561772768. प्रचक्रण मुक्त संकुल, प्रचक्रण युग्मित संकुल

9561772769. बाह्य कक्षक संकुल, आंतरिक कक्षक संकुल

9561772770. आंतरिक कक्षक संकुल, प्रचक्रण युग्मित संकुल

Question Number : 71 Question Id : 9561771286 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which of the following compounds show colour due to d-d transition ?

Options :

9561772771. $KMnO_4$

9561772772. $K_2Cr_2O_7$

9561772773. K_2CrO_4

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9561772774. $CuSO_4.5H_2O$

Question Number : 71 Question Id : 9561771286 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कौन-सा यौगिक d-d संक्रमण के कारण रंग दर्शाता है?

Options :

9561772771. $KMnO_4$

9561772772. $K_2Cr_2O_7$

9561772773. K_2CrO_4

9561772774. $CuSO_4.5H_2O$

Question Number : 72 Question Id : 9561771287 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Lassaigne's test is used for detection of :

Options :

9561772775.

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Nitrogen and Sulphur only

9561772776. Phosphorous and halogens only

9561772777. Nitrogen, Sulphur and Phosphorous only

9561772778. Nitrogen, Sulphur, phosphorous and halogens

Question Number : 72 Question Id : 9561771287 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

लैसें परीक्षण निम्नलिखित में से पहचान के लिए प्रयोग किया जाता है :

Options :

9561772775. केवल नाइट्रोजन और सल्फर का

9561772776. केवल फ़ॉस्फ़ोरस और हैलोजनों की

9561772777. केवल नाइट्रोजन, सल्फर और फ़ॉस्फ़ोरस की

9561772778. नाइट्रोजन, सल्फर, फॉस्फ़ोरस और हैलाजनों की

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Question Number : 73 Question Id : 9561771288 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The functional group that shows negative resonance effect is :

Options :

9561772779. $-OR$

9561772780. $-OH$

9561772781. $-COOH$

9561772782. $-NH_2$

Question Number : 73 Question Id : 9561771288 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

वह प्रकार्यात्मक समूह जो ऋणात्मक अनुनाद प्रभाव दर्शाता है, है :

Options :

9561772779. $-OR$

9561772780. $-OH$

9561772781. $-COOH$

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9561772782. $-NH_2$

Question Number : 74 Question Id : 9561771289 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The set of meta directing functional groups from the following sets is :

Options :

9561772783. $-NO_2, \ -NH_2, \ -COOH, \ -COOR$

9561772784. $-NO_2, \ -CHO, \ -SO_3H, \ -COR$

9561772785. $-CN, \ -CHO, \ -NHCOCH_3, \ -COOR$

9561772786. $-CN, \ -NH_2, \ -NHR, \ -OCH_3$

Question Number : 74 Question Id : 9561771289 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित समुच्चयों में से मेटा-निर्देशात्मक प्रकार्यात्मक समूहों वाला समुच्चय है :

Options :

9561772783.

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$-NO_2,\ -NH_2,\ -COOH,\ -COOR$

9561772784. $-NO_2,\ -CHO,\ -SO_3H,\ -COR$

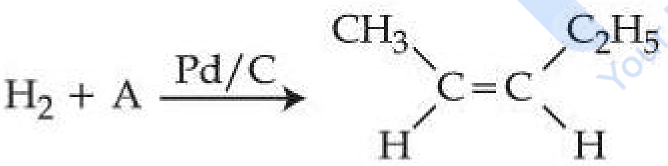
9561772785. $-CN,\ -CHO,\ -NHCOCH_3,\ -COOR$

9561772786. $-CN,\ -NH_2,\ -NHR,\ -OCH_3$

Question Number : 75 Question Id : 9561771290 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In the given reactions identify A and B



$CH_3-C\equiv C-CH_3 + H_2 \xrightarrow{Na/Liquid\ NH_3}$ "B"

Options :

9561772787. A : n − Pentane B : Cis − 2 − butene

9561772788. A : 2 − Pentyne B : trans − 2 − butene

9561772789. A : n − Pentane B : trans − 2 − butene

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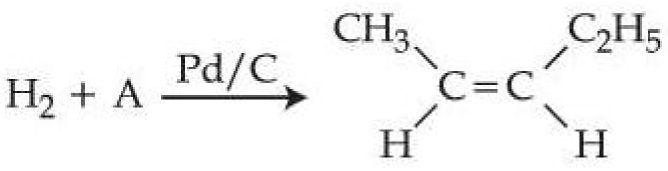
9561772790. A : 2 – Pentyne B : Cis – 2 – butene

Question Number : 75 Question Id : 9561771290 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दी गई अभिक्रिया में A और B पहचानिए :



$CH_3 - C \equiv C - CH_3 + H_2 \xrightarrow{Na/\text{द्रव } NH_3}$ "B"

Options :

9561772787. A : n – पेन्टेन B : सिस – 2 – ब्यूटीन

9561772788. A : 2 – पेन्टाइन B : ट्रांस – 2 – ब्यूटीन

9561772789. A : n – पेन्टेन B : ट्रांस – 2 – ब्यूटीन

9561772790. A : 2 – पेन्टाइन B : सिस – 2 – ब्यूटीन

Question Number : 76 Question Id : 9561771291 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

	List - I		**List - II**
	Compound		**Use**
(A)	Carbon tetrachloride	(I)	Paint remover
(B)	Methylene chloride	(II)	Refrigerators and air conditioners
(C)	DDT	(III)	Fire extinguisher
(D)	Freons	(IV)	Non Biodegradable insecticide

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

Options :

9561772791. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

9561772792. (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

9561772793. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

9561772794. (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

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Question Number : 76 Question Id : 9561771291 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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सूची - I को **सूची - II** के साथ मिलाइए :

सूची - I		**सूची - II**	
(यौगिक)		**(उपयोग)**	
(A)	कार्बन टेट्राक्लोराइड	(I)	पेन्ट हटाने के लिए
(B)	मैथिलीन क्लोराइड	(II)	रेफ्रीजेरेटरों और वातानुकोलकों में
(C)	डी.डी.टी.	(III)	अग्नि शामकों में
(D)	फ्रीऑनें	(IV)	जैव-अनिम्नीकरणीय कीटनाशकों में

नीचे दिए गए विकल्पों से **सही** उत्तर चुनिए :

Options :

9561772791. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

9561772792. (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

9561772793. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

9561772794. (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

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Question Number : 77 Question Id : 9561771292 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

	List - I		**List - II**
	Reactants		**Product**
(A)	Phenol, Zn/Δ	(I)	Salicylaldehyde
(B)	Phenol, $CHCl_3$, NaOH, HCl	(II)	Salicylic acid
(C)	Phenol, CO_2, NaOH, HCl	(III)	Benzene
(D)	Phenol, Conc. HNO_3	(IV)	Picric acid

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

Options :

9561772795. (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

9561772796. (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

9561772797. (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

9561772798. (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

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Question Number : 77 Question Id : 9561771292 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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सूची – I को सूची – II के साथ मिलाइए :

सूची – I (अभिकर्मक)		सूची – II (उत्पाद)	
(A)	फ़ीनॉल, Zn/Δ	(I)	सैलिसिलैल्डिहाइड
(B)	फ़ीनॉल, $CHCl_3$, NaOH, HCl	(II)	सैलिसिलिक अम्ल
(C)	फ़ीनॉल, CO_2, NaOH, HCl	(III)	बेन्ज़ीन
(D)	फ़ीनॉल, सांद्र HNO_3	(IV)	पिक्रिक अम्ल

नीचे दिए गए विकल्पों से **सही** उत्तर चुनिए :

Options :

9561772795. (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

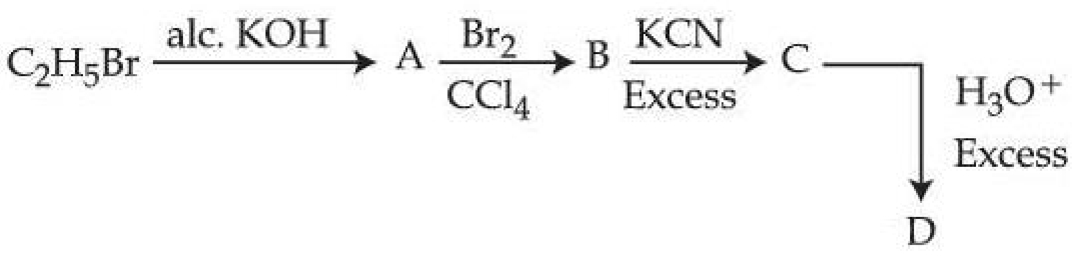
9561772796. (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

9561772797. (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

9561772798. (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

Question Number : 78 Question Id : 9561771293 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1



Acid D formed in above reaction is :

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Options :

9561772799. Oxalic acid

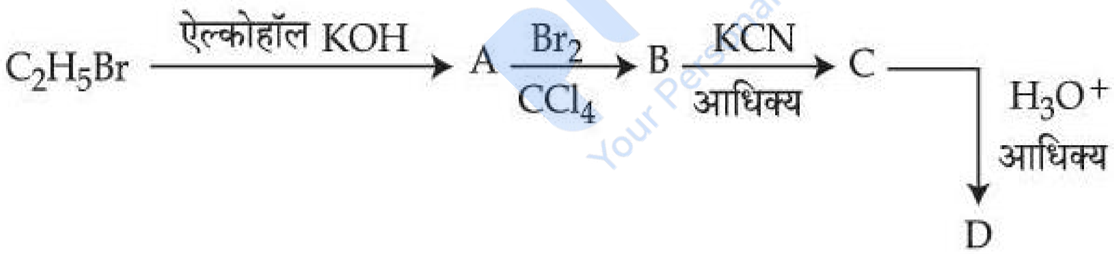
9561772800. Malonic acid

9561772801. Gluconic acid

9561772802. Succinic acid

Question Number : 78 Question Id : 9561771293 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1



ऊपर दी गई अभिक्रिया में बना अम्ल D है :

Options :

9561772799. ऑक्सैलिक अम्ल

9561772800. मैलोनिक अम्ल

9561772801. ग्लूकोनिक अम्ल

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9561772802. सक्सिनिक अम्ल

Question Number : 79 Question Id : 9561771294 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which among the followng has highest boiling point ?

Options :

9561772803. $CH_3CH_2CH_2CH_3$

9561772804. $H_5C_2-O-C_2H_5$

9561772805. $CH_3CH_2CH_2CHO$

9561772806. $CH_3CH_2CH_2CH_2-OH$

Question Number : 79 Question Id : 9561771294 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से किसका उच्चतम क्वथनांक होता है ?

Options :

9561772803. $CH_3CH_2CH_2CH_3$

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9561772804. $H_5C_2-O-C_2H_5$

9561772805. $CH_3CH_2CH_2CHO$

9561772806. $CH_3CH_2CH_2CH_2-OH$

Question Number : 80 Question Id : 9561771295 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement (I) : Dimethyl glyoxime forms a six-membered covalent chelate when treated with $NiCl_2$ solution in presence of NH_4OH.

Statement (II) : Prussian blue precipitate contains iron both in (+2) and (+3) oxidation states.

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

Options :

9561772807. Both **Statement I** and **Statement II** are true

9561772808. Both **Statement I** and **Statement II** are false

9561772809. **Statement I** is true but **Statement II** is false

9561772810. **Statement I** is false but **Statement II** is true

Question Number : 80 Question Id : 9561771295 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं :

कथन (I) : डाइमेथिल ग्लाइऑक्सिम NH_4OH की उपस्थिति में $NiCl_2$ विलयन के साथ उपचार द्वारा एक छः सदस्यीय सहसंयोजी कीलेट बनाता है।

कथन (II) : प्रूसियन ब्लू अवक्षेप में आयरन (+2) और (+3) दोनों ऑक्सीकरण अवस्थाओं में उपस्थित होता है।

ऊपर दिए गए कथनों के संदर्भ में, नीचे दिए गए विकल्पों में **सही** उत्तर चुनिए :

Options :

9561772807. **कथन I** और **कथन II** दोनों सत्य हैं।

9561772808. **कथन I** और **कथन II** दोनों असत्य हैं।

9561772809. **कथन I** सत्य है परंतु **कथन II** असत्य है।

9561772810. **कथन I** असत्य है परंतु **कथन II** सत्य है।

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Chemistry Section B

Section Id :	95617779
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10

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Number of Questions to be attempted : 5

Section Marks : 20

Enable Mark as Answered Mark for Review and Clear Response : Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 95617782

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 81 Question Id : 9561771296 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

10 mL of gaseous hydrocarbon on combustion gives 40 mL of $CO_2(g)$ and 50 mL of water vapour. Total number of carbon and hydrogen atoms in the hydrocarbon is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 81 Question Id : 9561771296 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

किसी गैसीय हाइड्रोकार्बन के 10 mL पूर्ण दहन पर 40 mL $CO_2(g)$ और 50 mL जल वाष्प देते हैं। हाइड्रोकार्बन में कार्बन और हाइड्रोजन परमाणुओं की कुल संख्या ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

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Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 82 Question Id : 9561771297 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For a certain reaction at 300K, K=10, then ΔG° for the same reaction is −________ $\times 10^{-1}$ kJ mol^{-1}. (Given R=8.314 JK^{-1} mol^{-1})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 82 Question Id : 9561771297 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

300K पर किसी विशिष्ट अभिक्रिया के लिए, K=10 है, तब उसी अभिक्रिया के लिए ΔG° (−) ________ x 10^{-1} kJ mol^{-1} (दिया गया है : R=8.314 JK^{-1} mol^{-1} है।)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

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Question Number : 83 Question Id : 9561771298 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Mass of ethylene glycol (antifreeze) to be added to 18.6 kg of water to protect the freezing point at $-24°C$ is _______ kg (Molar mass in $g\ mol^{-1}$ for ethylene glycol 62, K_f of water $= 1.86\ K\ kg\ mol^{-1}$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 83 Question Id : 9561771298 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एथिलीन ग्लाइकॉल (प्रतिहिम) का हिमांक को $-24°C$ पर अनुरक्षित करने के लिए जल के 18.6 kg में मिलाया जाने वाला द्रव्यमान _______ kg है। ($g\ mol^{-1}$ में एथिलीन का मोलर द्रव्यमान 62 है।)

(जल के लिए $K_f = 1.86\ K\ kg\ mol^{-1}$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 84 Question Id : 9561771299 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The amount of electricity in Coulomb required for the oxidation of 1 mol of H_2O to O_2 is _________ $\times 10^5$C.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 84 Question Id : 9561771299 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

जल के 1 मोल के O_2 में ऑक्सीकरण के लिए आवश्यक विद्युत की कूलॉम में मात्रा _________ $\times 10^5$ C है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 85 Question Id : 9561771300 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Consider the following redox reaction :

$$MnO_4^- + H^+ + H_2C_2O_4 \rightleftharpoons Mn^{2+} + H_2O + CO_2$$

The standard reduction potentials are given as below $\left(E^\circ_{red}\right)$:

$$E^\circ_{MnO_4^-/Mn^{2+}} = +1.51\ V$$

$$E^\circ_{CO_2/H_2C_2O_4} = -0.49\ V$$

If the equilibrium constant of the above reaction is given as $K_{eq}=10^x$, then the value of x = ________ (nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 85 Question Id : 9561771300 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित रेडॉक्स अभिक्रिया पर विचार कीजिए :

$$MnO_4^- + H^+ + H_2C_2O_4 \rightleftharpoons Mn^{2+} + H_2O + CO_2$$

मानक अपचयन विभव $\left(E^\circ_{\text{अपचयन}}\right)$ = नीचे दिए गए हैं :

$$E^\circ_{MnO_4^-/Mn^{2+}} = +1.51\ V$$

$$E^\circ_{CO_2/H_2C_2O_4} = -0.49\ V$$

यदि ऊपर दी गई अभिक्रिया का साम्य स्थिरांक, $K_{eq}=10^x$ हो, तो x = ________ है। (निकटतम पूर्णांक)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 86 Question Id : 9561771301 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The following data were obtained during the first order thermal decomposition of a gas A at constant volume :

$A(g) \rightarrow 2B(g) + C(g)$

S.No.	Time/s	Total pressure/(atm)
1.	0	0.1
2.	115	0.28

The rate constant of the reaction is ________ $\times 10^{-2} s^{-1}$ (nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 86 Question Id : 9561771301 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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स्थिर आयतन पर किसी गैस A के प्रथम कोटि तापीय विघटन के दौरान निम्नलिखित आँकड़े प्राप्त हुए :

$A(g) \rightarrow 2B(g) + C(g)$

S.No.	समय/s	कुल दाब /(atm)
1.	0	0.1
2.	115	0.28

अभिक्रिया का वेग स्थिरांक ________ $\times 10^{-2} s^{-1}$ है। (निकटतम पूर्णांक में)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 87 Question Id : 9561771302 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Following Kjeldahl's method, 1g of organic compound released ammonia, that neutralised 10 mL of 2M H_2SO_4. The percentage of nitrogen in the compound is ________%.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 87 Question Id : 9561771302 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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केल्डॉल विधि के उपयोग द्वारा, 1g कार्बनिक यौगिक से उत्सर्जित अमोनिया ने 2M H_2SO_4 के 10 mL को उदासीनीकृत किया। यौगिक में नाइट्रोजन का प्रतिशत ________% है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 88 Question Id : 9561771303 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Total number of isomeric compounds (including stereoisomers) formed by monochlorination of 2-methylbutane is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 88 Question Id : 9561771303 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

2-मेथिलब्यूटेन के मोनोक्लोरीनन से बने समावयवी यौगिकों (त्रिविम समावयवों सहित) की कुल संख्या ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

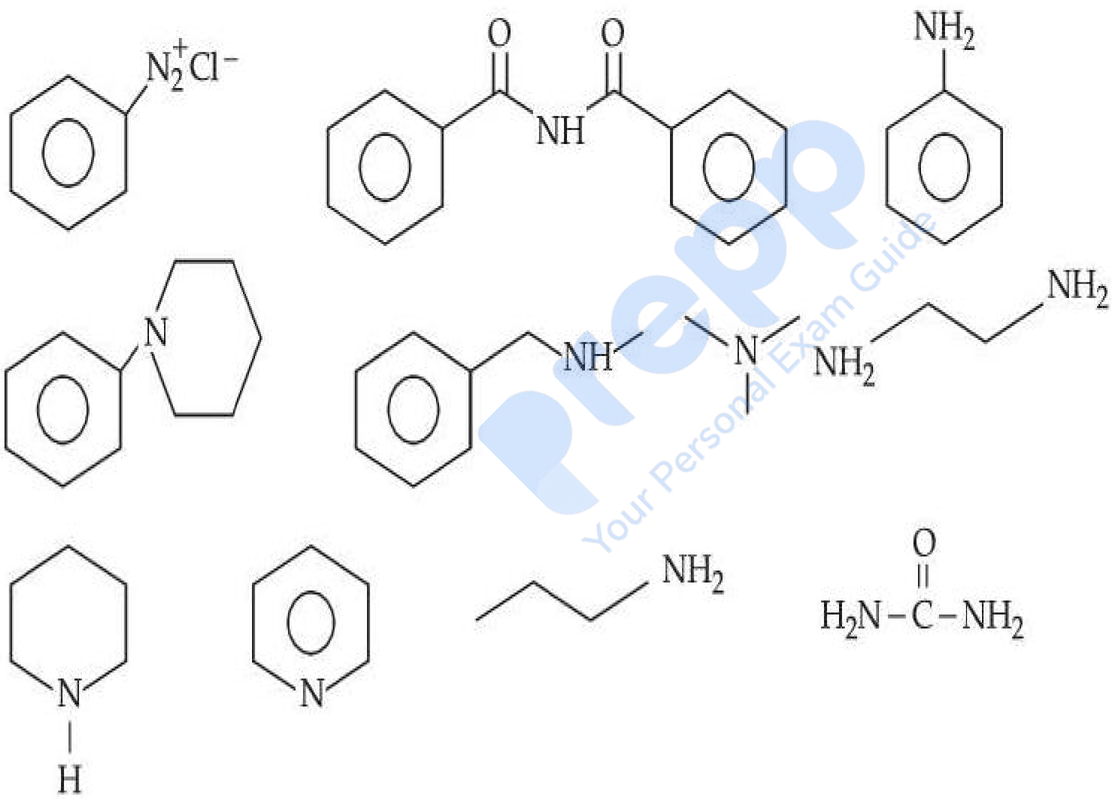
1

Question Number : 89 Question Id : 9561771304 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Number of compounds which give reaction with Hinsberg's reagent is ________.



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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Question Number : 89 Question Id : 9561771304 Question Type : SA Calculator : None

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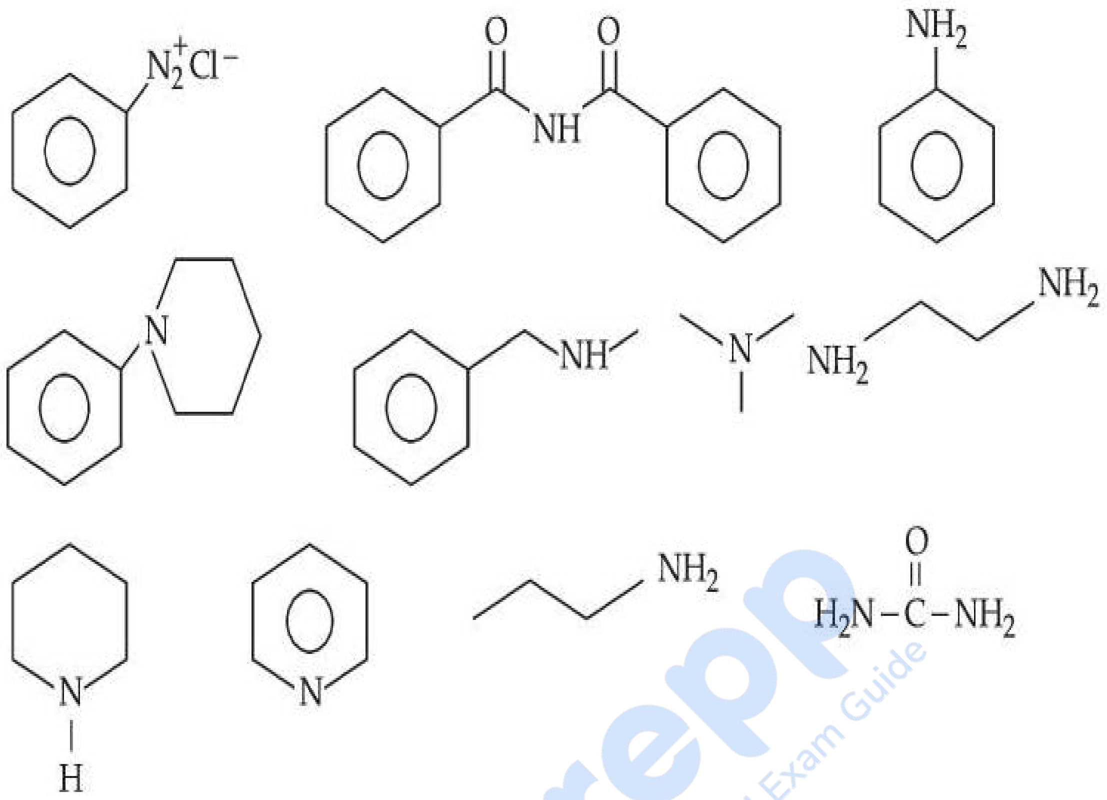
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

हिंसबर्ग अभिकर्मक के साथ अभिक्रिया करने वाले यौगिकों की संख्या ________ है।



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 90 Question Id : 9561771305 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of tripeptides formed by three different amino acids using each amino acid once is ________.

Response Type : Numeric

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Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 90 Question Id : 9561771305 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

तीन भिन्न ऐमीनो अम्लों के उपयोग द्वारा बने ट्राइपेप्टाइडों जिनमें प्रत्येक ऐमीनो अम्ल का एक बार उपयोग किया गया हो, की संख्या ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

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