National Testing Agency

Question Paper Name :	SET 110
Subject Name :	B TECH
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B E and B Tech

Group Number :	1
Group Id :	71550542
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 :	715505229
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 :	715505229
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 1 Question Id : 7155053772 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 range of $f(x)=4\sin^{-1}\left(\frac{x^2}{x^2+1}\right)$ is

Options :

71550511991. $[0, \pi]$

71550511992. $[0, \pi)$

71550511993. $[0, 2\pi]$

71550511994. $[0, 2\pi)$

Question Number : 1 Question Id : 7155053772 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

$f(x)=4\sin^{-1}\left(\frac{x^2}{x^2+1}\right)$ का परिसर है

Options :

71550511991. $[0, \pi]$

71550511992. $[0, \pi)$

71550511993. $[0, 2\pi]$

71550511994. $[0, 2\pi)$

Question Number : 2 Question Id : 7155053773 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 $S=\{z\in\mathbb{C}:\bar{z}=i(z^2+Re(\bar{z}))\}$. Then $\sum_{z\in S}|z|^2$ is equal to

Options :

71550511995. $\frac{5}{2}$

71550511996. 3

71550511997. $\frac{7}{2}$

71550511998. 4

Question Number : 2 Question Id : 7155053773 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 $S = \{z \in \mathbb{C} : \bar{z} = i(z^2 + Re(\bar{z}))\}$ है । तो $\sum_{z \in S} |z|^2$ बराबर है

Options :

71550511995. $\frac{5}{2}$

71550511996. 3

71550511997. $\frac{7}{2}$

71550511998. 4

Question Number : 3 Question Id : 7155053774 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, β be the roots of the equation $x^2 - \sqrt{2}x + 2 = 0$. Then $\alpha^{14} + \beta^{14}$ is equal to

Options :

71550511999. -64

71550512000. $-64\sqrt{2}$

71550512001. -128

71550512002. $-128\sqrt{2}$

Question Number : 3 Question Id : 7155053774 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 $x^2-\sqrt{2}x+2=0$ के मूल α, β हैं। तो $\alpha^{14}+\beta^{14}$ बराबर है

Options :

71550511999. -64

71550512000. $-64\sqrt{2}$

71550512001. -128

71550512002. $-128\sqrt{2}$

Question Number : 4 Question Id : 7155053775 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 system of equations
$2x+y-z=5$
$2x-5y+\lambda z=\mu$
$x+2y-5z=7$
has infinitely many solutions, then $(\lambda+\mu)^2+(\lambda-\mu)^2$ is equal to

Options :

71550512003. 904

71550512004. 912

71550512005. 916

71550512006. 920

Question Number : 4 Question Id : 7155053775 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 समीकरण निकाय

$2x + y - z = 5$

$2x - 5y + \lambda z = \mu$

$x + 2y - 5z = 7$

के अनंत हल हैं, तो $(\lambda + \mu)^2 + (\lambda - \mu)^2$ बराबर है

Options :

71550512003. 904

71550512004. 912

71550512005. 916

71550512006. 920

Question Number : 5 Question Id : 7155053776 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 for $A = \begin{bmatrix} 1 & 2 & 3 \\ \alpha & 3 & 1 \\ 1 & 1 & 2 \end{bmatrix}$, $|A| = 2$. If $|2 \text{ adj } (2 \text{ adj } (2A))| = 32^n$, then $3n + \alpha$ is equal to

Options :

71550512007. 9

71550512008. 10

71550512009. 11

71550512010. 12

Question Number : 5 Question Id : 7155053776 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 $A=\begin{bmatrix}1 & 2 & 3\\ \alpha & 3 & 1\\ 1 & 1 & 2\end{bmatrix}$ के लिए $|A|=2$ है। यदि $|2 \text{ adj } (2 \text{ adj } (2A))| = 32^n$ है, तो $3n + \alpha$ बराबर है

Options :

71550512007. 9

71550512008. 10

71550512009. 11

71550512010. 12

Question Number : 6 Question Id : 7155053777 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

All words, with or without meaning, are made using all the letters of the word MONDAY. These words are written as in a dictionary with serial numbers. The serial number of the word MONDAY is

Options :

71550512011. 324

71550512012. 326

71550512013. 327

71550512014. 328

Question Number : 6 Question Id : 7155053777 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

शब्द MONDAY के सभी अक्षरों के प्रयोग से सारे शब्द अर्थपूर्ण या अर्थहीन, बनाए गए हैं। इन शब्दों को शब्दकोश के अनुसार क्रमांक संख्या के साथ लिखा गया है। शब्द MONDAY की क्रमांक संख्या है

Options :

71550512011. 324

71550512012. 326

71550512013. 327

71550512014. 328

Question Number : 7 Question Id : 7155053778 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 coefficient of x^5 in the expansion of $\left(2x^3 - \frac{1}{3x^2}\right)^5$ is

Options :

71550512015. 8

71550512016. 9

71550512017. $\frac{80}{9}$

71550512018. $\frac{26}{3}$

Question Number : 7 Question Id : 7155053778 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

$\left(2x^3 - \frac{1}{3x^2}\right)^5$ के प्रसार में x^5 का गुणांक है

Options :

71550512015. 8

71550512016. 9

71550512017. $\frac{80}{9}$

71550512018. $\frac{26}{3}$

Question Number : 8 Question Id : 7155053779 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 $a_1, a_2, a_3, \ldots$ be a G. P. of increasing positive numbers. Let the sum of its 6^{th} and 8^{th} terms be 2 and the product of its 3^{rd} and 5^{th} terms be $\frac{1}{9}$. Then $6(a_2 + a_4)(a_4 + a_6)$ is equal to

Options :

71550512019. 2

71550512020. $2\sqrt{2}$

71550512021. $3\sqrt{3}$

71550512022. 3

Question Number : 8 Question Id : 7155053779 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 $a_1, a_2, a_3, \ldots$ वर्धमान धनात्मक संख्याओं की एक G. P. है। माना इसके छठे और आठवें पदों का योग 2 है तथा इसके तीसरे और पाँचवें पदों का गुणनफल $\frac{1}{9}$ है। तो $6(a_2 + a_4)(a_4 + a_6)$ बराबर है

Options :

71550512019. 2

71550512020. $2\sqrt{2}$

71550512021. $3\sqrt{3}$

71550512022. 3

Question Number : 9 Question Id : 7155053780 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 $\lim_{x\to 0} \frac{e^{ax} - \cos(bx) - \frac{cxe^{-cx}}{2}}{1-\cos(2x)} = 17$, then $5a^2 + b^2$ is equal to

Options :

71550512023. 68

71550512024. 64

71550512025. 72

71550512026. 76

Question Number : 9 Question Id : 7155053780 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 $\lim_{x\to 0} \frac{e^{ax} - \cos(bx) - \frac{cxe^{-cx}}{2}}{1-\cos(2x)} = 17$ है, तो $5a^2 + b^2$ बराबर है

Options :

71550512023. 68

71550512024. 64

71550512025. 72

71550512026. 76

Question Number : 10 Question Id : 7155053781 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 $\dfrac{e^{-\frac{\pi}{4}} + \int_0^{\frac{\pi}{4}} e^{-x}\tan^{50}x\,dx}{\int_0^{\frac{\pi}{4}} e^{-x}\left(\tan^{49}x + \tan^{51}x\right)dx}$ is

Options :

71550512027. 25

71550512028. 49

71550512029. 50

71550512030. 51

Question Number : 10 Question Id : 7155053781 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

$\dfrac{e^{-\frac{\pi}{4}} + \int_0^{\frac{\pi}{4}} e^{-x}\tan^{50}x\,dx}{\int_0^{\frac{\pi}{4}} e^{-x}\left(\tan^{49}x + \tan^{51}x\right)dx}$ का मान है

Options :

71550512027. 25

71550512028. 49

71550512029. 50

71550512030. 51

Question Number : 11 Question Id : 7155053782 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 area of the region $\{(x, y) : x^2 \le y \le |x^2 - 4|, y \ge 1\}$ is

Options :

71550512031. $\frac{4}{3}\left(4\sqrt{2}-1\right)$

71550512032. $\frac{4}{3}\left(4\sqrt{2}+1\right)$

71550512033. $\frac{3}{4}\left(4\sqrt{2}-1\right)$

71550512034. $\frac{3}{4}\left(4\sqrt{2}+1\right)$

Question Number : 11 Question Id : 7155053782 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

क्षेत्र $\{(x, y) : x^2 \le y \le |x^2 - 4|, y \ge 1\}$ का क्षेत्रफल है

Options :

71550512031. $\frac{4}{3}\left(4\sqrt{2}-1\right)$

71550512032. $\frac{4}{3}\left(4\sqrt{2}+1\right)$

71550512033. $\frac{3}{4}\left(4\sqrt{2}-1\right)$

71550512034. $\frac{3}{4}\left(4\sqrt{2}+1\right)$

Question Number : 12 Question Id : 7155053783 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, β) be the centroid of the triangle formed by the lines $15x - y = 82$, $6x - 5y = -4$ and $9x + 4y = 17$. Then $\alpha + 2\beta$ and $2\alpha - \beta$ are the roots of the equation

Options :

71550512035. $x^2 - 14x + 48 = 0$

71550512036. $x^2 - 10x + 25 = 0$

71550512037. $x^2 - 7x + 12 = 0$

71550512038. $x^2 - 13x + 42 = 0$

Question Number : 12 Question Id : 7155053783 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 रेखाओं $15x - y = 82, 6x - 5y = -4$ तथा $9x + 4y = 17$ द्वारा बने त्रिबुज का केन्द्रक (α, β) है। तो $\alpha + 2\beta$ तथा $2\alpha - \beta$ किस समीकरण के मूल हैं ?

Options :

71550512035. $x^2 - 14x + 48 = 0$

71550512036. $x^2 - 10x + 25 = 0$

71550512037. $x^2 - 7x + 12 = 0$

71550512038. $x^2 - 13x + 42 = 0$

Question Number : 13 Question Id : 7155053784 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 centre of a circle C be (α,β) and its radius $r < 8$. Let $3x + 4y = 24$ and $3x - 4y = 32$ be two tangents and $4x + 3y = 1$ be a normal to C. Then $(\alpha - \beta + r)$ is equal to

Options :

71550512039. 5

71550512040. 6

71550512041. 7

71550512042. 9

Question Number : 13 Question Id : 7155053784 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 एक वृत्त C का केन्द्र (α,β) है तथा इसकी त्रिज्या $r < 8$ है। माना C की दो स्पर्श रेखाएँ $3x + 4y = 24$ तथा $3x - 4y = 32$ हैं तथा एक अभिलंब $4x + 3y = 1$ है।
तो $(\alpha - \beta + r)$ बराबर है

Options :

71550512039. 5

71550512040. 6

71550512041. 7

71550512042. 9

Question Number : 14 Question Id : 7155053785 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 plane, passing through the points $(0, -1, 2)$ and $(-1, 2, 1)$ and parallel to the line passing through $(5,1,-7)$ and $(1,-1,-1)$, also passes through the point

Options :

71550512043. $(1, -2, 1)$

71550512044. $(-2, 5, 0)$

71550512045. $(2, 0, 1)$

71550512046. $(0, 5, -2)$

Question Number : 14 Question Id : 7155053785 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

बिंदुओं (5,1,–7) और (1,–1,–1)से होकर जाने वाली रेखा के समांतर तथा बिंदुओं (0, −1, 2) (−1, 2, 1) से होकर जानेवाला समतल, निम्न में से किस बिंदु से होकर जाता है ?

Options :

71550512043. $(1, -2, 1)$

71550512044. $(-2, 5, 0)$

71550512045. $(2, 0, 1)$

71550512046. $(0, 5, -2)$

Question Number : 15 Question Id : 7155053786 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 line, that is coplanar to the line $\frac{x+3}{-3} = \frac{y-1}{1} = \frac{z-5}{5}$, is

Options :

71550512047. $\frac{x-1}{-1} = \frac{y-2}{2} = \frac{z-5}{5}$

71550512048. $\frac{x+1}{-1} = \frac{y-2}{2} = \frac{z-5}{5}$

71550512049.

$\frac{x+1}{-1}=\frac{y-2}{2}=\frac{z-5}{4}$

71550512050. $\frac{x+1}{1}=\frac{y-2}{2}=\frac{z-5}{5}$

Question Number : 15 Question Id : 7155053786 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

रेखा $\frac{x+3}{-3}=\frac{y-1}{1}=\frac{z-5}{5}$, के सहतलीय रेखा का समीकरण है

Options :

71550512047. $\frac{x-1}{-1}=\frac{y-2}{2}=\frac{z-5}{5}$

71550512048. $\frac{x+1}{-1}=\frac{y-2}{2}=\frac{z-5}{5}$

71550512049. $\frac{x+1}{-1}=\frac{y-2}{2}=\frac{z-5}{4}$

71550512050. $\frac{x+1}{1}=\frac{y-2}{2}=\frac{z-5}{5}$

Question Number : 16 Question Id : 7155053787 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 N be the foot of perpendicular from the point P (1, −2, 3) on the line passing through the points (4, 5, 8) and (1, −7, 5). Then the distance of N from the plane $2x - 2y + z + 5 = 0$ is

Options :

71550512051. 6

71550512052. 7

71550512053. 8

71550512054. 9

Question Number : 16 Question Id : 7155053787 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 बिंदुओं $(4, 5, 8)$ तथा $(1, -7, 5)$ से होकर जानेवाली रेखा पर बिंदु P $(1, -2, 3)$ से डाले गए लंब का पाद N है। तो समतल $2x - 2y + z + 5 = 0$ से N की दूरी है

Options :

71550512051. 6

71550512052. 7

71550512053. 8

71550512054. 9

Question Number : 17 Question Id : 7155053788 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 $|\vec{a}| = 2, |\vec{b}| = 3$ and the angle between the vectors $\vec{a}$ and $\vec{b}$ be $\frac{\pi}{4}$. Then $\left|\left(\vec{a}+2\vec{b}\right)\times\left(2\vec{a}-3\vec{b}\right)\right|^2$ is equal to

Options :

71550512055. 441

71550512056. 882

71550512057. 482

71550512058. 841

Question Number : 17 Question Id : 7155053788 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 $|\vec{a}| = 2, |\vec{b}| = 3$ है तथा सदिशों $\vec{a}$ और $\vec{b}$ के बीच का कोण $\frac{\pi}{4}$ है। तो $\left|\left(\vec{a}+2\vec{b}\right)\times\left(2\vec{a}-3\vec{b}\right)\right|^2$ बराबर है

Options :

71550512055. 441

71550512056. 882

71550512057. 482

71550512058. 841

Question Number : 18 Question Id : 7155053789 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 for a triangle ABC,

$\overrightarrow{AB} = -2\hat{i} + \hat{j} + 3\hat{k}$

$\overrightarrow{CB} = \alpha\hat{i} + \beta\hat{j} + \gamma\hat{k}$

$\overrightarrow{CA} = 4\hat{i} + 3\hat{j} + \delta\hat{k}$

If $\delta > 0$ and the area of the triangle ABC is $5\sqrt{6}$, then $\overrightarrow{CB} \cdot \overrightarrow{CA}$ is equal to

Options :

71550512059. 60

71550512060. 54

71550512061. 120

71550512062. 108

Question Number : 18 Question Id : 7155053789 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 एक त्रिभुज ABC के लिए,

$\overrightarrow{AB} = -2\hat{i} + \hat{j} + 3\hat{k}$

$\overrightarrow{CB} = \alpha\hat{i} + \beta\hat{j} + \gamma\hat{k}$

$\overrightarrow{CA} = 4\hat{i} + 3\hat{j} + \delta\hat{k}$

है। यदि $\delta > 0$ है तथा त्रिभुज ABC का क्षेत्रफल $5\sqrt{6}$ है, तो $\overrightarrow{CB} \cdot \overrightarrow{CA}$ बराबर है

Options :

71550512059. 60

71550512060. 54

71550512061. 120

71550512062. 108

Question Number : 19 Question Id : 7155053790 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 random variable X follows binomial distribution B (n, p), for which the difference of the mean and the variance is 1. If $2P(X = 2) = 3P(X = 1)$, then $n^2\ P(X > 1)$ is equal to

Options :

71550512063. 15

71550512064. 16

71550512065. 12

71550512066. 11

Question Number : 19 Question Id : 7155053790 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 यादृच्छिक चर X एक द्विपद बंटन B (n, p) जिसके माध्य तथा प्रसरण का अंतर 1 है, का अनुसरण करता है।
यदि $2P(X = 2) = 3P(X = 1)$ है, तो $n^2\ P(X > 1)$ बराबर है

Options :

71550512063. 15

71550512064. 16

71550512065. 12

71550512066. 11

Question Number : 20 Question Id : 7155053791 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 statement $(p \wedge (\sim q)) \vee ((\sim p) \wedge q) \vee((\sim p) \wedge (\sim q))$ is equivalent to _____

Options :

71550512067. $(\sim p) \vee (\sim q)$

71550512068. $p \vee (\sim q)$

71550512069. $(\sim p) \vee q$

71550512070. $p \vee q$

Question Number : 20 Question Id : 7155053791 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

कथन $(p \wedge (\sim q)) \vee ((\sim p) \wedge q) \vee((\sim p) \wedge (\sim q))$ किस के तुल्य है ?

Options :

71550512067. $(\sim p) \vee (\sim q)$

71550512068. $p \vee (\sim q)$

71550512069. $(\sim p) \vee q$

71550512070. $p \vee q$

Mathematics Section B

Section Id :	715505230
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 :	715505230
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 21 Question Id : 7155053792 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 = {–4, –3, –2, 0, 1, 3, 4} and R = {$(a, b) \in A \times A$: $b = |a|$ or $b^2 = a + 1$} be a relation on A. Then the minimum number of elements, that must be added to the relation R so that it becomes reflexive and symmetric, is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 21 Question Id : 7155053792 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

माना $A = \{-4, -3, -2, 0, 1, 3, 4\}$ है तथा A पर एक संबंध $R = \{(a, b) \in A \times A : b = |a| \text{ या } b^2 = a + 1\}$ है। तो संबंध R में कम से कम कितने अवयव जोडे जांए, जिससे कि यह स्वतुल्य तथा सममित हो जाए ?

_____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 22 Question Id : 7155053793 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Total numbers of 3-digit numbers that are divisible by 6 and can be formed by using the digits 1, 2, 3, 4, 5 with repetition, is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 22 Question Id : 7155053793 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

अंकों 1, 2, 3, 4, 5 के प्रयोग से, पुनरावृत्ति के साथ, बनाई जा सकने वाली 6 से विभाज्य 3 अंकों की संख्याओं की संख्या है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 23 Question Id : 7155053794 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

The remainder, when 7^{103} is divided by 17, is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 23 Question Id : 7155053794 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

7^{103} को 17 से विभाजित करने पर शेषफल है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 24 Question Id : 7155053795 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Let $[\alpha]$ denote the greatest integer $\leq \alpha$. Then $\left[\sqrt{1}\right]+\left[\sqrt{2}\right]+\left[\sqrt{3}\right]+...+\left[\sqrt{120}\right]$ is equal to _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 24 Question Id : 7155053795 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

माना $[\alpha]$ महत्तम पूर्णांक $\leq \alpha$ है। तो $\left[\sqrt{1}\right]+\left[\sqrt{2}\right]+\left[\sqrt{3}\right]+...+\left[\sqrt{120}\right]$ बराबर है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 25 Question Id : 7155053796 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Let $f\left(x\right)=\sum_{k=1}^{10} k\ x^{k}, x \in \mathbb{R}$. If $2f(2)+f'(2)=119\ (2)^{n}+1$ then n is equal to _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 25 Question Id : 7155053796 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

माना $f\left(x\right)=\sum_{k=1}^{10} k\ x^{k}, x \in \mathbb{R}$ है। यदि $2f(2)+f'(2)=119\ (2)^{n}+1$ है, तो n बराबर है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 26 Question Id : 7155053797 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Let $f_n = \int_0^{\frac{\pi}{2}} \left(\sum_{k=1}^{n} \sin^{k-1} x \right) \left(\sum_{k=1}^{n} (2k-1) \sin^{k-1} x \right) \cos x \, dx, \, n \in \mathbb{N}$. Then $f_{21} - f_{20}$ is equal to _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 26 Question Id : 7155053797 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

माना $f_n = \int_0^{\frac{\pi}{2}} \left(\sum_{k=1}^{n} \sin^{k-1} x \right) \left(\sum_{k=1}^{n} (2k-1) \sin^{k-1} x \right) \cos x \, dx, \, n \in \mathbb{N}$ है। तो $f_{21} - f_{20}$ बराबर है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 27 Question Id : 7155053798 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

If $y = y(x)$ is the solution of the differential equation $\frac{dy}{dx} + \frac{4x}{\left(x^2-1\right)}y = \frac{x+2}{\left(x^2-1\right)^{\frac{5}{2}}},\ x > 1$ such that

$y(2) = \frac{2}{9}\log_e\left(2+\sqrt{3}\right)$ and $y\left(\sqrt{2}\right) = \alpha\log_e\left(\sqrt{\alpha}+\beta\right)+\beta-\sqrt{\gamma}, \alpha, \beta, \gamma \in \mathbb{N}$, then $\alpha\beta\gamma$ is equal to

---

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 27 Question Id : 7155053798 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

यदि अवकल समीकरण $\frac{dy}{dx} + \frac{4x}{\left(x^2-1\right)}y = \frac{x+2}{\left(x^2-1\right)^{\frac{5}{2}}},\ x > 1$ का हल $y = y(x)$ है तथा

$y(2) = \frac{2}{9}\log_e\left(2+\sqrt{3}\right)$ और $y\left(\sqrt{2}\right) = \alpha\log_e\left(\sqrt{\alpha}+\beta\right)+\beta-\sqrt{\gamma}, \alpha, \beta, \gamma \in \mathbb{N}$ हैं, तो $\alpha\beta\gamma$ बराबर है

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 28 Question Id : 7155053799 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

The foci of a hyperbola are $(\pm 2,0)$ and its eccentricity is $\frac{3}{2}$. A tangent, perpendicular to the line $2x + 3y = 6$, is drawn at a point in the first quadrant on the hyperbola. If the intercepts made by the tangent on the x- and y-axes are a and b respectively, then $|6a|+|5b|$ is equal to _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 28 Question Id : 7155053799 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

एक अतिपरवलय की नाभियाँ $(\pm 2,0)$ हैं तथा इसकी उत्केन्द्रता $\frac{3}{2}$ है। प्रथम चतुर्थांश में अतिपरवलय के एक बिंदु पर एक स्पर्श रेखा, जो $2x + 3y = 6$ के लंबवत है, खींची जाती है। यदि यह स्पर्श रेखा, x- तथा y-अक्षों पर क्रमशः अंतःखंड a तथा b बनाती है, तो $|6a|+|5b|$ बराबर है _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 29 Question Id : 7155053800 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

The mean and standard deviation of the marks of 10 students were found to be 50 and 12 respectively. Later, it was observed that two marks 20 and 25 were wrongly read as 45 and 50 respectively. Then the correct variance is _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 29 Question Id : 7155053800 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

10 छात्रों के अंकों के माध्य तथा मानक विचलन क्रमशः 50 तथा 12 ज्ञात किए गए। बाद में यह देखा गया कि दो छात्रों के अंक 20 तथा 25 गलती से क्रमशः 45 तथा 50 पढ़े गए थे। तो सही प्रसरण है _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 30 Question Id : 7155053801 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

For $x \in (-1, 1]$, the number of solutions of the equation $\sin^{-1} x = 2 \tan^{-1} x$ is equal to _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 30 Question Id : 7155053801 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

$x \in (-1, 1]$ के लिए, समीकरण $\sin^{-1} x = 2 \tan^{-1} x$ के हलों की संख्या है _____.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Physics Section A

Section Id :	715505231
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 : 715505231

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 31 Question Id : 7155053802 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 equation $\left[X+\frac{a}{Y^2}\right][Y-b]=RT$, X is pressure, Y is volume, R is universal gas constant and T is temperature. The physical quantity equivalent to the ratio $\frac{a}{b}$ is:

Options :

71550512081. Energy

71550512082. Pressure gradient

71550512083. Impulse

71550512084. Coefficient of viscosity

Question Number : 31 Question Id : 7155053802 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 $\left[X+\frac{a}{Y^2}\right][Y-b]=RT$ में X दाब है, Y आयतन है, R सार्वत्रिक गैस नियतांक है और T तापमान है। अनुपात $\frac{a}{b}$ के तुल्य भौतिक राशि है:

Options :

71550512081. ऊर्जा

71550512082. दाब प्रवणता

71550512083. आवेग

71550512084. श्यानता गुणांक

Question Number : 32 Question Id : 7155053803 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 distance travelled by an object in time t is given by $s = (2{\cdot}5)t^2$. The instantaneous speed of the object at t = 5 s will be:

Options :

71550512085. $5\ ms^{-1}$

71550512086. $12.5\ ms^{-1}$

71550512087. $25\ ms^{-1}$

71550512088. $62.5\ ms^{-1}$

Question Number : 32 Question Id : 7155053803 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 वस्तु द्वारा t समय में तय की गई दूरी $s = (2{\cdot}5)t^2$ है। t = 5 s पर वस्तु की क्षणिक चाल होगी:

Options :

71550512085. $5\ ms^{-1}$

71550512086. $12.5\ ms^{-1}$

71550512087. $25\ ms^{-1}$

71550512088. $62.5\ ms^{-1}$

Question Number : 33 Question Id : 7155053804 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 passenger sitting in a train A moving at 90 km/h observes another train B moving in the opposite direction for 8 s. If the velocity of the train B is 54 km/h, then length of train B is:

Options :

71550512089. 80 m

71550512090. 120 m

71550512091. 200 m

71550512092. 320 m

Question Number : 33 Question Id : 7155053804 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

90 km/h से चलती हुई रेलगाड़ी A के अन्दर बैठा एक यात्री विपरीत दिशा में गतिमान दूसरी रेलगाड़ी B को 8s तक देखता है। यदि रेलगाड़ी B का वेग 54 km/h हो, तो रेलगाड़ी B की लम्बाई है:

Options :

71550512089. 80 m

71550512090. 120 m

71550512091. 200 m

71550512092. 320 m

Question Number : 34 Question Id : 7155053805 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 vehicle of mass 200 kg is moving along a levelled curved road of radius 70 m with angular velocity of 0.2 rad/s. The centripetal force acting on the vehicle is:

Options :

71550512093. 14 N

71550512094. 2240 N

71550512095. 560 N

71550512096. 2800 N

Question Number : 34 Question Id : 7155053805 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

200 kg द्रव्यमान का एक वाहन 0.2 rad/s के कोणीय वेग से 70 m त्रिज्या के समतल वक्रीय सड़क पर गति करता है। वाहन पर कार्यरत अभिकेन्द्र बल है:

Options :

71550512093. 14 N

71550512094. 2240 N

71550512095. 560 N

71550512096. 2800 N

Question Number : 35 Question Id : 7155053806 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 : For a planet, if the ratio of mass of the planet to its radius increases, the escape velocity from the planet also increases.

Statement II : Escape velocity is independent of the radius of the planet.

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

Options :

71550512097. Both Statement I and Statement II are correct

71550512098. Both Statement I and Statement II are incorrect

71550512099. Statement I is correct but statement II is incorrect

71550512100. Statement I is incorrect but statement II is correct

Question Number : 35 Question Id : 7155053806 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 दिये गये है:

कथन I : एक ग्रह के लिए, यदि ग्रह के द्रव्यमान का इसकी त्रिज्या के साथ अनुपात बढता है, ग्रह का पलायन वेग भी बढ़ता है।

कथन II : पलालन वेग ग्रह की त्रिज्या पर निर्भर नहीं करता है।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनिए:

Options :

71550512097. दोनो कथन I व कथन II सही हैं

71550512098. दोनों कथन I व कथन II गलत हैं

71550512099. कथन I सही है परन्तु कथन II गलत है

71550512100. कथन I गलत है परन्तु कथन II सही है

Question Number : 36 Question Id : 7155053807 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: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : A spherical body of radius (5 ± 0.1) mm having a particular density is falling through a liquid of constant density. The percentage error in the calculation of its terminal velocity is 4%.

Reason R : The terminal velocity of the spherical body falling through the liquid is inversely proportional to its radius.

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

Options :

71550512101. Both **A** and **R** are true and **R** is the correct explanation of **A**

71550512102. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

71550512103. A is true but **R** is false

71550512104. A is false but **R** is true

Question Number : 36 Question Id : 7155053807 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 दिये गये है: एक को **अभिकथन A** तथा दूसरे को **कारण R** से चिन्हित किया जाता है।

अभिकथन A : (5 ± 0.1) mm त्रिज्या एवं एक निश्चित घनत्व की एक गोलाकार वस्तु एक नियत घनत्व के द्रव में गिर रही है। इसके सीमान्त वेग की गणना में प्रतिशत त्रुटि 4% है।

कारण R : द्रव में गिरती हुई गोलाकार वस्तु का सीमान्त वेग इसकी त्रिज्या के व्युत्क्रमानुपाती होता है।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सही उत्तर चुनिए:

Options :

71550512101. दोनों **A** तथा **R** सही हैं एवं **R, A** की सही व्याख्या है

71550512102. दोनों **A** तथा **R** सही हैं परन्तु **R, A** की सही व्याख्या नहीं है

71550512103. **A** गलत है परन्तु **R** सही है

71550512104. **A** गलत है परन्तु **R** सही है

Question Number : 37 Question Id : 7155053808 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

Two planets A and B of radii R and 1.5 R have densities ρ and ρ/2 respectively.
The ratio of acceleration due to gravity at the surface of B to A is:

Options :

71550512105. 2:1

71550512106. 2:3

71550512107. 3:4

71550512108. 4:3

Question Number : 37 Question Id : 7155053808 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 व 1.5 R त्रिज्याओं के दो ग्रहों A व B के घनत्व क्रमश: ρ तथा ρ/2 हैं। B तथा A की सतह पर गुरुत्वीय त्वरण का अनुपात है:

Options :

71550512105. 2:1

71550512106. 2:3

71550512107. 3:4

71550512108. 4:3

Question Number : 38 Question Id : 7155053809 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 initial pressure and volume of an ideal gas are P_o and V_o. The final pressure of the gas when the gas is suddenly compressed to volume $\frac{V_o}{4}$ will be :
(Given γ = ratio of specific heats at constant pressure and at constant volume)

Options :

71550512109. P_o

71550512110. $4P_o$

71550512111. $P_o(4)^{\gamma}$

71550512112. $P_o(4)^{\frac{1}{\gamma}}$

Question Number : 38 Question Id : 7155053809 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 आदर्श गैस का प्रारम्भिक दाब तथा आयतन क्रमश: P_o तथा V_o हैं। जब गैस को अचानाक $\frac{V_o}{4}$ आयतन तर संपीड़ित किया गया हो तो गैस का अंतिम दाब होगा
(दिया है, γ = स्थिर दाब तथा स्थिर आयतन पर विशिष्ट ऊष्माओं का अनुपात):

Options :

71550512109. P_o

71550512110. $4P_o$

71550512111. $P_o(4)^{\gamma}$

71550512112. $P_o(4)^{\frac{1}{\gamma}}$

Question Number : 39 Question Id : 7155053810 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 mean free path of molecules of a certain gas at STP is 1500d, where d is the diameter of the gas molecules. While maintaining the standard pressure, the mean free path of the molecules at 373K is approximately:

Options :

71550512113. 1500d

71550512114. 750d

71550512115. 2049d

71550512116. 1098d

Question Number : 39 Question Id : 7155053810 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

परम ताप एवं दाब पर एक निश्चित गैस के अणुओं का माध्य मुक्त पथ 1500d है, जहाँ d गैस के अणुओं का व्यास है। दाब को मानक रखकर 373K पर अणुओं का माध्य मुक्त पथ लगभग है:

Options :

71550512113. 1500d

71550512114. 750d

71550512115. 2049d

71550512116. 1098d

Question Number : 40 Question Id : 7155053811 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 particle executes SHM of amplitude A. The distance from the mean position when its's kinetic energy becomes equal to its potential energy is:

Options :

71550512117. $2A$

71550512118. $\frac{1}{2}A$

71550512119. $\frac{1}{\sqrt{2}}A$

71550512120. $\sqrt{2A}$

Question Number : 40 Question Id : 7155053811 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 कण A आयाम की सरल आवर्त गति करता है। जब इसकी गतिज ऊर्जा स्थितिज ऊर्जा के बराबर हो जाती है तो मध्यमान स्थिति से इसकी दूरी है:

Options :

71550512117. $2A$

71550512118. $\frac{1}{2}A$

71550512119. $\frac{1}{\sqrt{2}}A$

71550512120. $\sqrt{2A}$

Question Number : 41 Question Id : 7155053812 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 10 μC charge is divided into two parts and placed at 1 cm distance so that the repulsive force between them is maximum. The charges of the two parts are:

Options :

71550512121. 8 μC, 2 μC

71550512122. 7 μC, 3 μC

71550512123. 5 μC, 5 μC

71550512124. 9 μC, 1 μC

Question Number : 41 Question Id : 7155053812 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 10 μC आवेश दो भागों में विभाजित किया जाता है तथा 1 cm की दूरी पर रख दिया जाता है ताकि इसके बीच प्रतिकर्षण बल अधिकतम हो। दोनों भागों के आवेश हैं:

Options :

71550512121. $8\mu C, 2\mu C$

71550512122. $7\mu C, 3\mu C$

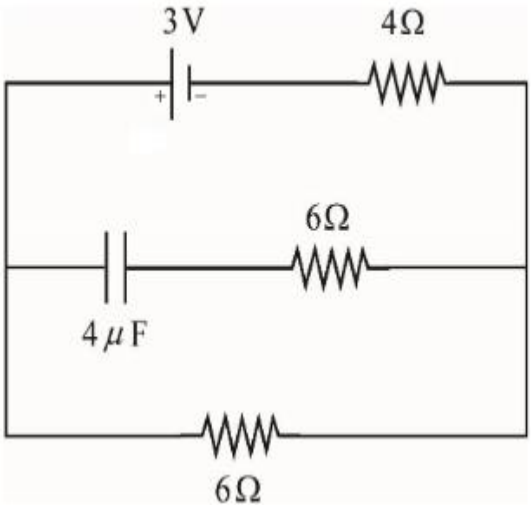
71550512123. $5\mu C, 5\mu C$

71550512124. $9\ \mu C, 1\ \mu C$

Question Number : 42 Question Id : 7155053813 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 network shown below, the charge accumulated in the capacitor in steady state will be:



Options :

71550512125. $10.3\ \mu C$

71550512126. $4.8\ \mu C$

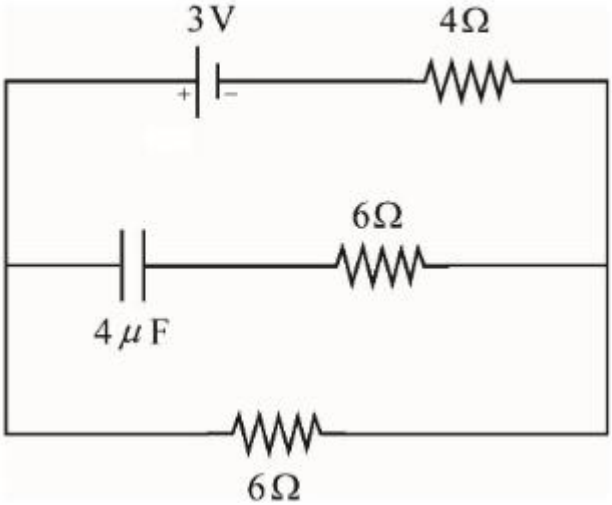
71550512127. $7.2\ \mu C$

71550512128. $12\ \mu C$

Question Number : 42 Question Id : 7155053813 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 प्रदर्शित नेटवर्क में, संधारित्र की स्थाई अवस्था में संचित आवेश होगा:



Options :

71550512125. $10.3\mu C$

71550512126. $4.8\mu C$

71550512127. $7.2\mu C$

71550512128. $12\mu C$

Question Number : 43 Question Id : 7155053814 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

An electron is moving along the positive x-axis. If the uniform magnetic field is applied parallel to the negative z-axis, then

A. The electron will experience magnetic force along positive y-axis
B. The electron will experience magnetic force along negative y-axis
C. The electron will not experience any force in magnetic field
D. The electron will continue to move along the positive x-axis
E. The electron will move along circular path in magnetic field

Choose the correct answer from the options given below:

Options :

71550512129. A and E only

71550512130. C and D only

71550512131. B and D only

71550512132. B and E only

Question Number : 43 Question Id : 7155053814 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 इलैक्ट्रान धनात्मक x-अक्ष के अनुदिश गति कर रहा है। यदि गतिमान आवेश पर ऋणात्मक z-अक्ष के समान्तर एकसमान चुम्बकीय क्षेत्र आरोपित किया जाता हैं, तब

A. इलैक्ट्रॉन धनात्मक y-अक्ष के अनुदिश चुम्बकीय बल का अनुभव करेगा
B. इलैक्ट्रॉन ऋणात्मक y-अक्ष के अनुदिश चुम्बकीय बल का अनुभव करेगा
C. इलैक्ट्रॉन चुम्बकीय क्षेत्र में किसी बल का अनुभव नही करेगा
D. इलैक्ट्रॉन धनात्मक x-अक्ष के अनुदिश लगातार गति करेगा
E. इलैक्ट्रॉन चुम्बकीय क्षेत्र में वृत्ताकार पथ पर गति करेगा

नीचे दिये गये विकल्पों से सही उत्तर चुनिए:

Options :

71550512129. केवल A तथा E

71550512130.

केवल C तथा D

71550512131. केवल B तथा D

71550512132. केवल B तथा E

Question Number : 44 Question Id : 7155053815 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 : An AC circuit undergoes electrical resonance if it contains either a capacitor or an inductor.

Statement II : An AC circuit containing a pure capacitor or a pure inductor consumes high power due to its non-zero power factor.

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

Options :

71550512133. Both Statement I and Statement II are true

71550512134. Both Statement I and Statement II are false

71550512135. Statement I is true but statement II is false

71550512136. Statement I is false but statement II is true

Question Number : 44 Question Id : 7155053815 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 दिये गये है:

कथन I : एक प्रत्यावर्ती परिपथ तब वैद्युत अनुनाद करता है यदि इसमें या तो एक संधारित्र या एक प्रेरक लगा हो।

कथन II : एक संधारित्र या शुद्ध प्रेरक लगा हुआ एक प्रत्यावर्ती परिपथ अपने अशून्य शक्ति गुणांक के कारण अधिक शक्ति की खपत करता है।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सही उत्तर चुनिए:

Options :

71550512133. दोनों कथन I व कथन II सही हैं

71550512134. दोनों I व दोनों II गलत हैं

71550512135. कथन I सही है परन्तु कथन II गलत है

71550512136. कथन I गलत है परन्तु कथन II सही है

Question Number : 45 Question Id : 7155053816 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 electromagnetic wave, at an instant and at a particular position, the electric field is along the negative z-axis and magnetic field is along the positive x-axis. Then the direction of propagation of electromagnetic wave is:

Options :

71550512137. positive y-axis

71550512138. negative y-axis

71550512139. positive z-axis

71550512140. at 45° angle from positive y-axis

Question Number : 45 Question Id : 7155053816 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 वैद्युतचंबकीय तरंग के लिए किसी क्षण एक निश्चित स्थान पर, विद्युत क्षेत्र ऋणात्मक z-अक्ष के अनुदिश तथा चुम्बकीय क्षेत्र धनात्मक x-अक्ष के अनुदिश है। तब वैद्युतचंबकीय तरंग के संरचण की दिशा है:

Options :

71550512137. धनात्मक y-अक्ष

71550512138. ऋणात्मक y-अक्ष

71550512139. धनात्मक z-अक्ष

71550512140. धनात्मक y-अक्ष से 45° के कोण पर

Question Number : 46 Question Id : 7155053817 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 a Young's double slits experiment, the ratio of amplitude of light coming from slits is 2:1. The ratio of the maximum to minimum intensity in the interference pattern is:

Options :

71550512141. 2:1

71550512142. 9:4

71550512143. 9:1

71550512144. 25:9

Question Number : 46 Question Id : 7155053817 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 यंग के द्विझिरी प्रयोग में, झिरियों से आने वाले प्रकाश के आयाम का अनुपात 2:1 है। व्यतिकरण पैटर्न में अधिकतम तथा न्यूनतम तीव्रताओं का अनुपात है:

Options :

71550512141. 2:1

71550512142. 9:4

71550512143. 9:1

71550512144. 25:9

Question Number : 47 Question Id : 7155053818 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 : Out of microwaves, infrared rays and ultraviolet rays, ultraviolet rays are the most effective for the emission of electrons from a metallic surface.

Statement II : Above the threshold frequency, the maximum kinetic energy of photoelectrons is inversely proportional to the frequency of the incident light.

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

Options :

71550512145. Both Statement I and Statement II are true

71550512146. Both Statement I and Statement II are false

71550512147. Statement I is true but statement II is false

71550512148. Statement I is false but statement II is true

Question Number : 47 Question Id : 7155053818 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 दिये कथन दिये गये है:

कथन I : एक धात्वीय सतह से इलैक्ट्रॉनों के उत्सर्जन के लिए सूक्ष्म तरंगों, अवरक्त किरणों तथा पराबैंगनी किरणों में से पराबैंगनी किरणें अधिक प्रभावी होती है।

कथन II : देहली आवृत्ति के ऊपर, फोटो इलैक्ट्रॉनों की अधिकतम गतिज ऊर्जा आपतित प्रकाश की आवृति के व्युत्क्रमानुपाती होती है।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सही उत्तर चुनिए:

Options :

71550512145. दोनों कथन I व कथन II सही हैं

71550512146. दोनों कथन I व कथन II गलत हैं

71550512147. कथन I सही है परन्तु कथन II गलत है

71550512148. कथन I गलत है परन्तु कथन II सही है

Question Number : 48 Question Id : 7155053819 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: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : The binding energy per nucleon is practically independent of the atomic number for nuclei of mass number in the range 30 to 170.

Reason R : Nuclear force is short ranged.

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

Options :

71550512149. Both **A** and **R** are true and **R** is the correct explanation of **A**

71550512150. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

71550512151. A is true but **R** is false

71550512152. A is false but **R** is true

Question Number : 48 Question Id : 7155053819 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 दिये गये है: एक को **अभिकथन A** तथा दूसरे को **कारण R** से चिन्हित किया गया है।

अभिकथन A : द्रव्यमान संख्या 30 से 170 के बीच वाले नाभिकों के लिए प्रति न्यूक्लियॉन बन्धन ऊर्जा आमतौर पर परमाणु संख्या पर निर्भर नहीं करता है।

कारण R : नाभिकीय बल सूक्ष्म परास के होते हैं।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सही उत्तर चुनिए:

Options :

71550512149. दोनों **A** तथा **R** सही हैं एवं **R, A** की सही व्याख्या है

71550512150. दोनों **A** तथा **R** सही हैं परन्तु **R, A** की सही व्याख्या नहीं है

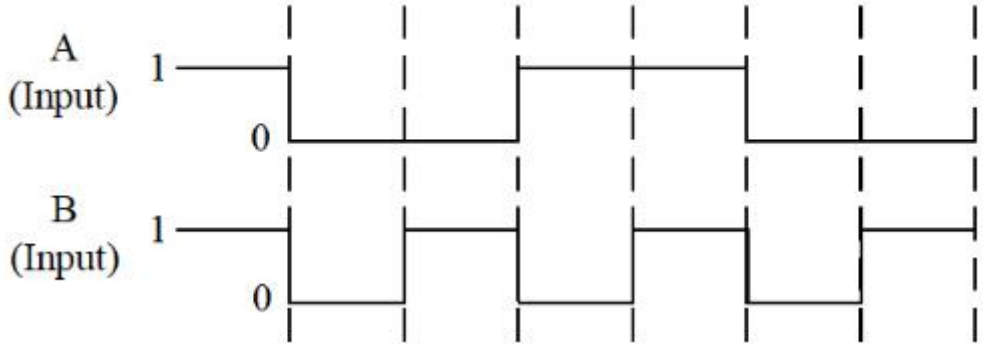
71550512151. **A** सही है परन्तु **R** गलत है

71550512152. **A** गलत है परन्तु **R** सही है

Question Number : 49 Question Id : 7155053820 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

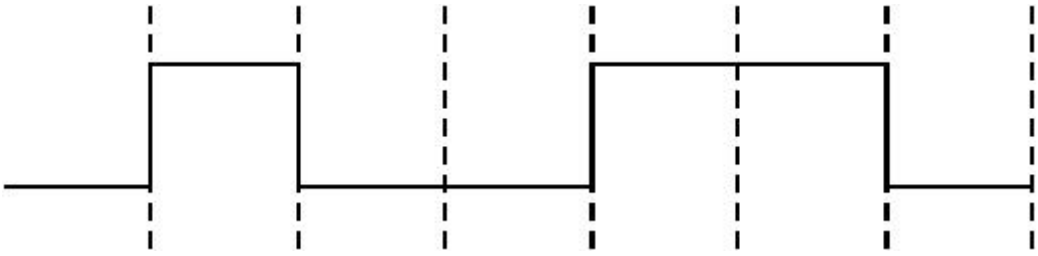
Correct Marks : 4 Wrong Marks : 1

The output from a NAND gate having inputs A and B given below will be,

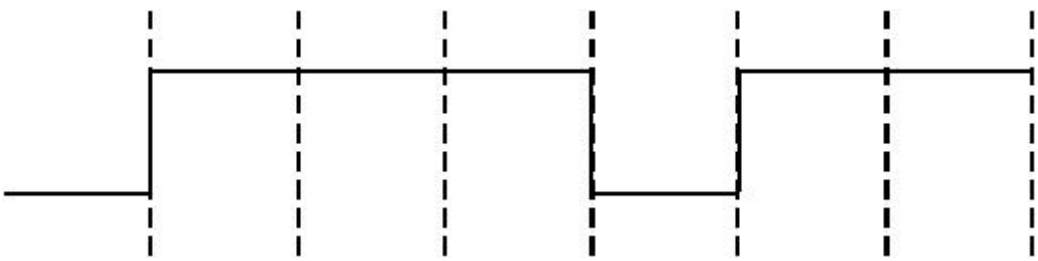


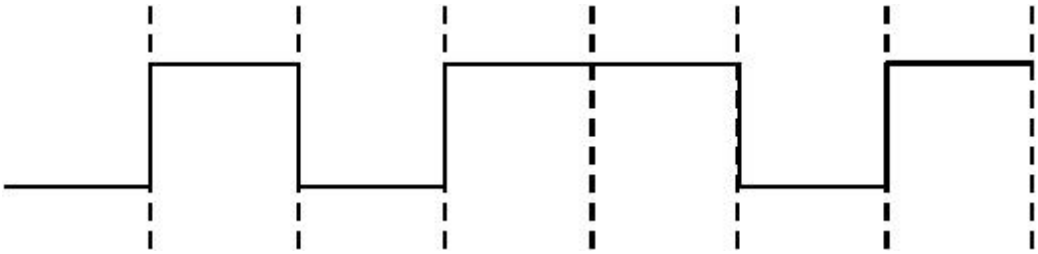
Options :

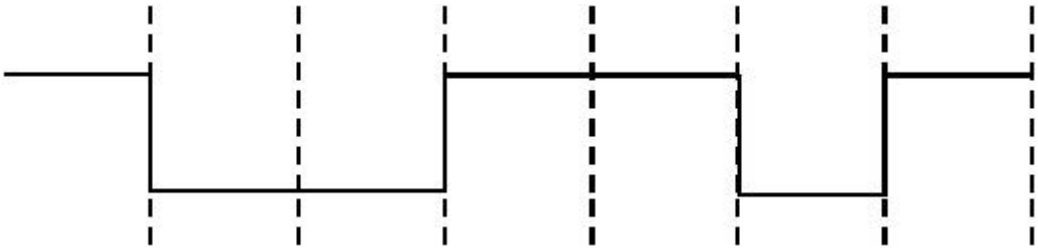
71550512153.



71550512154.



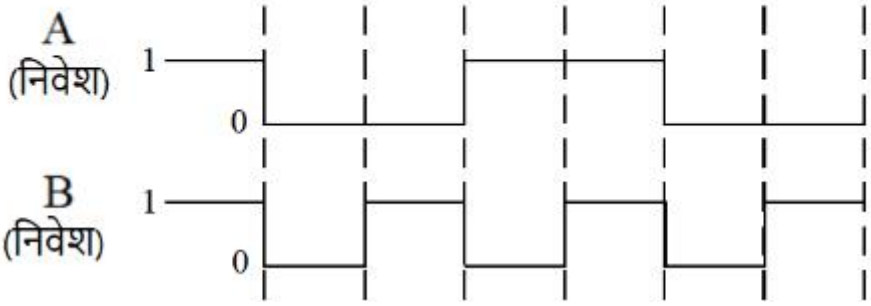
71550512155. 

71550512156. 

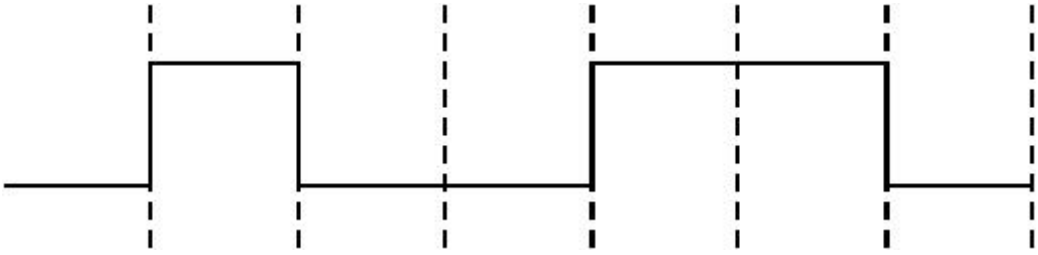
Question Number : 49 Question Id : 7155053820 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

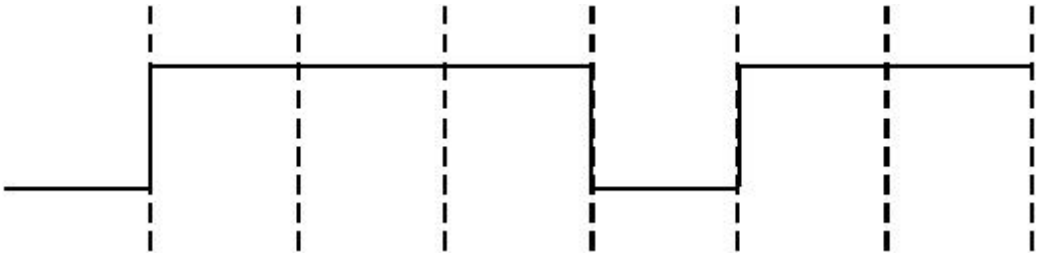
A तथा B निवेशों वाले NAND गेट से प्राप्त निर्गत तरंग रुप निम्न में से होगा:

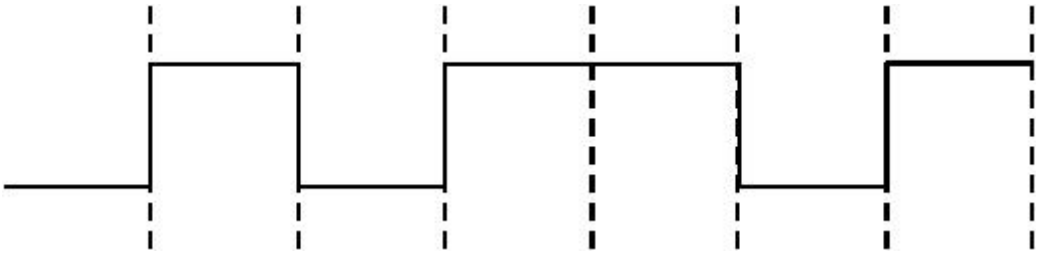


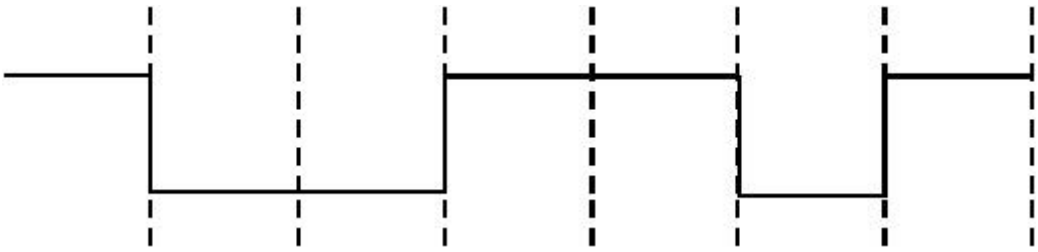
Options :

71550512153. 

71550512154.



71550512155. 

71550512156. 

Question Number : 50 Question Id : 7155053821 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 radiate EM signal of wavelength λ with high efficiency, the antennas should have a minimum size equal to :

Options :

71550512157. 2λ

71550512158. λ

71550512159. $\frac{\lambda}{2}$

71550512160. $\frac{\lambda}{4}$

Question Number : 50 Question Id : 7155053821 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

उच्च दक्षता से λ तरंगदैर्ध्य के सिग्नल को सुचाई रुप से विकरित करने के लिए ऐंटेना का न्युनत्तम आकार होना चाहिए:

Options :

71550512157. 2λ

71550512158. λ

71550512159. $\frac{\lambda}{2}$

71550512160. $\frac{\lambda}{4}$

Physics Section B

Section Id :	715505232
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 : 715505232

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 51 Question Id : 7155053822 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

A car accelerates from rest to u m/s. The energy spent in this process is E J. The energy required to accelerate the car from u m/s to 2u m/s is nE J. The value of n is _____ .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 51 Question Id : 7155053822 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

एक कार विराम से u m/s तक त्वरित होती है। इस प्रक्रिया में व्यय ऊर्जा E जूल है। कार को u m/s से 2u m/s तक त्वरित होने के लिए आवश्यक ऊर्जा nE जूल है। n का मान _____ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 52 Question Id : 7155053823 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

A light rope is wound around a hollow cylinder of mass 5 kg and radius 70 cm. The rope is pulled with a force of 52.5 N. The angular acceleration of the cylinder will be _____ rad s^{-2}.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 52 Question Id : 7155053823 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

5 kg तथा 70 cm त्रिज्या के एक खोखले बेलन पर एक हल्की डोरी लपेटी है। डोरी को 52.5 N बल से खींचा जाता है। बेलन का कोणीय त्वरण _____ rad s^{-2} होगा।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 53 Question Id : 7155053824 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Two plates A and B have thermal conductivities 84 $Wm^{-1}K^{-1}$ and 126 $Wm^{-1}K^{-1}$ respectively. They have same surface area and same thickness. They are placed in contact along their surfaces. If the temperatures of the outer surfaces of A and B are kept at 100 ℃ and 0 ℃ respectively, then the temperature of the surface of contact in steady state is _____ ℃.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 53 Question Id : 7155053824 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

दो प्लेटों A व B की ऊष्मा चलाकताएं क्रमश: 84 $Wm^{-1}K^{-1}$ तथा 126 $Wm^{-1}K^{-1}$ हैं। उनकी मोटाई व पृष्ठ क्षेत्रफल एक समान हैं। वे अपने तलों के साथ संपर्क में रखी हैं। यदि A व B के बाहरी तलों का तापमान क्रमश: 100 ℃ तथा 0 ℃ । स्थाई अवस्था में संपर्क तल का तापमान _____ ℃ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 54 Question Id : 7155053825 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 experiment with sonometer when a mass of 180 g is attached to the string, it vibrates with fundamental frequency of 30 Hz. When a mass m is attached, the string vibrates with fundamental frequency of 50 Hz. The value of m is _____ g.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 54 Question Id : 7155053825 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

एक सोनोमीटर प्रयोग में जब डोरी से 180 g का एक द्रव्यमान बाँधा गया है, यह 30 Hz की मूल आवृत्ति के कम्पन्न करती है। जब m द्रव्यमान बँधा हो तब डोरी 50 Hz की मूल आवृत्ति से कम्पन्न करती है। m का मान _____ g है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

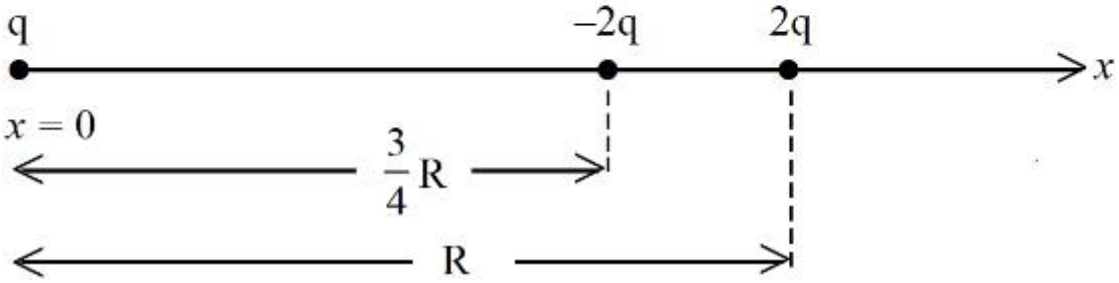
10

Question Number : 55 Question Id : 7155053826 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Three point charges q, –2q and 2q are placed on x-axis at a distance $x = 0$, $x = \frac{3}{4}R$ and $x = R$ respectively from origin as shown. If $q = 2 \times 10^{-6}$ C and R = 2 cm, the magnitude of net force experienced by the charge –2q is _____ N.



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

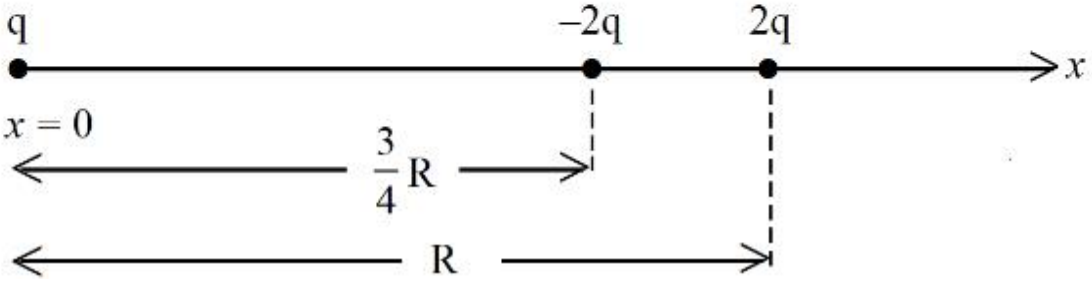
10

Question Number : 55 Question Id : 7155053826 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

तीन बिन्दु आवेश q, –2q तथा 2q x-अक्ष पर मूल बिन्दु से क्रमश: $x = 0$, $x = \frac{3}{4}R$ एवं $x = R$ दूरी पर रखे हैं जैसा कि चित्र में दिखाया गया है। यदि $q = 2 \times 10^{-6}$ C एवं R = 2 cm, –2q आवेश द्वारा परिणामी बल का परिमाण _____ N है।



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

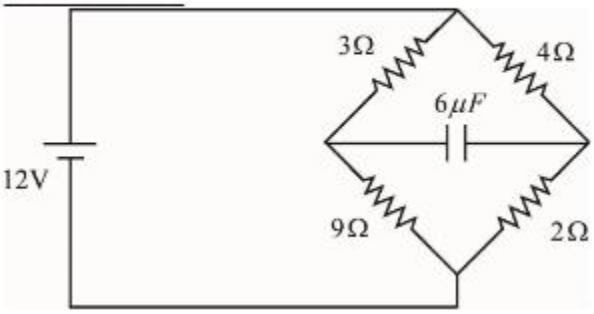
10

Question Number : 56 Question Id : 7155053827 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

In the circuit shown, the energy stored in the capacitor is n μJ. The value of n is



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

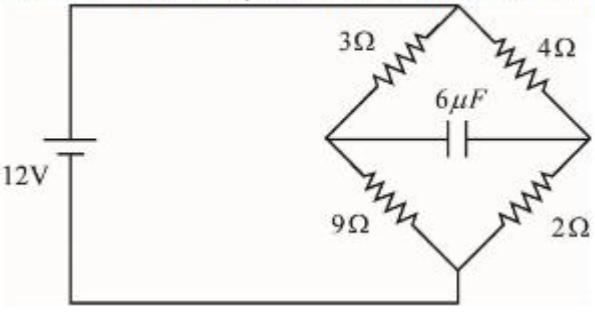
10

Question Number : 56 Question Id : 7155053827 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

प्रदर्शित परिपथ में, संधारित्र में संचित ऊर्जा n μJ है। n का मान _____ है।



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 57 Question Id : 7155053828 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

A straight wire AB of mass 40 g and length 50 cm is suspended by a pair of flexible leads in uniform magnetic field of magnitude 0.40 T as shown in the figure. The magnitude of the current required in the wire to remove the tension in the supporting leads is _____ A. (Take g = 10 ms^{-2}).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

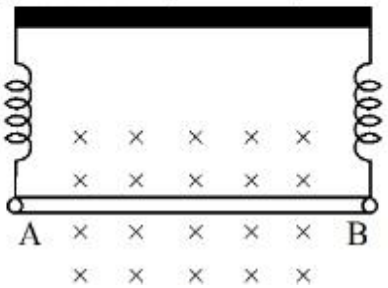
10

Question Number : 57 Question Id : 7155053828 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

40 g द्रव्यमान तथा 50 cm लम्बाई का एक सीधा तार AB को एक जोडी लचीले तार द्वारा 0.40 T परिमाण के एकसमान चुम्बकीय क्षेत्र में प्रदर्शित चित्र अनुसार लटकाया गया है। आधार से लगी लीडों का तनाव खत्म करने के लिए तार में आवश्यक की धारा का परिमाण _____ A होगा. (दिया है $g = 10\ ms^{-2}$).



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 58 Question Id : 7155053829 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

An insulated copper wire of 100 turns is wrapped around a wooden cylindrical core of the cross-sectional area 24 cm^2. The two ends of the wire are connected to a resistor. The total resistance in the circuit is 12Ω. If an externally applied uniform magnetic field in the core along its axis changes from 1.5 T in one direction to 1.5 T in the opposite direction, the charge flowing through a point in the circuit during the change of magnetic field will be _____ mC.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 58 Question Id : 7155053829 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

एक अचालक कॉपर तार के 100 फेरों को 24 cm^2 अनुप्रस्थ परिच्छेद क्षेत्रफल के एक बेलनाकार कोर पर लपेटा गया है। तार के दोनों सिरे एक प्रतिरोध से जुड़े है। परिपथ का कुल प्रतिरोध 12Ω है। यदि कोर में इसकी अक्ष के अनुदिश एक बाह्य आरोपित एकसमान चुम्बकीय क्षेत्र 1.5 T एक दिशा से दूसरी दिशा में 1.5 T परिवर्तित होता है। इस परिवर्तन के दौरान परिपथ में किसी बिन्दु से गुजरने वाला आवेश _____ mC होगा।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 59 Question Id : 7155053830 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

A bi convex lens of focal length 10 cm is cut in two identical parts along a plane perpendicular to the principal axis. The power of each lens after cut is _____ D.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 59 Question Id : 7155053830 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

10 सेमी. फोकस दूरी वाले एक द्विउत्तल लैंस को मुख्य अक्ष के लम्बवत तल में दो एकसमान भागों में विभाजित किया जाता है। विभाजन के बाद प्रत्येक लैंस की क्षमता _____ D है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 60 Question Id : 7155053831 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

An atom absorbs a photon of wavelength 500 nm and emits another photon of wavelength 600 nm. The net energy absorbed by the atom in this process is $n \times 10^{-4}$eV. The value of n is _____.
[Assume the atom to be stationary during the absorption and emission process]
(Take $h = 6.6 \times 10^{-34}$Js and $c = 3 \times 10^{8}$ m/s).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 60 Question Id : 7155053831 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

एक परमाणु 500 nm तरंगदैर्ध्य का एक फोटान अवशोषिक करता है तथा 600 nm का दूसरा फोटान उत्सर्जित करता है। इस प्रक्रिया में परमाणु द्वारा कुल अवशोषित ऊर्जा $(n \times 10^{-4} eV)$ है। n का मान _____ है।
जबकि अवशोषन तथा ऊत्सर्जन के दौरान परमाणु को स्थाई माना है
(दिया है : $h = 6.6 \times 10^{-34} Js$ एवं $c = 3 \times 10^{8}$ m/s)।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Chemistry Section A

Section Id :	715505233
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 :	715505233
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 61 Question Id : 7155053832 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 : SO_2 and H_2O both possess V-shaped structure.
Statement II : The bond angle of SO_2 is less than that of H_2O.
In the light of the above statements, choose the most appropriate answer from the options given below:

Options :

71550512171. Both Statement I and Statement II are correct

71550512172. Both Statement I and Statement II are incorrect

71550512173. Statement I is correct but Statement II is incorrect

71550512174. Statement I is incorrect but Statement II is correct

Question Number : 61 Question Id : 7155053832 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 :

कथन I : SO_2 और H_2O दोनों की संरचना V-आकार की है।
कथन II : SO_2 का आबंध कोण H_2O से कम होता है।
उपरोक्त कथनों के आधार पर नीचे दिये गये विकल्पों में से सबसे उचित उत्तर को चुनें।

Options :

71550512171. कथन I और II दोनों सत्य है।

71550512172. कथन I और II दोनों असत्य है

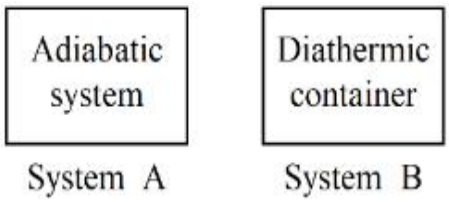
71550512173. कथन I और II दोनों असत्य है

71550512174. कथन I सत्य है परन्तु कथन II असत्य है

Question Number : 62 Question Id : 7155053833 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

What happens when methane undergoes combustion in systems A and B respectively?



Options :

71550512175.

System A	System B
Temperature rises	Temperature remains same

71550512176.

System A	System B
Temperature remains same	Temperature rises

71550512177.

System A	System B
Temperature falls	Temperature rises

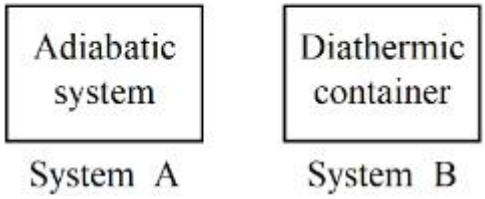
71550512178.

System A	System B
Temperature falls	Temperature remains same

Question Number : 62 Question Id : 7155053833 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

क्या होता है जब मेथेन निकाय A और B में क्रमश: दहन करती है?



Options :

71550512175.

निकाय A	निकाय B
तापमान में वृद्धि होगी	तापमान समान रहेगा

71550512176.

निकाय A	निकाय B
तापमान समान होगा	तापमान में वृद्धि होगी

71550512177.

निकाय A	निकाय B
तापमान में गिरावट होगी	तापमान में वृद्धि होगी

71550512178.

निकाय A	निकाय B
तापमान में गिरावट होगी	तापमान समान रहेगा

Question Number : 63 Question Id : 7155053834 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, one is labelled as **Assertion A** and the other is labelled as **Reason R.**

Assertion A : The diameter of colloidal particles in solution should not be much smaller than wavelength of light to show Tyndall effect.

Reason R : The light scatters in all directions when the size of particles is large enough.

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

Options :

71550512179. Both A and R are correct and R is the correct explanation of A

71550512180. Both A and R are correct but R is NOT the correct explanation of A

71550512181. A is true but R is false

71550512182. A is false but R is true

Question Number : 63 Question Id : 7155053834 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, one is labelled as **Assertion A** and the other is labelled as **Reason R.**

अभिकथन A : टिन्डल प्रभाव दिखाने के लिए विलयन में कोलॉइडी कणों का व्यास प्रकाश की तरंग-दैर्ध्य से बहुत कम नहीं होना चाहिए।

कारण R : जब कणों का आकार पर्याप्त बड़ा होता है तब प्रकाश का प्रकीर्णन सभी दिशाओं में होता है।

उपरोक्त कथन के आधार पर नीचे दिये गये विकल्पों से सही उत्तर को चुनें:

Options :

71550512179. A और R दोनों सत्य है और R, A की सही व्याख्या करता है।

71550512180. A और R दोनों सही है परन्तु R, A की सही व्याख्या नही है।

71550512181. A सत्य है परन्तु R असत्य है।

71550512182. A असत्य है परन्तु R सत्य है।

Question Number : 64 Question Id : 7155053835 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 covalency and oxidation state respectively of boron in $[BF_4]^-$, are

Options :

71550512183. 4 and 4

71550512184. 4 and 3

71550512185. 3 and 4

71550512186. 3 and 5

Question Number : 64 Question Id : 7155053835 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

बोरोन की सहसंयोजकता और ऑक्सीकरण अवस्था $[BF_4]^-$ में क्रमश: है

Options :

71550512183. 4 और 4

71550512184. 4 और 3

71550512185. 3 और 4

71550512186. 3 और 5

Question Number : 65 Question Id : 7155053836 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 related to Ellingham diagram:

Statement I : Ellingham diagrams can be constructed for formation of oxides, sulfides and halides of metals.

Statement II : It consists of plots of $\Delta_f H^0$ vs T for formation of oxides of elements.

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

Options :

71550512187. Both Statement I and Statement II are correct

71550512188. Both Statement I and Statement II are incorrect

71550512189. Statement I is correct but Statement II is incorrect

71550512190. Statement I is incorrect but Statement II is correct

Question Number : 65 Question Id : 7155053836 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 :

कथन I : एलिंघम आलेख को धातुओं के ऑक्साइडों सल्फाइडों और हैलाइडों के बनने के लिए बनाया जा सकता है।

कथन II : यह तत्वों के ऑक्सइडों के बनने के लिए $\Delta_f H^0$ और T के मध्य आलेख है।

उपरोक्त कथनों के आधार पर नीचे दिये गये विकल्पों में से सबसे उचित उत्तर को चुनें।

Options :

71550512187. कथन I और II दोनों सत्य है

71550512188. कथन I और II दोनों असत्या है

71550512189. कथन I सत्य है परन्तु कथन II असत्य है

71550512190. कथन I असत्य है परन्तु कथन II सत्य है

Question Number : 66 Question Id : 7155053837 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, one is labelled as **Assertion A** and the other is labelled as **Reason R.**

Assertion A : Isotopes of hydrogen have almost same chemical properties, but difference in their rates of reaction.

Reason R : Isotopes of hydrogen have different enthalpy of bond dissociation.

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

Options :

71550512191. Both A and R are correct and R is the correct explanation of A

71550512192. Both A and R are correct but R is NOT the correct explanation of A

71550512193. A is correct but R is not correct

71550512194. A is not correct but R is correct

Question Number : 66 Question Id : 7155053837 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, one is labelled as **Assertion A** and the other is labelled as **Reason R.**

अभिकथन A : हाइड्रोजन के समस्थानिकों के लगभग समान रासायनिक गुणधर्म होते हैं परन्तु अभिक्रिया की दर अलग-अलग होती है।

कारण R : हाइड्रोजन के समस्थानिकों की आबंध वियोजन एन्थैल्पी अलग-अलग होती है।

उपरोक्त कथनों के आधार पर नीचे दिये गये विकल्पों में सबसे उचित उत्तर को चुनें।

Options :

71550512191. A और R दोनों सही है और R, A की सही व्याख्या है

71550512192. A और R दोनों सही है और R, A की सही व्याख्या नहीं हैं

71550512193. A सही है परन्तु R असत्य है

71550512194. A व्याख्या है परन्तु R सही है

Question Number : 67 Question Id : 7155053838 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

Better method for preparation of BeF_2, among the following is

Options :

71550512195. $Be + F_2 \xrightarrow{\Delta} BeF_2$

71550512196. $(NH_4)_2BeF_4 \xrightarrow{\Delta} BeF_2$

71550512197. $BeO + C + F_2 \xrightarrow{\Delta} BeF_2$

71550512198. $BeH_2 + F_2 \xrightarrow{\Delta} BeF_2$

Question Number : 67 Question Id : 7155053838 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 BeF_2 बनाने का सबसे अच्छा तरीका है:

Options :

71550512195. $Be + F_2 \xrightarrow{\Delta} BeF_2$

71550512196. $(NH_4)_2BeF_4 \xrightarrow{\Delta} BeF_2$

71550512197. $BeO + C + F_2 \xrightarrow{\Delta} BeF_2$

71550512198. $BeH_2 + F_2 \xrightarrow{\Delta} BeF_2$

Question Number : 68 Question Id : 7155053839 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

Identify the correct order of standard enthalpy of formation of sodium halides.

Options :

71550512199. $NaF < NaCl < NaBr < NaI$

71550512200. $NaI < NaBr < NaCl < NaF$

71550512201. $NaI < NaBr < NaF < NaCl$

71550512202. $NaCl < NaF < NaBr < NaI$

Question Number : 68 Question Id : 7155053839 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

सोडियम हैलाइडों के लिए मानक विरचन एन्थैल्पी के सही क्रम को पहचानें।

Options :

71550512199. $NaF < NaCl < NaBr < NaI$

71550512200. $NaI < NaBr < NaCl < NaF$

71550512201. $NaI < NaBr < NaF < NaCl$

71550512202. $NaCl < NaF < NaBr < NaI$

Question Number : 69 Question Id : 7155053840 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 correct group of halide ions which can be oxidised by oxygen in acidic medium is

Options :

71550512203. Br^- and I^- only

71550512204. Cl^-, Br^- and I^- only

71550512205. I^- only

71550512206. Br^- only

Question Number : 69 Question Id : 7155053840 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

हैलाइड आयनों का सही वर्ग है जोकि आक्सीजन के द्वारा अम्लीय माध्यम में आक्सीकृत किया जा सकता है

Options :

71550512203. केवल Br^- और I^-

71550512204. केवल Cl^-, Br^- और I^-

71550512205. केवल I^-

71550512206. केवल Br^-

Question Number : 70 Question Id : 7155053841 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 complexes will exhibit maximum attraction to an applied magnetic field?

Options :

71550512207. $[Co\ (en)_3]^{3+}$

71550512208. $[Co\ (H_2O)_6]^{2+}$

71550512209. $[Zn\ (H_2O)_6]^{2+}$

71550512210. $[Ni\ (H_2O)_6]^{2+}$

Question Number : 70 Question Id : 7155053841 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 संकुल चुंबकीय क्षेत्र में सर्वाधिक आर्कषित होगा?

Options :

71550512207. $[Co\ (en)_3]^{3+}$

71550512208. $[Co\ (H_2O)_6]^{2+}$

71550512209. $[Zn\ (H_2O)_6]^{2+}$

71550512210. $[Ni\ (H_2O)_6]^{2+}$

Question Number : 71 Question Id : 7155053842 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 are the Green house gases?

A. Water vapour
B. Ozone
C. I_2
D. Molecular hydrogen

Choose the most appropriate answer from the options given below:

Options :

71550512211. A and B only

71550512212. A and D only

71550512213. C and D only

71550512214. B and C only

Question Number : 71 Question Id : 7155053842 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-कौन हरितगृह गैसें हैं?

A. जल वाष्प
B. ओजोन
C. I_2
D. आणविक हाइड्रोजन

नीचे दिये गये विकल्पों में से सबसे उचित को चुनें:

Options :

71550512211. केवल A और B

71550512212. केवल A और D

71550512213. केवल C और D

71550512214. केवल B और C

Question Number : 72 Question Id : 7155053843 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 total number of stereoisomers for the complex $[Cr(ox)_2ClBr]^{3-}$ (where ox = oxalate) is:

Options :

71550512215. 2

71550512216. 3

71550512217. 4

71550512218. 1

Question Number : 72 Question Id : 7155053843 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

संकुल $[Cr(ox)_2ClBr]^{3-}$ (जहाँ ox = ऑक्सेलेट) के लिए कुल विविक समावयवों:

Options :

71550512215. 2

71550512216. 3

71550512217. 4

71550512218. 1

Question Number : 73 Question Id : 7155053844 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 wet tests for detection of various cations by precipitation, Ba^{2+} cations are detected by obtaining precipitate of

Options :

71550512219. $BaSO_4$

71550512220. $Ba(OAc)_2$

71550512221. $BaCO_3$

71550512222. Ba(ox) : Barium oxalate

Question Number : 73 Question Id : 7155053844 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

विभिन्न धनायनों को अवक्षेपण द्वारा पता लगाने के नम परिक्षणों में Ba^{2+} धनायन को - के अवक्षेप द्वारा पहचाना जाता है:

Options :

71550512219. $BaSO_4$

71550512220. $Ba(OAc)_2$

71550512221. $BaCO_3$

71550512222. Ba(ox) : Barium oxalate

Question Number : 74 Question Id : 7155053845 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 : Tropolone is an aromatic compound and has 8 π electrons.

Statement II : π electrons of >C = O group in tropolone is involved in aromaticity.

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

Options :

71550512223. Both Statement I and Statement II are true

71550512224. Both Statement I and Statement II are false

71550512225. Statement I is true but Statement II is false

71550512226. Statement I is false but Statement II is true

Question Number : 74 Question Id : 7155053845 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

कथन I : ट्रोपोलोन एक ऐरोमैटिक यौगिर है और इसमें 8 π इलेक्ट्रान होते हैं।

कथन II : >C = 0 समूह के π इलेक्ट्रान ऐरोमैटिसिटी में भाग लेते हैं।

उपरोक्त कथनों के आधार पर नीचे दिये गये विकल्पों में से सही उत्तर को पहचानें:

Options :

71550512223. कथन I और कथन II सत्य हैं

71550512224. कथन I और II असत्य है

71550512225. कथन I सत्य है परन्तु कथन II असत्य है

71550512226. कथन I असत्य है परन्तु कथन II सत्य है

Question Number : 75 Question Id : 7155053846 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

1 - Bromopropane is reacted with reagents in List I to give product in List II

LIST I - Reagent		LIST II - Product	
A.	KOH (alc)	I.	Nitrile
B.	KCN (alc)	II.	Ester
C.	$AgNO_2$	III.	Alkene
D.	$H_3CCOOAg$	IV.	Nitroalkane

Choose the correct answer from the options given below:

Options :

71550512227. A-IV, B-III, C-II, D-I

71550512228. A-III, B-I, C-IV, D-II

71550512229. A-I, B-III, C-IV, D-II

71550512230. A-I, B-II, C-III, D-IV

Question Number : 75 Question Id : 7155053846 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 को II से सुमेलित करें:
1 - ब्रोमोप्रोपेन सूची I के अभिकर्मक से अभिक्रिया करके सूची II का उत्पाद देता है

सूची I - अभिकर्मक		सूची II - उत्पाद	
A.	KOH (alc)	I.	नाइट्राइल
B.	KCN (alc)	II.	एस्टर
C.	$AgNO_2$	III.	एल्कीन
D.	$H_3CCOOAg$	IV.	नाइट्रोऐल्केन

नीचे दिये गये विकल्पों में से सही उत्तर को चुनें:

Options :

71550512227. A-IV, B-III, C-II, D-I

71550512228. A-III, B-I, C-IV, D-II

71550512229. A-I, B-III, C-IV, D-II

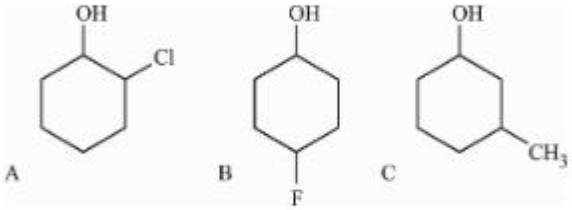
71550512230. A-I, B-II, C-III, D-IV

Question Number : 76 Question Id : 7155053847 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, one is labelled as **Assertion A** and the other is labelled as **Reason R.**

Assertion A : Order of acidic nature of the following compounds is A > B > C.



Reason R : Fluoro is a stronger electron withdrawing group than Chloro group.

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

Options :

71550512231. Both A and R are correct and R is the correct explanation of A

71550512232. Both A and R are correct but R is NOT the correct explanation of A

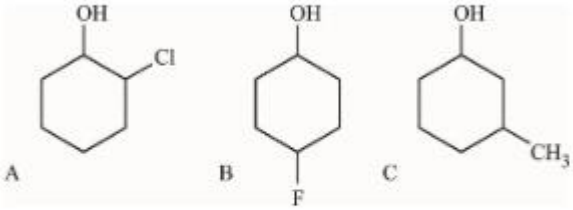
71550512233. A is true but R is false

71550512234. A is false but R is true

Question Number : 76 Question Id : 7155053847 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

अभिकथन A : निम्नलिखित यौगिकों की अम्लीयता का क्रम है A > B > C



कारण R : फ्लोरो क्लोरो से ज्यादा प्रबल इलेक्ट्रान - आक्रर्षी समूह है

उपरोक्त कथनों के आधार पर नीच दिये गये विकल्पों में से सही उत्तर को चुने:

Options :

71550512231. A और R दोनों सही है और R, A की सही व्याख्या है

71550512232. A और R दोनों सही है लेकिन R, A की सही व्याख्या नहीं है

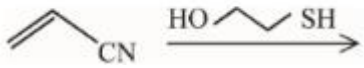
71550512233. A सही है परन्तु R गलत है

71550512234. A सही नहीं है परन्तु R सही है

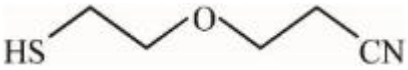
Question Number : 77 Question Id : 7155053848 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

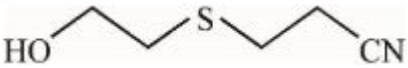
Correct Marks : 4 Wrong Marks : 1

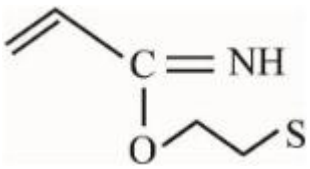
The major product for the following reaction is:

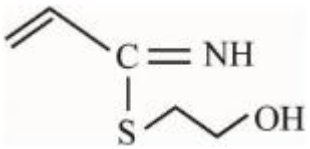


Options :

71550512235. 

71550512236. 

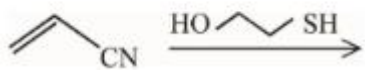
71550512237. 

71550512238. 

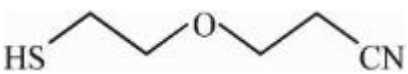
Question Number : 77 Question Id : 7155053848 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

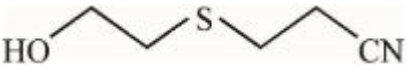
Correct Marks : 4 Wrong Marks : 1

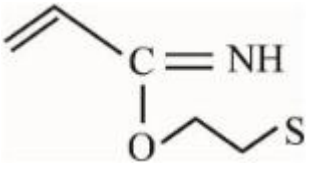
निम्नलिखित अभिक्रिया में बना प्रमुख उत्पाद है:

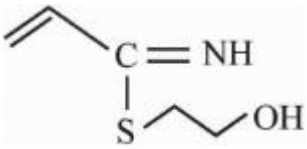


Options :

71550512235. 

71550512236. 

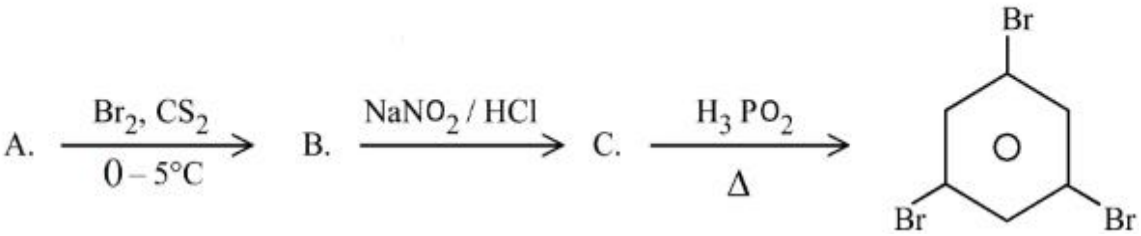
71550512237. 

71550512238. 

Question Number : 78 Question Id : 7155053849 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

Compound A from the following reaction sequence is:



Options :

71550512239. Benzoic Acid

71550512240. Salicylic Acid

71550512241. Phenol

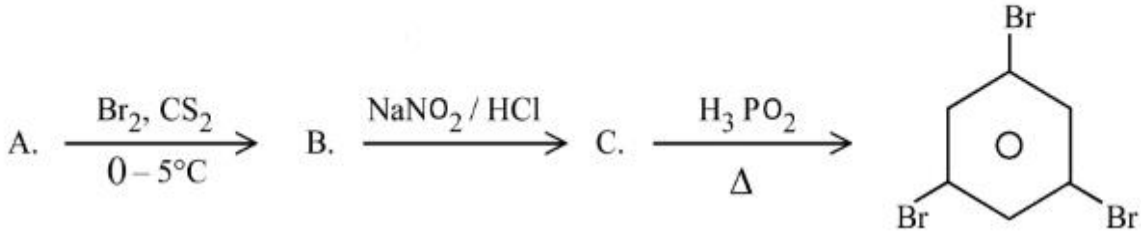
71550512242. Aniline

Question Number : 78 Question Id : 7155053849 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 अभिक्रिया अनुक्रम में यौगिक A है:



Options :

71550512239. बेन्जोइक अम्ल

71550512240. सैलिसिलिक अम्ल

71550512241. फीनॉल

71550512242. ऐनिलीन

Question Number : 79 Question Id : 7155053850 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 naturally occurring amino acid that contains only one basic functional group in its chemical structure is

Options :

71550512243. asparagine

71550512244. lysine

71550512245. arginine

71550512246. histidine

Question Number : 79 Question Id : 7155053850 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

प्राकृतिक रुप से पाया जाने वाला ऐमीनो अम्ल जिसकी केवल एक क्षारीय क्रियात्मक समूह होता है:

Options :

71550512243. ऐस्पेराजीन

71550512244. लाइसीन

71550512245. आर्जिनीन

71550512246. हिस्टिडीन

Question Number : 80 Question Id : 7155053851 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		LIST II	
A.	Weak intermolecular forces of attraction	I.	Hexamethylenediamine + adipic acid
B.	Hydrogen bonding	II.	$AlEt_3 + TiCl_4$
C.	Heavily branched polymer	III.	2 – chloro – 1, 3 – butadiene
D.	High density polymer	IV.	Phenol + formaldehyde

Choose the correct answer from the options given below:

Options :

71550512247. A-II, B-IV, C-I, D-III

71550512248. A-IV, B-I, C-III, D-II

71550512249. A-III, B-I, C-IV, D-II

71550512250. A-IV, B-II, C-III, D-I

Question Number : 80 Question Id : 7155053851 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 को II से सुमेलित करें:

सूची I		सूची II	
A.	दुर्बल अन्तरा आण्विक आर्कषण बल	I.	हेक्सामेथिलिनहाइऐमीन + ऐडिपिक अम्ल
B.	हाइड्रोजन आबंध	II.	$AlEt_3 + TiCl_4$
C.	उच्च आवेशित बहुलक	III.	2 – क्लोरो– 1, 3 – ब्यूटाडाईन
D.	उच्च घनत्व बहुलक	IV.	फीनॉल + फॉर्मेल्डीहाइड

नीचे दिये गये विकल्पों में से सही उत्तर को चुनें:

Options :

71550512247. A-II, B-IV, C-I, D-III

71550512248. A-IV, B-I, C-III, D-II

71550512249. A-III, B-I, C-IV, D-II

71550512250. A-IV, B-II, C-III, D-I

Chemistry Section B

Section Id :	715505234
Section Number :	6
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 :	715505234
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 81 Question Id : 7155053852 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

1g of a carbonate (M_2CO_3) on treatment with excess HCl produces 0.01 mol of CO_2. The molar mass of M_2CO_3 is _____ g mol^{-1}. (Nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 81 Question Id : 7155053852 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

1g कार्बोनेट (M_2CO_3) को HCl के आधिक्य से अभिक्रिया कराने पर CO_2 का 0.01 मोल देता है। M_2CO_3 का मोलर द्रव्यमान _____ $g\ mol^{-1}$ है। (निकटतम पूर्णांक)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 82 Question Id : 7155053853 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Sodium metal crystallizes in a body centred cubic lattice with unit cell edge length of 4 Å. The radius of sodium atom is _____ $\times 10^{-1}$ Å (Nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 82 Question Id : 7155053853 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

सोडियम धातु 4 Å कोष्टिका कोर लम्बाई के साथ अंत: केन्द्रित धनीय जालक के रुप में क्रिस्टलीकृत होता है। सोडियम परमाणु की त्रिज्या _____ $\times 10^{-1}$ Å (निकटतम पूर्णांक)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 83 Question Id : 7155053854 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

The orbital angular momentum of an electron in 3s orbital is $\frac{xh}{2\pi}$. The value of x is

_____(nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 83 Question Id : 7155053854 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

किसी इलेक्ट्रान का 3s कक्षक में कक्षक कोणीय संवेग $\frac{xh}{2\pi}$ 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 :

10

Question Number : 84 Question Id : 7155053855 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

Sea water contains 29.25% NaCl and 19% $MgCl_2$ by weight of solution. The normal boiling point of the sea water is _____ °C (Nearest integer)

Assume 100% ionization for both NaCl and $MgCl_2$

Given : $K_b(H_2O) = 0.52$ K kg mol^{-1}

Molar mass of NaCl and $MgCl_2$ is 58.5 and 95 g mol^{-1} respectively.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 84 Question Id : 7155053855 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

भारानुसार समुद्री जल के विलयन में 29.25% NaCl और 19% $MgCl_2$ है। समुद्री जल का सामान्य क्वथनांक _____ °C (निकटतम पूर्णांक)

मान लीजिये कि NaCl और $MgCl_2$ 100% आयनीकृत हो जाते हैं।

दिया गया है : $K_b(H_2O) = 0.52$ K kg mol^{-1}

NaCl और $MgCl_2$ के मोलर द्रव्यमान क्रमश: 58.5 और 95 g mol^{-1} हैं।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 85 Question Id : 7155053856 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

20 mL of 0.1 M NaOH is added to 50 mL of 0.1 M acetic acid solution. The pH of the resulting solution is _____ $\times 10^{-2}$ (Nearest integer)

Given : pKa (CH_3 COOH) = 4.76

log 2 = 0.30

log 3 = 0.48

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 85 Question Id : 7155053856 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

0.1 M NaOH के 20 mL को 0.1 M ऐसिटक अम्ल के 50 mL विलयन में मिलाया जाता है। परिणामी विलयन का pH _____ $\times 10^{-2}$ है (निकटतम पूर्णांक)

दिया गया है : pKa (CH_3 COOH) = 4.76

log 2 = 0.30

log 3 = 0.48

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 86 Question Id : 7155053857 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

At 298 K, the standard reduction potential for Cu^{2+} / Cu electrode is 0.34 V.
Given : $K_{sp}\ Cu(OH)_2 = 1 \times 10^{-20}$

$$\text{Take } \frac{2.303RT}{F} = 0.059V$$

The reduction potential at pH = 14 for the above couple is $(-)x \times 10^{-2}$ V.
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 :

10

Question Number : 86 Question Id : 7155053857 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

298 K ताप पर Cu^{2+} / Cu इलेक्ट्रोड का मानक अपचयन विभव 0.34 V है।
दिया गया है : $K_{sp}\ Cu(OH)_2 = 1 \times 10^{-20}$

$$\text{Take } \frac{2.303RT}{F} = 0.059V$$

उपरोक्त जोडें का अपचयन विभव pH = 14 पर $(-)x \times 10^{-2}$ V 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 :

10

Question Number : 87 Question Id : 7155053858 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

$A(g) \rightarrow 2B(g) + C(g)$ is a first order reaction. The initial pressure of the system was found to be 800 mm Hg which increased to 1600 mm Hg after 10 min. The total pressure of the system after 30 min will be _____ mm Hg. (Nearest integer)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 87 Question Id : 7155053858 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

$A(g) \rightarrow 2B(g) + C(g)$ एक प्रथम कोटि की अभिक्रिया है। निकाय का प्रारम्भिक दाब 800 mm Hg था जोकि 10 min बाद1600 mm Hg हो गया। निकाय का कुल दाब 30 min बाद _____ mm Hg होगा। (निकटतम पूर्णांक)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 88 Question Id : 7155053859 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

See the following chemical reaction:

$$Cr_2O_7^{2-} + X\ H^+ + 6F_e^{2+} \rightarrow Y\ Cr^{3+} + 6F_e^{3+} + Z\ H_2O$$

The sum of X, Y and Z is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 88 Question Id : 7155053859 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित अभिक्रिया को देखें:

$$Cr_2O_7^{2-} + X\ H^+ + 6F_e^{2+} \rightarrow Y\ Cr^{3+} + 6F_e^{3+} + Z\ H_2O$$

X, Y और Z का योग _____ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 89 Question Id : 7155053860 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

If the formula of Borax is $Na_2B_4O_x(OH)_y \cdot zH_2O$, then $x + y + z =$ _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 89 Question Id : 7155053860 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

यदि बोरक्स का सूत्र $Na_2B_4O_x(OH)_y \cdot zH_2O$, है तो $x + y + z =$ _____ होगा।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 90 Question Id : 7155053861 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

0.400 g of an organic compound (X) gave 0.376 g of AgBr in Carius method for estimation of bromine. % of bromine in the compound (X) is _____ .

(Given: Molar mass AgBr = 188 g mol^{-1}

Br = 80 g mol^{-1})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 90 Question Id : 7155053861 Question Type : SA Calculator : None

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

Correct Marks : 4 Wrong Marks : 1

कैरिअस विधि से ब्रोमीन के निर्धारण 0.400 g कार्बनिक यौगिक (X) 0.376 g AgBr देता है। यौगिक (X) में ब्रोमीन का _____ प्रतिशत है।

(दिया गया है: AgBr का मोलर द्रव्यमान = 188 g mol^{-1}

Br = 80 g mol^{-1})

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10