National Testing Agency

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Paper II

Group Number :	1
Group Id :	416529137
Group Maximum Duration :	0
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Break time:	0
Group Marks:	390

Mathematics

Section Id :	416529193
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	30
Number of Questions to be attempted:	30
Section Marks:	120
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	416529255
Question Shuffling Allowed :	Yes

Question Number : 1 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The function $f : \mathbf{R} \to \mathbf{R}$, is given by

$f(x) = \dfrac{x}{1 + |x|}$, is :

Options :

1. one-one and onto

2. onto but not one-one

3. one-one but not onto

4. neither one-one nor onto

Question Number : 1 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

$f: \mathbf{R} \to \mathbf{R},\ f(x) = \dfrac{x}{1+|x|}$ द्वारा परिभाषित फलन :

Options :

1. एकैकी तथा आच्छादक है।

2. आच्छादक है परन्तु एकैकी नहीं है।

3. एकैकी है परन्तु आच्छादक नहीं है।

4. न तो एकैकी है न ही आच्छादक है।

Question Number : 2 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If z_1, z_2 and z_3 are any three distinct complex numbers such that $|z_1| = 1$, $|z_2| = 2$, $|z_3| = 4$,

$\arg z_2 = \arg z_1 - \pi$ and $\arg z_3 = \arg z_1 + \dfrac{\pi}{2}$

then $z_2 z_3$ is equal to :

Options :

1. $-\dfrac{8i}{z_1{}^2}$

2. $8iz_1{}^2$

3. $-8iz_1{}^2$

4. $\dfrac{8i}{z_1{}^2}$

Question Number : 2 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि कोई तीन भिन्न सम्मिश्र संख्यायें z_1, z_2 तथा z_3 इस प्रकार हैं कि $|z_1|=1$, $|z_2|=2$, $|z_3|=4$,

$\arg z_2 = \arg z_1 - \pi$ तथा $\arg z_3 = \arg z_1 + \dfrac{\pi}{2}$,

तो $z_2 z_3$ बराबर है :

Options :

1. $-\dfrac{8i}{z_1{}^2}$

2. $8iz_1{}^2$

3. $-8iz_1{}^2$

4. $\dfrac{8i}{z_1{}^2}$

Question Number : 2 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

જો z_1, z_2 અને z_3 એ એવી કોઈ ત્રણ ભિન્ન સંકર સંખ્યાઓ હોય કે જેથી $|z_1|=1$, $|z_2|=2$, $|z_3|=4$,

$\arg z_2 = \arg z_1 - \pi$ અને $\arg z_3 = \arg z_1 + \dfrac{\pi}{2}$

થાય, તો $z_2 z_3 = $ _____.

Options :

1. $-\dfrac{8i}{z_1{}^2}$

2. $8iz_1{}^2$

3. $-8iz_1{}^2$

4. $\dfrac{8i}{z_1{}^2}$

Question Number : 3 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If 2α is a root of $ax^2+bx+c=0$, β is a root of $ax^2-2bx-c=0$, and the real numbers a, b, c (a>0), are such that $\beta < \alpha$; then a root γ of $ax^2+4bx+2c=0$ always satisfies :

Options :

1. $\alpha < \gamma < 2\beta$

2. $\beta < \gamma < \alpha$

3. $\gamma < \beta < \alpha$

4. $\beta < \alpha < \gamma$

Question Number : 3 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि $ax^2+bx+c=0$ का एक मूल 2α है, $ax^2-2bx-c=0$ का एक मूल β है तथा वास्तविक संख्यायें a, b, c, (a>0) इस प्रकार हैं कि $\beta < \alpha$, तो $ax^2+4bx+2c=0$ का एक मूल γ सदा सन्तुष्ट करता है :

Options :

1. $\alpha < \gamma < 2\beta$

2. $\beta < \gamma < \alpha$

3. $\gamma < \beta < \alpha$

4. $\beta < \alpha < \gamma$

Question Number : 3 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

જો $ax^2 + bx + c = 0$ નું એકબીજ 2α અને $ax^2 - 2bx - c = 0$ નું એક બીજ β હોય, તથા a, b, c (a>0) એ એવી વાસ્તવિક સંખ્યાઓ છે કે જેથી $\beta < \alpha$ થાય, તો $ax^2 + 4bx + 2c = 0$ નું એક બીજ γ હંમેશા _____ ને સંતોષે.

Options :

1. $\alpha < \gamma < 2\beta$

2. $\beta < \gamma < \alpha$

3. $\gamma < \beta < \alpha$

4. $\beta < \alpha < \gamma$

Question Number : 4 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If $B = \begin{bmatrix} -2 & -2 \\ -1 & 0 \end{bmatrix}$ and A is a matrix such that $A^{-1}B = B^{-1}$ and $kA^{-1} = 2B^{-1} + I$, where k is some scalar and I is the 2×2 identity matrix, then the value of k is :

Options :

1. -2

2. -1

3. 1

4. 2

Question Number : 4 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि $B = \begin{bmatrix} -2 & -2 \\ -1 & 0 \end{bmatrix}$ तथा आव्यूह A इस प्रकार है कि $A^{-1}B = B^{-1}$ और $kA^{-1} = 2B^{-1} + I$, जहाँ k कोई अदिश (scalar) है तथा I, 2×2 का तत्समक (identity) आव्यूह है, तो k का मान है :

Options :

1. -2

2. -1

3. 1

4. 2

Question Number : 4 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

જો $B = \begin{bmatrix} -2 & -2 \\ -1 & 0 \end{bmatrix}$ અને A કોઈ એવો શ્રેણિક છે કે

જેથી $A^{-1}B = B^{-1}$ અને $kA^{-1} = 2B^{-1} + I$, જ્યાં
k કોઈ અદિશ અને I એ 2×2 નો એકમ શ્રેણિક હોય,
તો k ની કિંમત _____ છે.

Options :

1. -2

2. -1

3. 1

4. 2

Question Number : 5 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If for positive real numbers a, b and c, the
system of linear equations

$x = a(y + z), y = b(z + x), z = c(x + y)$

has non-trivial solutions, then

$\dfrac{1}{1+a} + \dfrac{1}{1+b} + \dfrac{1}{1+c}$ is equal to :

Options :

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

2. 3

3. 2

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

Question Number : 5 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि धनात्मक वास्तविक संख्याओं a, b तथा c के लिए रैखिक समीकरण निकाय $x = a(y + z)$, $y = b(z + x)$, $z = c(x + y)$ के अतुच्छ (non-trivial) हल हैं, तो $\dfrac{1}{1+a} + \dfrac{1}{1+b} + \dfrac{1}{1+c}$ बराबर है :

Options :

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

2. 3

3. 2

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

Question Number : 5 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ધન વાસ્તવિત સંખ્યાઓ a, b અને c માટે, બે સુરેખ સમીકરણ સંહતિ $x = a(y + z)$, $y = b(z + x)$, $z = c(x + y)$ ને યોગ્ય ઉકેલો (non-trivial solutions) હોય, તો

$$\dfrac{1}{1+a} + \dfrac{1}{1+b} + \dfrac{1}{1+c} = \underline{\quad}.$$

Options :

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

2. 3

3. 2

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

Question Number : 6 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Let $(1+x)^n = C_0 + C_1 x + C_2 x^2 + \ldots + C_n x^n$
where $C_r = {}^nC_r$ and $(C_0 + C_1)(C_1 + C_2)\ldots$
$(C_{n-1} + C_n) = AC_1 C_2 \ldots C_n$. Then for $n = 5$,
A is equal to :

Options :

1. $324/5$

2. $3125/24$

3. $128/3$

4. $625/24$

Question Number : 6 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

माना $(1+x)^n = C_0 + C_1 x + C_2 x^2 + \ldots + C_n x^n$,
जहाँ $C_r = {}^nC_r$ तथा $(C_0 + C_1)(C_1 + C_2)\ldots$
$(C_{n-1} + C_n) = AC_1 C_2 \ldots C_n$ तो $n = 5$ के लिए
A बराबर है :

Options :

1. $324/5$

2. $3125/24$

3. $128/3$

4. $625/24$

Question Number : 6 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ધારો કે $(1+x)^n = C_0 + C_1 x + C_2 x^2 + \ldots + C_n x^n$
જ્યાં $C_r = {}^nC_r$ અને $(C_0 + C_1)(C_1 + C_2)\ldots$
$(C_{n-1} + C_n) = AC_1 C_2 \ldots C_n$ હોય તો $n = 5$ માટે
A = _____

Options :

1. $324/5$

2. $3125/24$

3. $128/3$

4. $625/24$

Correct Marks : 4 Wrong Marks : 1

For $\beta \neq 0$, if the coefficient of x^3 in the binomial expansion of $(1+\beta x)^6$ and the coefficient of x^4 in the binomial expansion of $(1-\beta x)^8$ are equal, then the value of β is :

Options :

1. $1/7$

2. $-2/7$

3. $2/7$

4. $-1/7$

Correct Marks : 4 Wrong Marks : 1

$\beta \neq 0$ के लिए, यदि $(1+\beta x)^6$ के द्विपद प्रसार में x^3 का गुणांक तथा $(1-\beta x)^8$ के द्विपद प्रसार में x^4 का गुणांक बराबर हैं, तो β का मान है :

Options :

1. $1/7$

2. $-2/7$

3. $2/7$

4. $-1/7$

Correct Marks : 4 Wrong Marks : 1

$\beta \neq 0$ માટે જો $(1+\beta x)^6$ ના દ્વિપદી વિસ્તરણમાં x^3 નો સહગુણક અને $(1-\beta x)^8$ ના દ્વિપદી વિસ્તરણમાં x^4 નો સહગુણક સમાન હોય તો β ની કિંમત _____ છે.

Options :

1. $1/7$

2. $-2/7$

3. 2/7

4. −1/7

Question Number : 8 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

For distinct positive numbers a, b and c, if a^2, b^2, c^2 are in A.P., then which one of the following triplets is also in A.P. ?

Options :

1. $\dfrac{1}{b-c}, \dfrac{1}{c-a}, \dfrac{1}{a-b}$

2. $\dfrac{1}{b-c}, \dfrac{1}{a-b}, \dfrac{1}{c-a}$

3. $\dfrac{1}{b+c}, \dfrac{1}{c+a}, \dfrac{1}{a+b}$

4. $\dfrac{1}{b+2c}, \dfrac{1}{c+2a}, \dfrac{1}{a+2b}$

Question Number : 8 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

भिन्न धनात्मक वास्तविक संख्याओं a, b तथा c के लिए, यदि a^2, b^2, c^2 समान्तर श्रेढ़ी में हैं, तो निम्न में से कौन सा त्रिक (triplet) भी समान्तर श्रेढ़ी में है?

Options :

1. $\dfrac{1}{b-c}, \dfrac{1}{c-a}, \dfrac{1}{a-b}$

2. $\dfrac{1}{b-c}, \dfrac{1}{a-b}, \dfrac{1}{c-a}$

3. $\dfrac{1}{b+c}, \dfrac{1}{c+a}, \dfrac{1}{a+b}$

4. $\dfrac{1}{b+2c}, \dfrac{1}{c+2a}, \dfrac{1}{a+2b}$

Question Number : 8 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ભિન્ન ધન સંખ્યાઓ a, b અને c માટે જો a^2, b^2, c^2 સમાંતર શ્રેણી (A.P.) માં હોય, તો નીચેનામાંથી ક્યું ત્રય પણ સમાંતર શ્રેણી (A.P.) માં હોય?

Options :

1. $\dfrac{1}{b-c}, \dfrac{1}{c-a}, \dfrac{1}{a-b}$

2. $\dfrac{1}{b-c}, \dfrac{1}{a-b}, \dfrac{1}{c-a}$

3. $\dfrac{1}{b+c}, \dfrac{1}{c+a}, \dfrac{1}{a+b}$

4. $\dfrac{1}{b+2c}, \dfrac{1}{c+2a}, \dfrac{1}{a+2b}$

Question Number : 9 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Let S_n be the sum of the first n - terms of the series

$1^2 + 2 \cdot 5^2 + 3^2 + 2 \cdot 7^2 + 5^2 + 2 \cdot 9^2 + \dots$

If $S_{20} = 20\,A$, then A is equal to :

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. 1851

2. 1951

3. 2001

4. 2019

Question Number : 9 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

माना श्रेणी $1^2 + 2 \cdot 5^2 + 3^2 + 2 \cdot 7^2 + 5^2 + 2 \cdot 9^2 + \dots$ के प्रथम n पदों का योग S_n है। यदि $S_{20} = 20\,A$, तो A बराबर है :

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. 1851

2. 1951

3. 2001

4. 2019

**Question Number : 9 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

ધારો કે શ્રેઢી $1^2 + 2 \cdot 5^2 + 3^2 + 2 \cdot 7^2 + 5^2 + 2 \cdot 9^2 + ...$
ના પ્રથમ n પદોનો સરવાળો S_n છે. જો $S_{20} = 20\ A$
હોય, તો A = _____

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. 1851

2. 1951

3. 2001

4. 2019

**Question Number : 10 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Let m and k be positive integers ($m \neq k$).
Then

$$\lim_{n \to \infty} n \left\{ \left(1 + \frac{1}{n}\right)^m + \left(1 + \frac{2}{n}\right)^m + ... + \left(1 + \frac{k}{n}\right)^m - k \right\}$$ is :

Options :

1. 0

2. $\dfrac{k(k+1)}{2}m$

3. $\dfrac{m(m+1)k}{2}$

4. km

**Question Number : 10 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

माना m तथा k धनात्मक पूर्णांक हैं (m≠k) तो

$$\lim_{n\to\infty} n\left\{\left(1+\frac{1}{n}\right)^m + \left(1+\frac{2}{n}\right)^m + \dots + \left(1+\frac{k}{n}\right)^m - k\right\}$$

है :

Options :

1. 0

2. $\dfrac{k(k+1)}{2}m$

3. $\dfrac{m(m+1)k}{2}$

4. km

Question Number : 10 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

જો m અને k ધન પૂર્ણાંકો હોય (m≠k), તો

$$\lim_{n\to\infty} n\left\{\left(1+\frac{1}{n}\right)^m + \left(1+\frac{2}{n}\right)^m + \dots + \left(1+\frac{k}{n}\right)^m - k\right\}$$

= _____ .

Options :

1. 0

2. $\dfrac{k(k+1)}{2}m$

3. $\dfrac{m(m+1)k}{2}$

4. km

Question Number : 11 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

For $f(x) = \begin{cases} x\dfrac{e^{1/x} - e^{-1/x}}{e^{1/x} + e^{-1/x}} & , \quad x \neq 0 \\ 0 & , \quad x = 0 \end{cases}$

Options :

1. $f'(0) = 1$

2. $f'(0) = 0$

3. f is not continuous at 0

4. f is not differentiable at 0

**Question Number : 11 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

$$f(x) = \begin{cases} x\dfrac{e^{1/x} - e^{-1/x}}{e^{1/x} + e^{-1/x}} & , & x \neq 0 \\ 0 & , & x = 0 \end{cases} \text{ के लिए :}$$

Options :

1. $f'(0) = 1$

2. $f'(0) = 0$

3. $x = 0$ पर f संतत नहीं है।

4. $x = 0$ पर f अवकलनीय नहीं है।

**Question Number : 11 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

$$f(x) = \begin{cases} x\dfrac{e^{1/x} - e^{-1/x}}{e^{1/x} + e^{-1/x}} & , & x \neq 0 \\ 0 & , & x = 0 \end{cases}$$

માટે

Options :

1. $f'(0) = 1$

2. $f'(0) = 0$

3. f એ 0 આગળ સતત નથી.

4. f એ 0 આગળ વિકલનીય નથી.

**Question Number : 12 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Let $F(x) = \int_0^x f(t)\,dt$, where

$f(x) = 2 + \sin x - \cos x$. If
$|F(x) - F(y)| \leq k|x - y|$ for all x and y in **R**,
then a possible value of k is :

Options :

1. $2 + \sqrt{2}$

2. $2 - \sqrt{2}$

3. $1 + \dfrac{1}{\sqrt{2}}$

4. $\sqrt{2} - 1$

Question Number : 12 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

माना $F(x) = \int_0^x f(t)\,dt$, जहाँ

$f(x) = 2 + \sin x - \cos x$. यदि **R** में सभी x तथा y
के लिए $|F(x) - F(y)| \leq k|x - y|$, तो k का एक
सम्भावित मान है :

Options :

1. $2 + \sqrt{2}$

2. $2 - \sqrt{2}$

3. $1 + \dfrac{1}{\sqrt{2}}$

4. $\sqrt{2} - 1$

Question Number : 12 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

ધારો કે $F(x) = \int_0^x f(t)\,dt$ જ્યાં

$f(x) = 2 + \sin x - \cos x$ છે. જો **R** માંના પ્રત્યેક x
અને y માટે $|F(x) - F(y)| \leq k|x - y|$ હોય, તો k ની
શક્ય કિંમત _____ છે.

Options :

1. $2 + \sqrt{2}$

2. $2 - \sqrt{2}$

3. $1 + \dfrac{1}{\sqrt{2}}$

4. $\sqrt{2} - 1$

Question Number : 13 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A real valued function
$f(x) = C \log_e |x| + Dx^3 + x$, $x \neq 0$, where C and D are constants, has critical points at $x = -1$ and $x = 2$. Then the ordered pair (C, D) is :

Options :

1. $\left(-\dfrac{1}{9}, \dfrac{2}{3} \right)$

2. $\left(\dfrac{2}{3}, -\dfrac{1}{9} \right)$

3. $\left(\dfrac{1}{9}, -\dfrac{2}{3} \right)$

4. $\left(-\dfrac{2}{3}, \dfrac{1}{9} \right)$

Question Number : 13 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

एक वास्तविक मान फलन
$f(x) = C \log_e |x| + Dx^3 + x$, $x \neq 0$, जहाँ C तथा D अचर है, के $x = -1$ तथा $x = 2$ पर क्रांतिक बिन्दु (critical points) हैं, तो क्रमित युग्म (C, D) है :

Options :

1. $\left(-\dfrac{1}{9}, \dfrac{2}{3} \right)$

2. $\left(\dfrac{2}{3}, -\dfrac{1}{9}\right)$

3. $\left(\dfrac{1}{9}, -\dfrac{2}{3}\right)$

4. $\left(-\dfrac{2}{3}, \dfrac{1}{9}\right)$

Question Number : 13 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

વાસ્તવિક વિધેય $f(x) = C \log_e |x| + Dx^3 + x, \ x \neq 0,$ ની નિર્ણાયક સંખ્યાઓ $x = -1$ અને $x = 2$ છે જ્યાં C અને D અચળ છે. તો ક્રમયુક્ત જોડ $(C, D) = \underline{\qquad}$.

Options :

1. $\left(-\dfrac{1}{9}, \dfrac{2}{3}\right)$

2. $\left(\dfrac{2}{3}, -\dfrac{1}{9}\right)$

3. $\left(\dfrac{1}{9}, -\dfrac{2}{3}\right)$

4. $\left(-\dfrac{2}{3}, \dfrac{1}{9}\right)$

Question Number : 14 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If $f(x) = \displaystyle\int_{e}^{e^x} \log_e\left(\dfrac{x}{\log_e t}\right) dt$, then the value

of $\dfrac{3f'(3)}{e}$ is :

Options :

1. $e^2 - 1$

2. $-3\log_e 3$

3. $3 \log_e 3$

4. $e^3 - e$

Question Number : 14 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि $f(x) = \int_{e}^{e^x} \log_e\left(\dfrac{x}{\log_e t}\right) dt$, तो $\dfrac{3f'(3)}{e}$ का

मान है :

Options :

1. $e^2 - 1$

2. $-3 \log_e 3$

3. $3 \log_e 3$

4. $e^3 - e$

Question Number : 14 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

જો $f(x) = \int_{e}^{e^x} \log_e\left(\dfrac{x}{\log_e t}\right) dt$, તો $\dfrac{3f'(3)}{e}$ નું

મૂલ્ય _____ છે.

Options :

1. $e^2 - 1$

2. $-3 \log_e 3$

3. $3 \log_e 3$

4. $e^3 - e$

Question Number : 15 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The value of the integral $\int_{\pi/2}^{\pi} \dfrac{\sin\left(3x/2\right)}{\sin\left(x/2\right)} dx$ is :

Options :

1. $\dfrac{\pi}{2} - 2$

2. $\dfrac{\pi}{2}$

3. $\dfrac{\pi}{2} + 2$

4. $\dfrac{\pi}{2} - 1$

Question Number : 15 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

समाकल $\displaystyle\int_{\pi/2}^{\pi} \dfrac{\sin\left(3x/2\right)}{\sin\left(x/2\right)}\,\mathrm{d}x$ का मान है :

Options :

1. $\dfrac{\pi}{2} - 2$

2. $\dfrac{\pi}{2}$

3. $\dfrac{\pi}{2} + 2$

4. $\dfrac{\pi}{2} - 1$

Question Number : 15 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

સંકલિત $\displaystyle\int_{\pi/2}^{\pi} \dfrac{\sin\left(3x/2\right)}{\sin\left(x/2\right)}\,\mathrm{d}x$ ની કિંમત _____

છે.

Options :

1. $\dfrac{\pi}{2} - 2$

2. $\dfrac{\pi}{2}$

3. $\dfrac{\pi}{2} + 2$

4. $\dfrac{\pi}{2} - 1$

Question Number : 16 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The area (in sq. units) of the region bounded

by the curve $\sqrt{x} + \sqrt{y} = 1$, $x, y \geq 0$, and

the tangent to it at the point $\left(\dfrac{1}{4}, \dfrac{1}{4}\right)$ is :

Options :

1. $\dfrac{1}{36}$

2. $\dfrac{1}{12}$

3. $\dfrac{1}{8}$

4. $\dfrac{1}{24}$

Question Number : 16 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

वक्र $\sqrt{x} + \sqrt{y} = 1$, $x, y \geq 0$ तथा इसके बिन्दु

$\left(\dfrac{1}{4}, \dfrac{1}{4}\right)$ पर स्पर्श रेखा द्वारा घिरे क्षेत्र का क्षेत्रफल

(वर्ग इकाइयों में) है :

Options :

1. $\dfrac{1}{36}$

2. $\dfrac{1}{12}$

3. $\dfrac{1}{8}$

4. $\dfrac{1}{24}$

Question Number : 16 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

વક્ર $\sqrt{x} + \sqrt{y} = 1$, $x, y \geq 0$ અને તેને બિંદુ $\left(\dfrac{1}{4}, \dfrac{1}{4}\right)$ આગળ દોરેલ સ્પર્શક વડે આવૃત્ત પ્રદેશનું ક્ષેત્રફળ (ચો. એકમમાં) _____ છે.

Options :

1. $\dfrac{1}{36}$

2. $\dfrac{1}{12}$

3. $\dfrac{1}{8}$

4. $\dfrac{1}{24}$

Question Number : 17 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The solution of the differential equation

$$\dfrac{dy}{dx} + \dfrac{\sin 2y}{x} = x^3 \cos^2 y, \text{ is :}$$

(where C is a constant of integration)

Options :

1. $x^2 \tan y = \dfrac{x^6}{6} + C$

2. $x^2 \tan y = \dfrac{x^4}{4} + C$

3. $x^2 \cos 2y = \dfrac{x^6}{6} + C$

4. $x^2 \sin 2y = \dfrac{x^6}{6} + C$

Question Number : 17 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

अवकल समीकरण $\dfrac{dy}{dx} + \dfrac{\sin 2y}{x} = x^3\cos^2 y$ का

हल है :

(जबकि C एक समाकल अचर है)

Options :

1. $x^2\tan y = \dfrac{x^6}{6} + C$

2. $x^2\tan y = \dfrac{x^4}{4} + C$

3. $x^2\cos 2y = \dfrac{x^6}{6} + C$

4. $x^2\sin 2y = \dfrac{x^6}{6} + C$

Question Number : 17 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

વિકલ સમીકરણ $\dfrac{dy}{dx} + \dfrac{\sin 2y}{x} = x^3\cos^2 y$ નો

ઉકેલ _____ છે.

(જ્યાં C એ સંકલનનો અચળાંક છે.)

Options :

1. $x^2\tan y = \dfrac{x^6}{6} + C$

2. $x^2\tan y = \dfrac{x^4}{4} + C$

3. $x^2\cos 2y = \dfrac{x^6}{6} + C$

4. $x^2\sin 2y = \dfrac{x^6}{6} + C$

Question Number : 18 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Let P_1, P_2 be any two points on a circle of radius r centred at the origin O, such that $\angle P_1OP_2 = \dfrac{\pi}{3}$. If P is the point of intersection of the tangents to the circle at P_1 and P_2, then the locus of the point P, is :

Options :

1. $3(x^2 + y^2) = 4r^2$

2. $4(x^2 + y^2) = 3r^2$

3. $x^2 + y^2 = 4r^2$

4. $x^2 + y^2 = 3r^2$

Question Number : 18 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

माना P_1 तथा P_2, एक वृत्त जिसकी त्रिज्या r तथा केंद्र मूलबिंदु O है, पर स्थित दो बिंदु हैं तथा $\angle P_1OP_2 = \dfrac{\pi}{3}$ है। यदि P वृत्त के बिंदुओं P_1 तथा P_2 पर खींची गई स्पर्श रेखाओं का प्रतिच्छेदन बिंदु है, तो P का बिंदुपथ (locus) है :

Options :

1. $3(x^2 + y^2) = 4r^2$

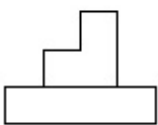2. $4(x^2 + y^2) = 3r^2$

3. $x^2 + y^2 = 4r^2$

4. $x^2 + y^2 = 3r^2$

Question Number : 18 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
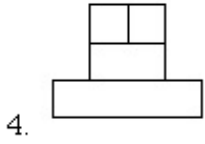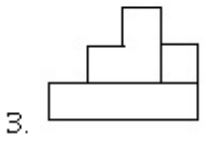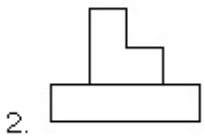
Correct Marks : 4 Wrong Marks : 1

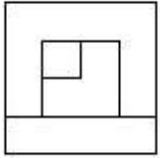ધારો કે P_1 અને P_2 એ r ત્રિજ્યાવાળા અને ઊગમબિંદુ O કેન્દ્રવાળા વર્તુળ પરના એવા કોઈ બે બિંદુઓ છે કે જેથી $\angle P_1OP_2 = \dfrac{\pi}{3}$ થાય. જો P_1 અને P_2 આગળ વર્તુળને દોરેલ સ્પર્શકોનું છેદબિંદુ P હોય, તો બિંદુ P નો બિંદુપથ _____ છે.

Options :

1. $3(x^2 + y^2) = 4r^2$

2. $4(x^2 + y^2) = 3r^2$

3. $x^2 + y^2 = 4r^2$

4. $x^2 + y^2 = 3r^2$

Question Number : 19 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

If any tangent to the parabola $x^2 = 4y$ intersects the hyperbola $xy = 2$ at two points P and Q, then the mid-point of line segment PQ lies on a parabola with axis along :

Options :

1. x-axis and focus on positive x-axis

2. x-axis and focus on negative x-axis

3. y-axis and focus on negative y-axis

4. y-axis and focus on positive y-axis

Question Number : 19 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

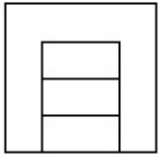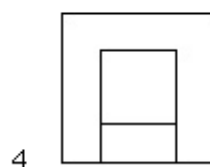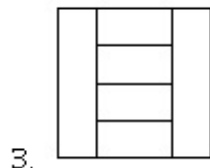यदि परवलय $x^2 = 4y$ की कोई स्पर्श रेखा अतिपरवलय $xy = 2$ को दो बिंदुओं P तथा Q पर काटती है, तो रेखाखण्ड PQ का मध्यबिंदु एक परवलय पर स्थित है जिसका अक्ष :

Options :

1. x-अक्ष के अनुदिश है तथा जिसकी नाभि धनात्मक x-अक्ष पर है।

2. x-अक्ष के अनुदिश है तथा जिसकी नाभि ऋणात्मक x-अक्ष पर है।

3. y-अक्ष के अनुदिश है तथा जिसकी नाभि ऋणात्मक y-अक्ष पर है।
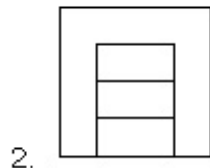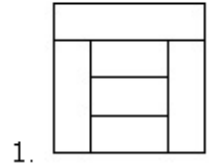
Question Number : 19 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
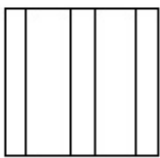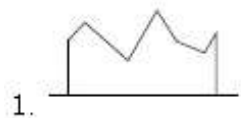
Correct Marks : 4 Wrong Marks : 1

પરવલય $x^2 = 4y$ નો કોઈ સ્પર્શક, અતિવલય $xy = 2$ ને બે ભિન્ન બિંદુઓ P અને Q માં છેદે છે, તો રેખાખંડ PQ નું મધ્યબિંદુ જે પરવલય પર હોય તે પરવલયનો અક્ષ _____.

Options :

1. x-અક્ષ અને નાભિ ધન x-અક્ષ પર છે.

2. x-અક્ષ અને નાભિ ઋણ x-અક્ષ પર છે.

3. y-અક્ષ અને નાભિ ઋણ y-અક્ષ પર છે.
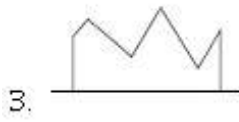
4. y-અક્ષ અને નાભિ ધન y-અક્ષ પર છે.

Question Number : 20 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

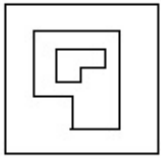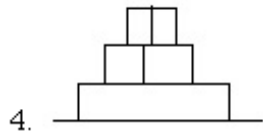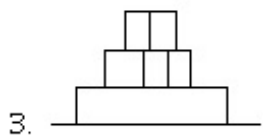**Correct Marks : 4 Wrong Marks : 1**

If m and n are the lengths of the perpendicular from the origin to the straight lines whose equations are $x\cot\theta - y = 2\cos\theta$ and

$4x + 3y = -\sqrt{5}\cos 2\theta$, $(\theta \in (0, \pi))$,

respectively, then the value of $m^2 + 5n^2$ is :

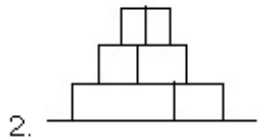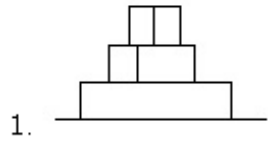**Options :**

1. 3

2. 1

3. 5

4. 7

Question Number : 20 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

यदि m तथा n क्रमशः रेखाओं जिनके समीकरण
$x\cot\theta - y = 2\cos\theta$ तथा
$4x + 3y = -\sqrt{5}\cos 2\theta$, $(\theta \in (0,\pi))$ पर मूलबिंदु
से खींची गई लंबवत रेखाओं की लंबाइयाँ हैं, तो
$m^2 + 5n^2$ का मान है :

Options :

1. 3

2. 1

3. 5

4. 7

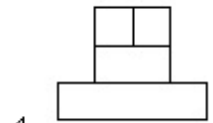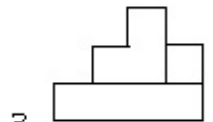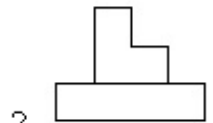**Question Number : 20 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

જો m અને n એ અનુક્રમે ઉગમબિંદુમાંથી જેનાં સમીકરણ
$x\cot\theta - y = 2\cos\theta$ અને $4x + 3y = -\sqrt{5}\cos 2\theta$,
$(\theta \in (0,\pi))$ હોય તેવી રેખાઓ પરના લંબની લંબાઈઓ
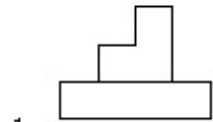હોય, તો $m^2 + 5n^2$ ની કિંમત _____ છે.

Options :

1. 3

2. 1

3. 5

4. 7

Question Number : 21 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
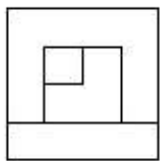
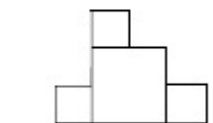**Correct Marks : 4 Wrong Marks : 1**

If an ellipse has its foci at $(2, 0)$ and $(-2, 0)$
and its length of the latus rectum is 6, then
the equation of the ellipse is :

Options :

1. $\dfrac{x^2}{16} + \dfrac{y^2}{12} = 1$

2. $\dfrac{x^2}{24} + \dfrac{y^2}{64} = 1$

3. $\dfrac{x^2}{36} + \dfrac{y^2}{18} = 1$

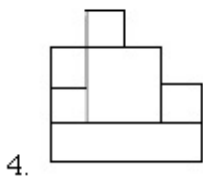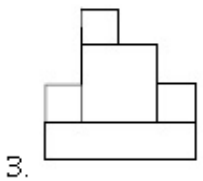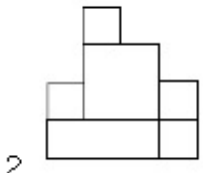4. $\dfrac{x^2}{64} + \dfrac{y^2}{24} = 1$

Question Number : 21 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
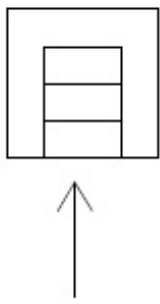
Correct Marks : 4 Wrong Marks : 1

यदि एक दीर्घवृत्त की नाभियाँ (2, 0) तथा (− 2, 0) पर हैं तथा इसके नाभिलंब की लंबाई 6 है, तो दीर्घवृत्त का समीकरण है :

Options :

1. $\dfrac{x^2}{16} + \dfrac{y^2}{12} = 1$

2. $\dfrac{x^2}{24} + \dfrac{y^2}{64} = 1$

3. $\dfrac{x^2}{36} + \dfrac{y^2}{18} = 1$

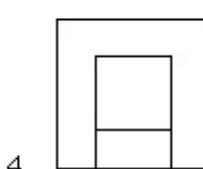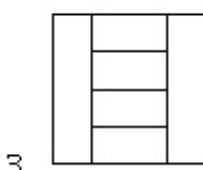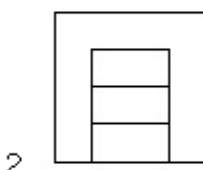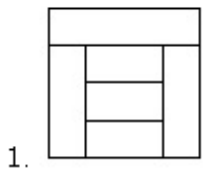4. $\dfrac{x^2}{64} + \dfrac{y^2}{24} = 1$

Question Number : 21 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

એક ઉપવલયની નાભિઓ (2, 0) અને (− 2, 0) છે તથા નાભિલંબની લંબાઈ 6 છે, તો આ ઉપવલયનું સમીકરણ _____ છે.

Options :

1. $\dfrac{x^2}{16} + \dfrac{y^2}{12} = 1$

2. $\dfrac{x^2}{24} + \dfrac{y^2}{64} = 1$

3. $\dfrac{x^2}{36} + \dfrac{y^2}{18} = 1$

4. $\dfrac{x^2}{64} + \dfrac{y^2}{24} = 1$

Question Number : 22 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
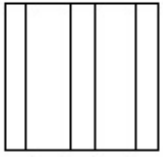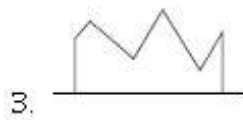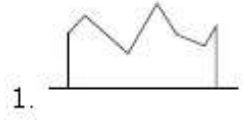
Correct Marks : 4 Wrong Marks : 1

Let C be the circle whose diameter is the line segment formed by the line $3x + 2y = 6$ intercepted by the coordinate axes. Then C also passes through the point :

Options :

1. $(1, 1)$

2. $(3, 2)$

3. $(2, 3)$

4. $(2, 2)$

Question Number : 22 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

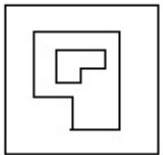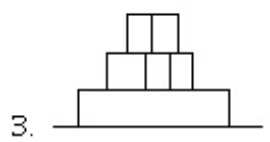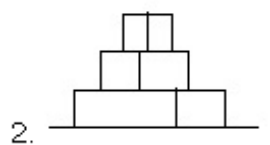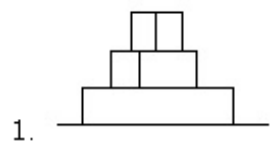**Correct Marks : 4 Wrong Marks : 1**

माना C वह वृत्त है जिसका व्यास रेखा $3x + 2y = 6$ का निर्देशांक अक्षों से बना अन्तःखण्ड, है, तो C जिस बिंदु से होकर जाता है, वह है :

Options :

1. $(1, 1)$

2. $(3, 2)$
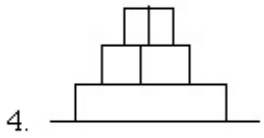
3. $(2, 3)$

4. $(2, 2)$

Question Number : 22 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ધારો કે રેખા $3x + 2y = 6$ નો અક્ષો દ્વારા કપાયેલ રેખાખંડ જેનો વ્યાસ હોય તેવું વર્તુળ C છે. તો C એ _____ બિંદુમાંથી પણ પસાર થાય છે.
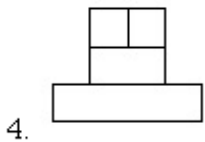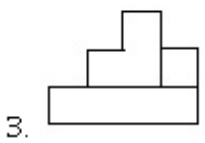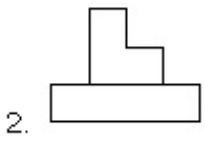
Options :

1. $(1, 1)$

2. $(3, 2)$

3. $(2, 3)$

4. $(2, 2)$

Question Number : 23 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The distance of the point (1, 2, 3) from the plane $x + y + z = 2$ measured parallel to the line $\dfrac{x+1}{-1} = \dfrac{y}{-2} = \dfrac{z-3}{1}$ is :

Options :

1. $\sqrt{21}$

2. $\sqrt{22}$

3. $\sqrt{23}$

4. $\sqrt{24}$

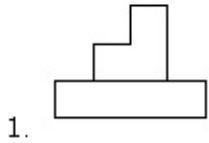**Question Number : 23 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**
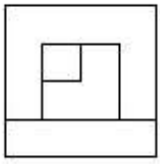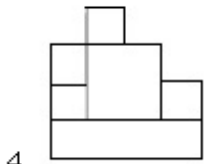
Correct Marks : 4 Wrong Marks : 1

बिंदु (1, 2, 3) की समतल $x + y + z = 2$ से वह दूरी जो रेखा $\dfrac{x+1}{-1} = \dfrac{y}{-2} = \dfrac{z-3}{1}$ की दिशा में मापी गई है, है :

Options :

1. $\sqrt{21}$

2. $\sqrt{22}$

3. $\sqrt{23}$

4. $\sqrt{24}$

Question Number : 23 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
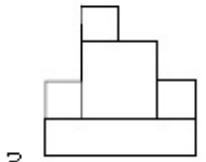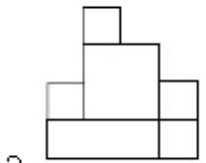
Correct Marks : 4 Wrong Marks : 1

બિંદુ $(1, 2, 3)$ નું સમતલ $x + y + z = 2$ થી રેખા $\dfrac{x + 1}{-1} = \dfrac{y}{-2} = \dfrac{z - 3}{1}$ ને સમાંતર રહી માપેલ અંતર _____ છે.

Options :

1. $\sqrt{21}$

2. $\sqrt{22}$

3. $\sqrt{23}$

4. $\sqrt{24}$

Question Number : 24 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
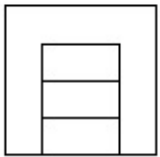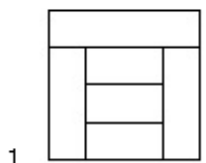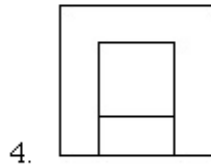
Correct Marks : 4 Wrong Marks : 1

The value of α for which the shortest distance between the lines represented by $y + z = 0$, $z + x = 0$ and $x + y = 0$, $x + y + z = \alpha$ is 1, is :

Options :

1. $\sqrt{\dfrac{3}{5}}$

2. $\sqrt{\dfrac{5}{3}}$

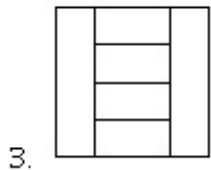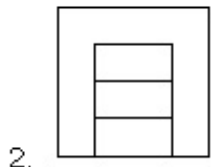3. $\sqrt{\dfrac{2}{3}}$

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

Question Number : 24 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
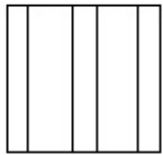
Correct Marks : 4 Wrong Marks : 1

α का वह मान जिसके लिए $y + z = 0, z + x = 0$ और $x + y = 0$, $x + y + z = \alpha$ द्वारा प्रदर्शित रेखाओं के बीच की न्यूनतम दूरी 1 है, है :

Options :

1. $\sqrt{\dfrac{3}{5}}$

2. $\sqrt{\dfrac{5}{3}}$

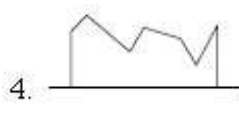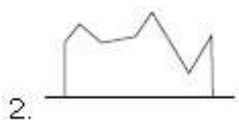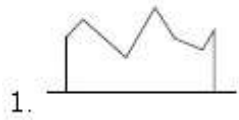3. $\sqrt{\dfrac{2}{3}}$

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

Question Number : 24 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

$y + z = 0,\ z + x = 0$ અને $x + y = 0,\ x + y + z = \alpha$ વડે દર્શાવાતી રેખાઓ વચ્ચેનું લઘુત્તમ અંતર 1 હોય તો α ની કિંમત _____ છે.

Options :

1. $\sqrt{\dfrac{3}{5}}$

2. $\sqrt{\dfrac{5}{3}}$
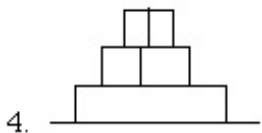
3. $\sqrt{\dfrac{2}{3}}$
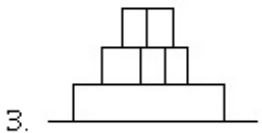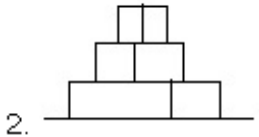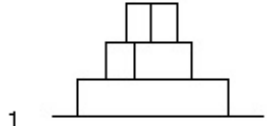
4. $\sqrt{\dfrac{3}{2}}$

Question Number : 25 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Let $\vec{a} = 2\hat{i} + \hat{j} - 2\hat{k}$ and $\vec{b} = \hat{i} + \hat{j}$. If $\vec{c}$ be a vector such that $\vec{a} \cdot \vec{c} = |\vec{c}|, |\vec{c} - \vec{a}| = 2\sqrt{2}$ and the angle between $\vec{a} \times \vec{b}$ and $\vec{c}$ is 30°, then the value of $\left|\left(\vec{a} \times \vec{b}\right) \times \vec{c}\right|$ is :

Options :

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

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

3. 3

4. 6

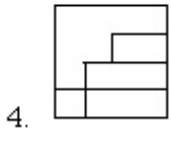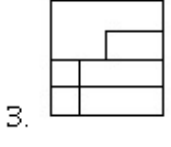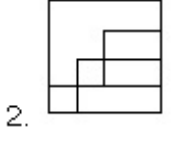**Question Number : 25 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

माना $\vec{a} = 2\hat{i} + \hat{j} - 2\hat{k}$ तथा $\vec{b} = \hat{i} + \hat{j}$ हैं।

यदि $\vec{c}$ एक ऐसा सदिश है कि $\vec{a} \cdot \vec{c} = |\vec{c}|, |\vec{c} - \vec{a}| = 2\sqrt{2}$ है तथा $\vec{a} \times \vec{b}$ तथा $\vec{c}$ के बीच का कोण 30° है, तो $\left|\left(\vec{a} \times \vec{b}\right) \times \vec{c}\right|$ का मान है :
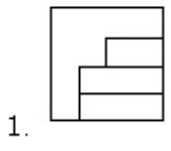
Options :

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

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

3. 3

4. 6

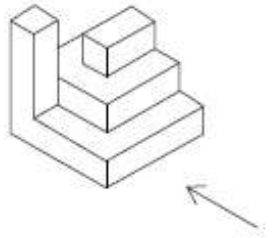**Question Number : 25 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**
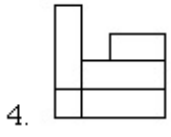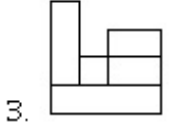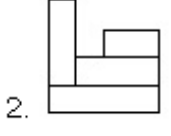
Correct Marks : 4 Wrong Marks : 1

ધારો કે $\vec{a} = 2\hat{i} + \hat{j} - 2\hat{k}$ અને $\vec{b} = \hat{i} + \hat{j}$

છે. ધારો કે $\vec{c}$ એ એવો સદિશ છે કે જેથી

$\vec{a} \cdot \vec{c} = |\vec{c}|, |\vec{c} - \vec{a}| = 2\sqrt{2}$ અને $\vec{a} \times \vec{b}$

તથા $\vec{c}$ વચ્ચેનો ખૂણો $30°$ થાય. તો $\left|\left(\vec{a} \times \vec{b}\right) \times \vec{c}\right|$

ની કિંમત _____ છે.

Options :
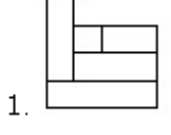
1. $\dfrac{1}{2}$
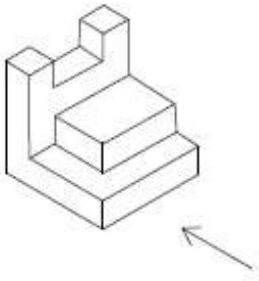
2. $\dfrac{3}{2}$

3. 3

4. 6

Question Number : 26 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

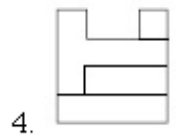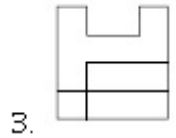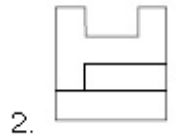**Correct Marks : 4 Wrong Marks : 1**

A and B try to hit a target. The probability that A hits the target is $7/10$ and the probability that B hits the target is $4/10$. If these two events are independent, the probability that B hits the target, given that the target is hit, is :

Options :

1. $\dfrac{17}{41}$

2. $\dfrac{18}{41}$

3. $\dfrac{19}{41}$

4. $\dfrac{20}{41}$

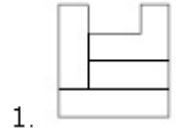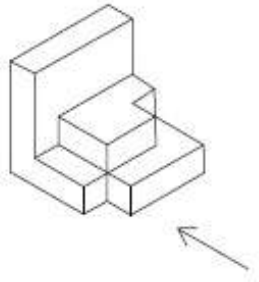**Question Number : 26 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**
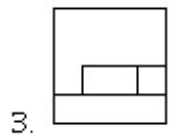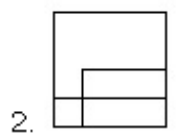
Correct Marks : 4 Wrong Marks : 1

A तथा B एक लक्ष्य को भेदने का प्रयास करते हैं। A के लक्ष्य को भेदने की प्रायिकता $7/10$ है तथा B के लक्ष्य को भेदने की प्रायिकता $4/10$ है। यदि यह दोनों घटनाएँ स्वतंत्र है तो प्रायिकता, कि B लक्ष्य भेद करे, जबकि दिया है कि लक्ष्य का भेदन हुआ है, है :

Options :

1. $\dfrac{17}{41}$

2. $\dfrac{18}{41}$

3. $\dfrac{19}{41}$

4. $\dfrac{20}{41}$

Question Number : 26 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
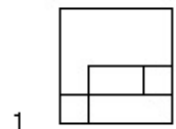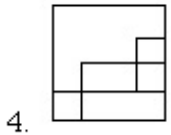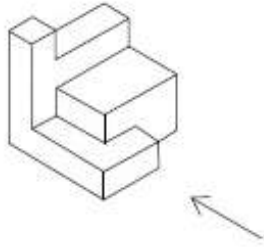
Correct Marks : 4 Wrong Marks : 1

A અને B કોઈ લક્ષ ને તાકે છે. A ની લક્ષ વેધવાની સંભાવના $7/10$ અને B ની લક્ષ વેધવાની સંભાવના $4/10$ છે. જો આ બન્ને ઘટનાઓ નિરપેક્ષ હોય તો લક્ષ વેધાય છે તેમ આપેલ હોય ત્યારે B લક્ષ વેધે તેની સંભાવના _____ છે.

Options :

1. $\dfrac{17}{41}$
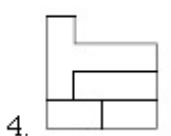
2. $\dfrac{18}{41}$

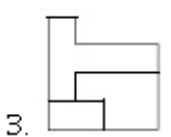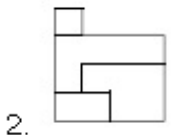3. $\dfrac{19}{41}$
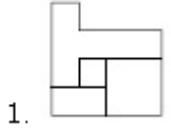
$\frac{20}{41}$
4.

Question Number : 27 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
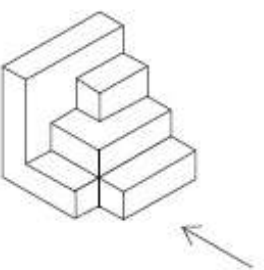**No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Let $x_1, x_2,....., x_{20}$ be 20 observations and $d_i = 2(x_i - 5), i = 1,2,..., 20$. If the mean and variance of $d_1, d_2,.....d_{20}$ are 20 and 12 respectively, then the mean and variance of $x_1, x_2,....,x_{20}$ are respectively,

Options :

1. 10 and 4

2. 15 and 3

3. 10 and 3

4. 15 and 4

Question Number : 27 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

माना $x_1, x_2,....., x_{20}$, 20 प्रेक्षण हैं तथा $d_i = 2(x_i - 5)$, $i = 1,2,..., 20$ है। यदि $d_1, d_2,.....d_{20}$ का माध्य तथा प्रसरण क्रमशः 20 तथा 12 है, तो $x_1, x_2,....,x_{20}$ के क्रमशः माध्य तथा प्रसरण हैं :

Options :

1. 10 तथा 4

2. 15 तथा 3

3. 10 तथा 3

4. 15 तथा 4

Question Number : 27 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical
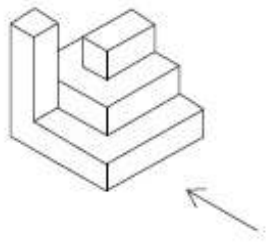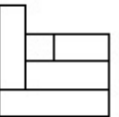
Correct Marks : 4 Wrong Marks : 1

ધારો કે 20 અવલોકનો $x_1, x_2,....., x_{20}$ છે અને $d_i = 2(x_i - 5), i = 1,2,..., 20$ છે. જો $d_1, d_2,.....d_{20}$ નો મધ્યક અને વિચરણ અનુક્રમે 20 અને 12 હોય, તો $x_1, x_2,....,x_{20}$ નો મધ્યક અને વિચરણ અનુક્રમે _____ છે.

1. 10 અને 4

2. 15 અને 3

3. 10 અને 3

4. 15 અને 4

Question Number : 28 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

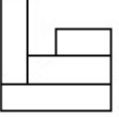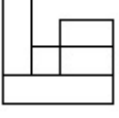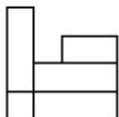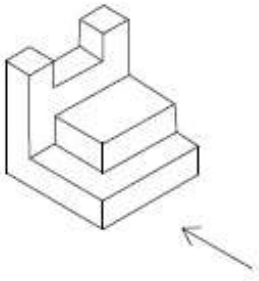**Correct Marks : 4 Wrong Marks : 1**

If $\cos(\alpha + \beta) = \dfrac{4}{5}$ and $\sin(\alpha - \beta) = \dfrac{5}{13}$,

where $\alpha, \beta \in \left(0, \dfrac{\pi}{4}\right)$, then the value of

$\tan 2\alpha$ is :

Options :

1. $\dfrac{56}{33}$

2. $\dfrac{54}{33}$

3. $\dfrac{55}{33}$

4. $\dfrac{58}{33}$

Question Number : 28 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
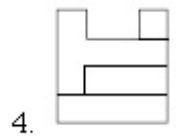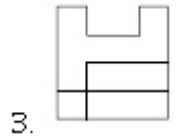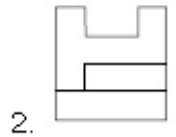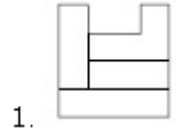
यदि $\cos(\alpha + \beta) = \dfrac{4}{5}$ तथा $\sin(\alpha - \beta) = \dfrac{5}{13}$

है जबकि $\alpha, \beta \in \left(0, \dfrac{\pi}{4}\right)$, तो $\tan 2\alpha$ का मान

है :

Options :

1. $\dfrac{56}{33}$

$\dfrac{54}{33}$

2.

$\dfrac{55}{33}$

3.

$\dfrac{58}{33}$

4.

Question Number : 28 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
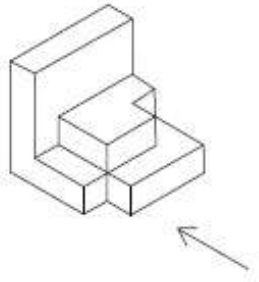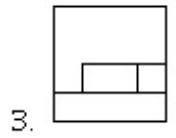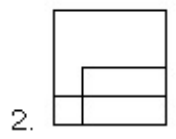
Correct Marks : 4 Wrong Marks : 1

જો $\cos(\alpha + \beta) = \dfrac{4}{5}$, $\sin(\alpha - \beta) = \dfrac{5}{13}$ અને

$\alpha, \beta \in \left(0, \dfrac{\pi}{4}\right)$ તો $\tan 2\alpha$ ની કિંમત _____

છે.

Options :

$\dfrac{56}{33}$

1.
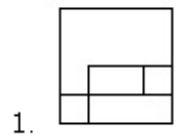
$\dfrac{54}{33}$

2.
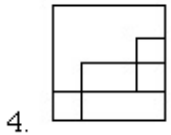
$\dfrac{55}{33}$

3.

$\dfrac{58}{33}$

4.

Question Number : 29 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
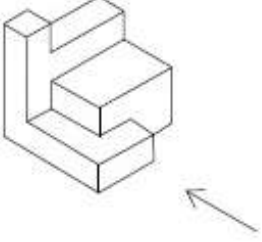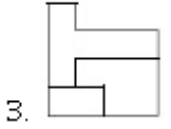
Correct Marks : 4 Wrong Marks : 1

Two parallel chords are drawn on the same side of the centre of a circle of radius 20. It is found that they subtend 60° and 120° angles at the centre of the circle. Then the perpendicular distance between the chords is :

Options :

$10(\sqrt{2} - 1)$

1.

2. $5(\sqrt{3} - 1)$

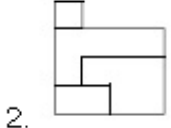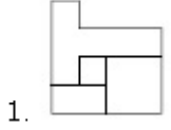3. $10(\sqrt{3} - 1)$

4. $5(\sqrt{3} + 1)$

Question Number : 29 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

त्रिज्या 20 वाले एक वृत्त के केंद्र के एक ही ओर दो समांतर जीवाएँ खींची गई हैं। यह पाया गया कि यह जीवाएँ वृत्त के केंद्र पर 60° तथा 120° के कोण अंतरित करती है। तो जीवाओं के बीच की लंबवत दूरी है :

Options :

1. $10(\sqrt{2} - 1)$

2. $5(\sqrt{3} - 1)$

3. $10(\sqrt{3} - 1)$

4. $5(\sqrt{3} + 1)$

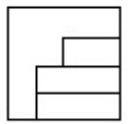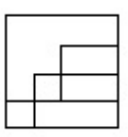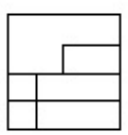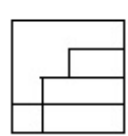**Question Number : 29 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

20 ત્રિજ્યાવાળા એક વર્તુળના કેન્દ્રની એકજ બાજુએ બે સમાંતર જીવાઓ દોરેલ છે. આ જીવાઓ વર્તુળના કેન્દ્ર આગળ 60° અને 120° ના ખૂણા આંતરે છે. આ બે જીવાઓ વચ્ચેનું લંબ અંતર _____ છે.

Options :

1. $10(\sqrt{2} - 1)$

2. $5(\sqrt{3} - 1)$

3. $10(\sqrt{3} - 1)$

4. $5(\sqrt{3} + 1)$

**Question Number : 30 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

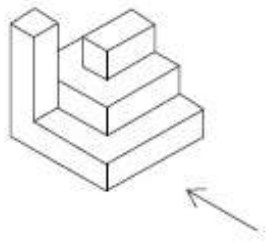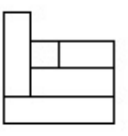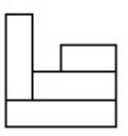**Correct Marks : 4 Wrong Marks : 1**

The compound statement

$(\sim C \wedge A \wedge B) \vee (\sim C \wedge \sim A \wedge B) \vee (C \wedge B)$

is equivalent to :

Options :

1. A

2. $\sim$A

3. B

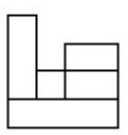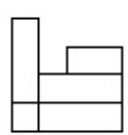4. C

**Question Number : 30 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
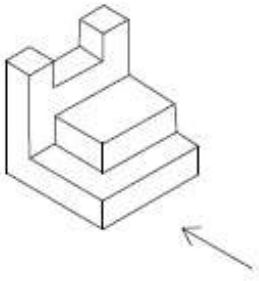
Correct Marks : 4 Wrong Marks : 1

निम्न मिश्र कथन

$(\sim C \wedge A \wedge B) \vee (\sim C \wedge \sim A \wedge B) \vee (C \wedge B)$

निम्न में किसके तुल्य है?

Options :

1. A

2. $\sim$A

3. B

4. C

**Question Number : 30 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
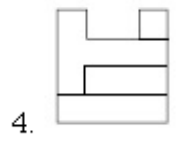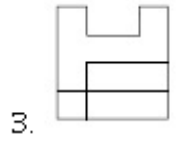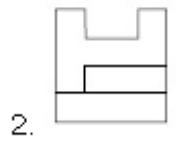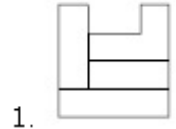No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

સંયુક્ત વિધાન

$(\sim C \wedge A \wedge B) \vee (\sim C \wedge \sim A \wedge B) \vee (C \wedge B)$

એ _____ ને સમકક્ષ છે.

Options :

1. A

2. ~A

3. B

4. C

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (31 to 35)

Question Label : Comprehension

Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

Sub questions

**Question Number : 31 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
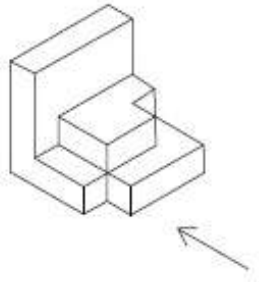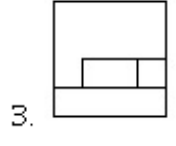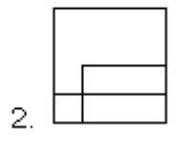No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 32 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
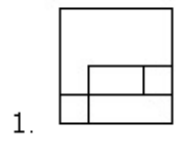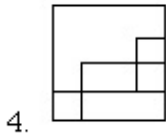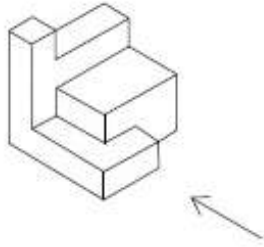
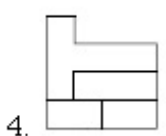Correct Marks : 4 Wrong Marks : 1

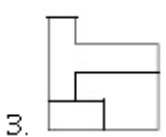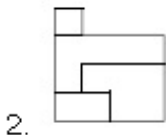**Options :**

1.

2.

3.

4.

Question Number : 33 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
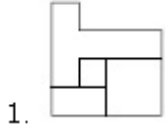

Options :

1.

2.

3.

4.

Question Number : 34 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
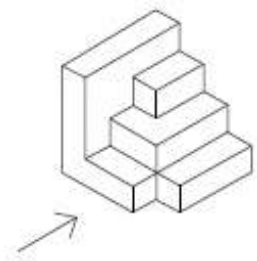
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 35 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
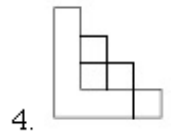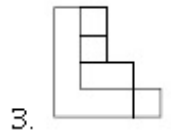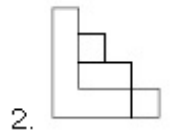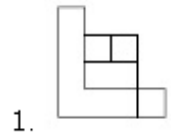**Question Numbers : (31 to 35)**
Question Label : Comprehension

निर्देश : प्रश्न आकृति में किसी वस्तु का ऊपरी दृश्य दिखाया गया है। तीर की दिशा में देखते हुए उत्तर आकृतियों में से इसका सही सम्मुख दृश्य पहचानिये।

Sub questions

Question Number : 31 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
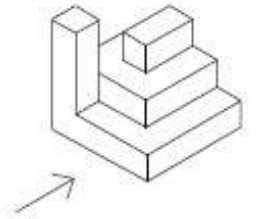
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.
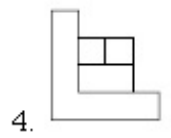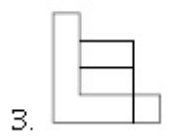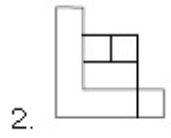
Question Number : 32 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
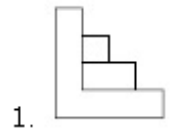

Options :

1.

2.

3.

4.

Question Number : 33 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 34 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
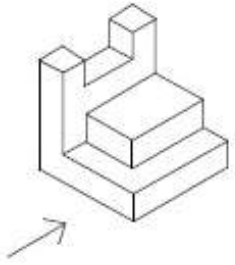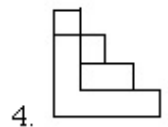
Correct Marks : 4 Wrong Marks : 1
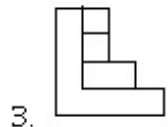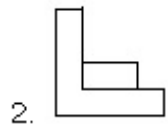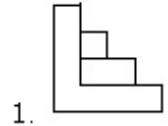

Options :

1.

2.

3.

4.

Question Number : 35 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (31 to 35)

Question Label : Comprehension

સૂચના : પ્રશ્ન આકૃતિ એક પદાર્થનું ઉપરી દૃશ્ય બતાવે છે. તીરની દિશામાં જોતાં મળતું સાચું ઉન્નત દૃશ્ય જવાબ આકૃતિઓમાંથી નક્કી કરો.

Sub questions

Question Number : 31 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
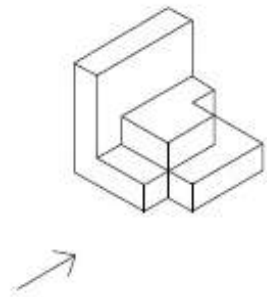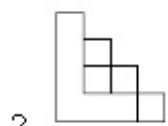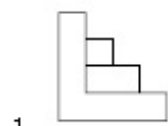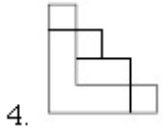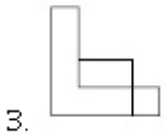**Correct Marks : 4 Wrong Marks : 1**

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 32 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
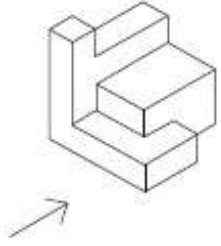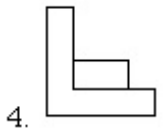**Correct Marks : 4 Wrong Marks : 1**

Options :
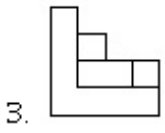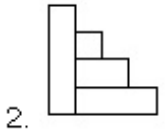
1.

2.

3.

4.

Question Number : 33 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
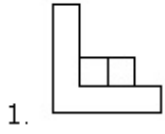

Options :

1.

2.

3.

4.

Question Number : 34 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 35 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
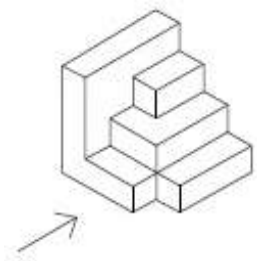
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Sub-Section Number:	2
Sub-Section Id:	416529257
Question Shuffling Allowed :	Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
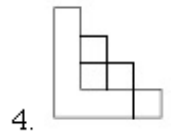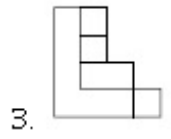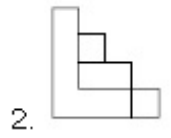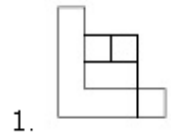**Question Numbers : (36 to 40)**
Question Label : Comprehension

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

Sub questions

Question Number : 36 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
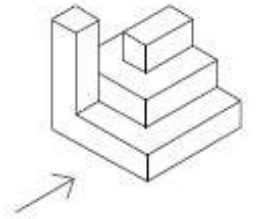**No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1
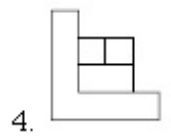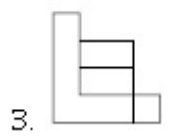

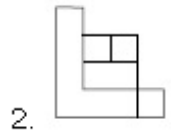**Options :**

1.

2.

3.

4.

Question Number : 37 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

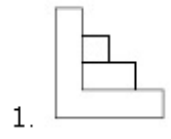

Options :

1.

2.

3.

4.

Question Number : 38 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 39 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
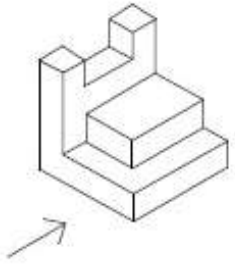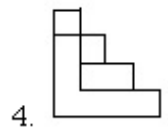
Correct Marks : 4 Wrong Marks : 1

Options :
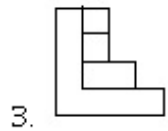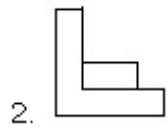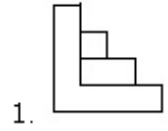

1.

2.

3.

4.

Question Number : 40 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
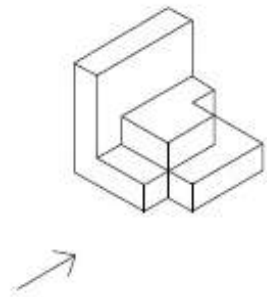
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (36 to 40)

Question Label : Comprehension

निर्देश : 3 - D प्रश्न आकृति में एक वस्तु के एक दृश्य को दिखाया गया है। तीर की दिशा में देखते हुए, इसके सम्मुख दृश्य को उत्तर आकृतियों में से पहचानिये।
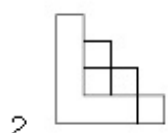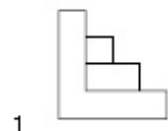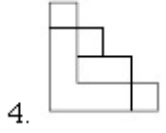
Sub questions

Question Number : 36 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
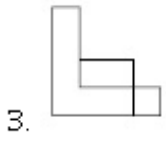
Options :

1.

2.

3.

4.

Question Number : 37 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
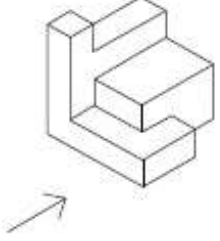
Correct Marks : 4 Wrong Marks : 1
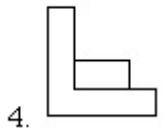

Options :

1.

2.

3.

4.

Question Number : 38 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
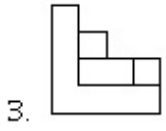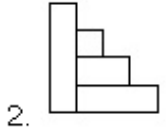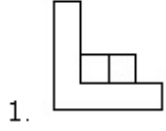
Options :

1.

2.

3.

4.

Question Number : 39 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 40 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
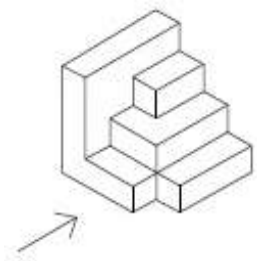
Question Numbers : (36 to 40)

Question Label : Comprehension

સૂચના : 3 - D આકૃતિ એક પદાર્થનું દૃશ્ય બતાવે છે. તીરની દિશામાં જોતાં મળતું સાચું સમ્મુખ દૃશ્ય જવાબ આકૃતિઓમાંથી નક્કી કરો.
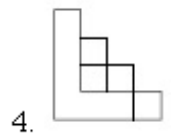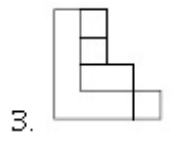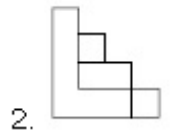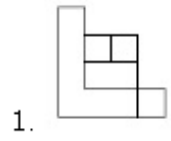
Sub questions

Question Number : 36 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

**Question Number : 37 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
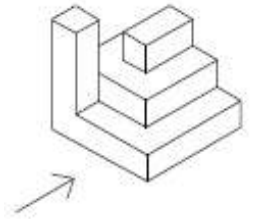
Correct Marks : 4 Wrong Marks : 1
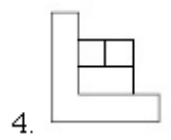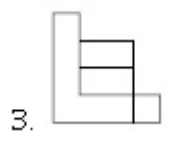

Options :

1.

2.

3.

4.

**Question Number : 38 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Options :

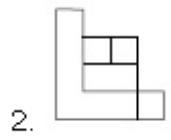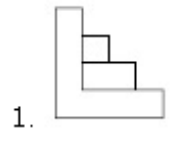

1.

2.

3.

4.

**Question Number : 39 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

**Question Number : 40 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
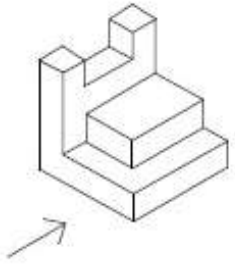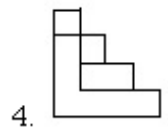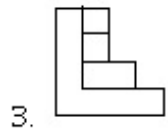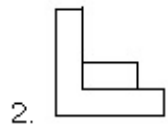
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Sub-Section Number:	3	
Sub-Section Id:	416529258	
Question Shuffling Allowed :	Yes	

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (41 to 45)

Question Label : Comprehension

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.
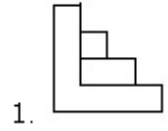
Sub questions

**Question Number : 41 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
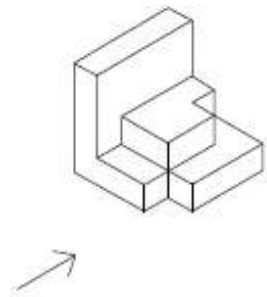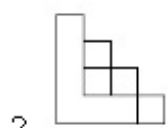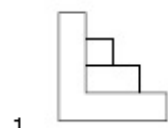
Correct Marks : 4 Wrong Marks : 1

Options :
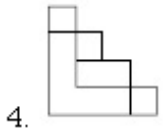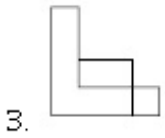

1.

2.

3.

4.

Question Number : 42 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 43 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
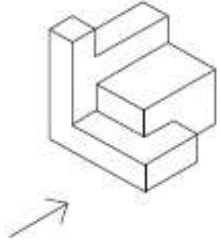
Correct Marks : 4 Wrong Marks : 1
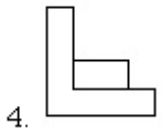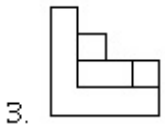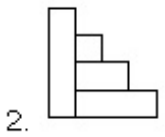

Options :

1.

2.

3.

4.

Question Number : 44 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
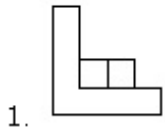

Options :

1.

2.

3.

4.

Question Number : 45 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :
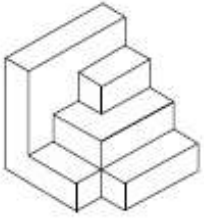
1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (41 to 45)

Question Label : Comprehension

निर्देश : 3 - D प्रश्न आकृति में एक वस्तु के एक दृश्य को दिखाया गया है। तीर की दिशा में देखते हुए, इसके सम्मुख दृश्य को उत्तर आकृतियों में से पहचानिये।
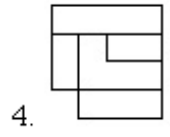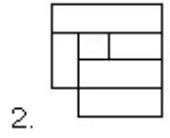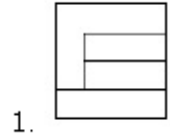
Sub questions

Question Number : 41 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 42 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
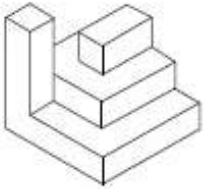
Correct Marks : 4 Wrong Marks : 1
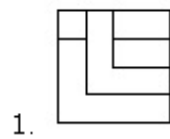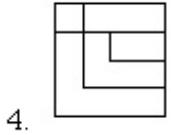

Options :

1.

2.

3.

4.

Question Number : 43 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 44 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

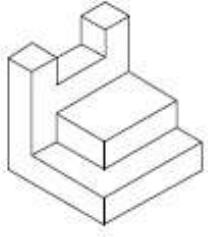**Correct Marks : 4 Wrong Marks : 1**
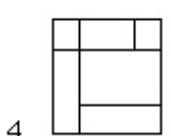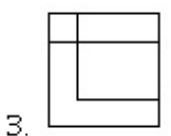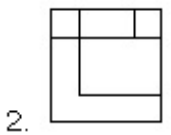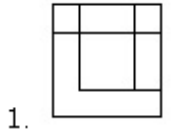

Options :

1.

2.

3.

4.

Question Number : 45 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (41 to 45)

Question Label : Comprehension

સૂચના : 3 - D આકૃતિ એક પદાર્થનું દૃશ્ય બતાવે છે. તીરની દિશામાં જોતાં મળતું સાચું સમ્મુખ દૃશ્ય જવાબ આકૃતિઓમાંથી નક્કી કરો.

Sub questions

Question Number : 41 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
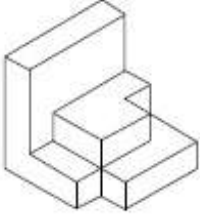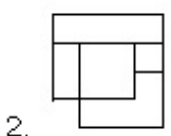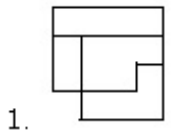
Correct Marks : 4 Wrong Marks : 1
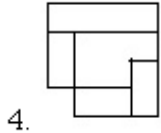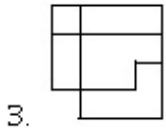
Options :

1.

2.

3.

4.

Question Number : 42 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 43 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
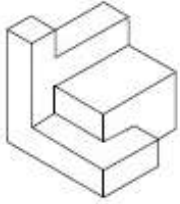
Correct Marks : 4 Wrong Marks : 1
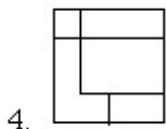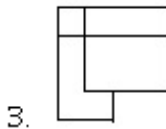

Options :

1.

2.

3.

4.

Question Number : 44 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
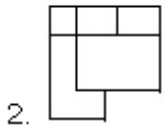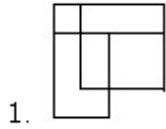

Options :

1.

2.

3.

4.

Question Number : 45 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

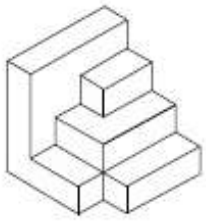|	
Sub-Section Number:	4
Sub-Section Id:	416529259
Question Shuffling Allowed :	Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

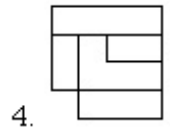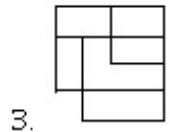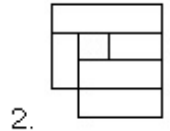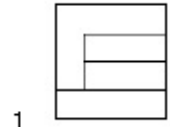**Question Numbers : (46 to 50)**

Question Label : Comprehension

Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

Sub questions

Question Number : 46 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 47 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
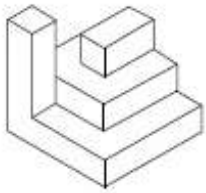
Correct Marks : 4 Wrong Marks : 1

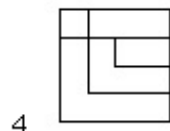**Options :**

1.

2.

3.

4.

Question Number : 48 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

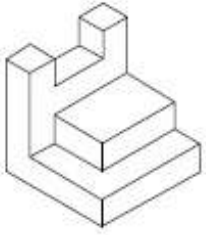**Correct Marks : 4 Wrong Marks : 1**
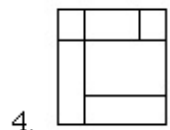
Options :

1.

2.

3.

4.

Question Number : 49 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
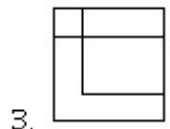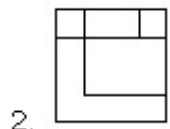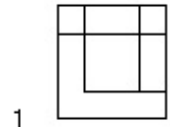
Options :

1.

2.

3.

4.

Question Number : 50 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (46 to 50)

Question Label : Comprehension

निर्देश : 3 - D प्रश्न आकृति में एक वस्तु के एक दृश्य को दिखाया गया है। इसका सही ऊपरी दृश्य, उत्तर आकृतियों में से पहचानिये।

Sub questions

Question Number : 46 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
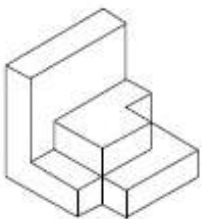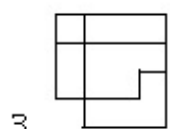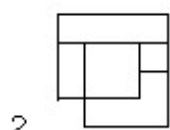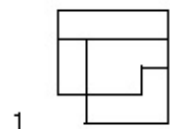
Correct Marks : 4 Wrong Marks : 1

Options :
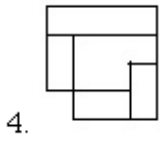
1.

2.

3.

4.

Question Number : 47 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 48 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

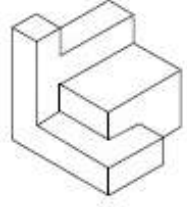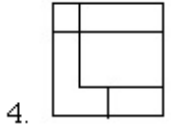**Correct Marks : 4 Wrong Marks : 1**

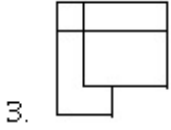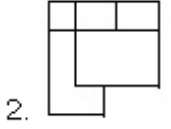

Options :

1.

2.

3.

4.

Question Number : 49 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

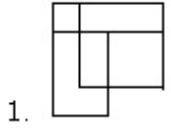**Options :**

1.

2.

3.

4.

Question Number : 50 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
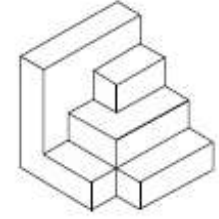
Question Numbers : (46 to 50)

Question Label : Comprehension

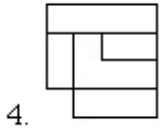**સૂચના :** 3 - D આકૃતિ એક પદાર્થનું દૃશ્ય બતાવે છે. જવાબ આકૃતિઓમાંથી સાચું ઊપરી દૃશ્ય નક્કી કરો.
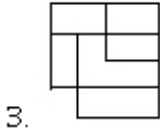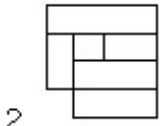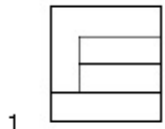
Sub questions

Question Number : 46 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 47 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
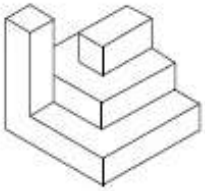
Correct Marks : 4 Wrong Marks : 1

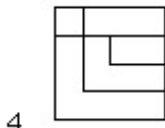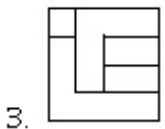**Options :**

1.

2.

3.

4.

Question Number : 48 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

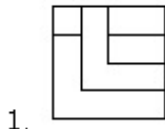**Options :**

1.

2.

3.

4.

**Question Number : 49 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 50 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
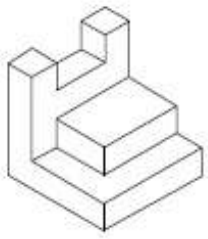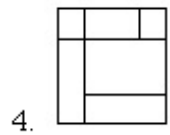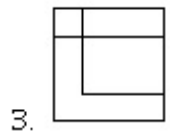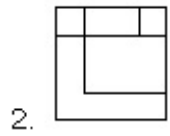
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Sub-Section Number:	5
Sub-Section Id:	416529260
Question Shuffling Allowed :	Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (51 to 55)
Question Label : Comprehension

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?
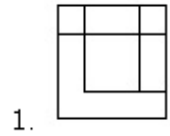
Sub questions

Question Number : 51 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
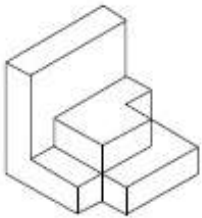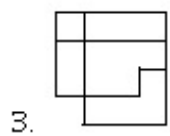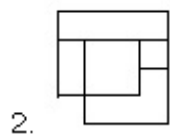**Correct Marks : 4 Wrong Marks : 1**

(X)

|
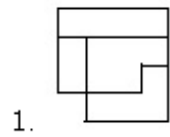|
|

(X)

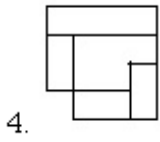**Options :**

1.

2.

3.

4.

Question Number : 52 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

(X)

|
|
|

(X)

Options :

1.

2.

3.

4.

Question Number : 53 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
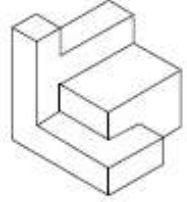
Correct Marks : 4 Wrong Marks : 1
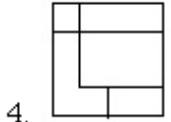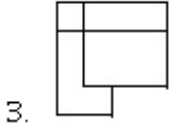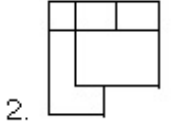
(X)

(X)

Options :

1.

2.

3.

4.

Question Number : 54 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

(X)

(X)

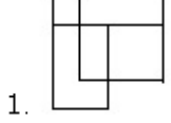**Options :**

1.

2.

3.

4.

Question Number : 55 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

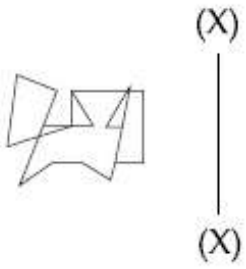**Options :**

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (51 to 55)

Question Label : Comprehension

निर्देश : उत्तर आकृतियों में से कौनसी आकृति दी गयी प्रश्न आकृति का X - X से सम्बंधित सही दर्पण प्रतिबिम्ब है?
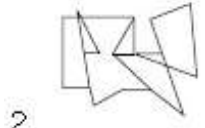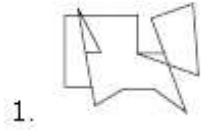
Sub questions

Question Number : 51 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

(X)

|

|

(X)

Options :

1.

2.

3.

4.

Question Number : 52 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
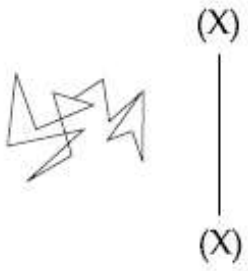**Correct Marks : 4 Wrong Marks : 1**

(X)

|

|

(X)

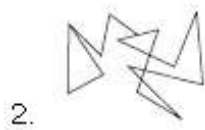**Options :**

1.

2.

3.

4.

Question Number : 53 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
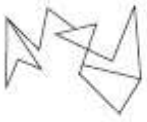
Correct Marks : 4 Wrong Marks : 1

(X)

(X)

Options :

1.

2.

3.

4.

Question Number : 54 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
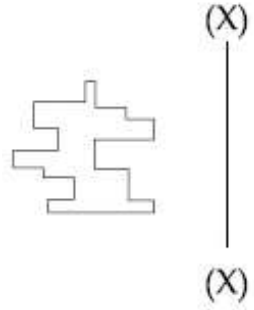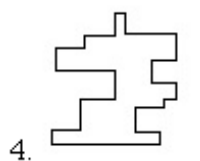
Correct Marks : 4 Wrong Marks : 1

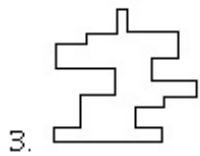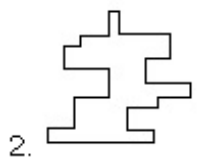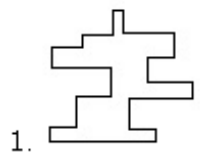

(X)

(X)

Options :

1.

2.

3.

4.

Question Number : 55 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

(X)

(X)

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (51 to 55)

Question Label : Comprehension

સૂચના : પ્રશ્ન આકૃતિનું X - X ને સાપેક્ષ આરસી પ્રતિબિંબ જવાબ આકૃતિઓમાંથી કયું થશે?

Sub questions

Question Number : 51 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
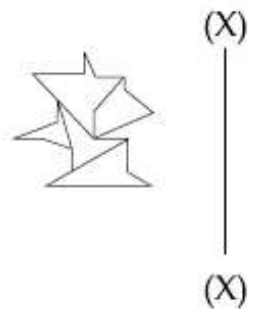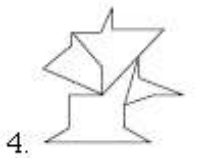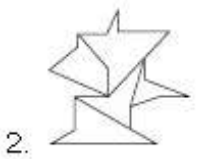
Correct Marks : 4 Wrong Marks : 1
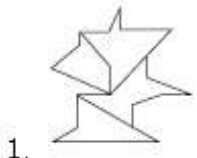

Options :

1.

2.

3.

4.

Question Number : 52 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
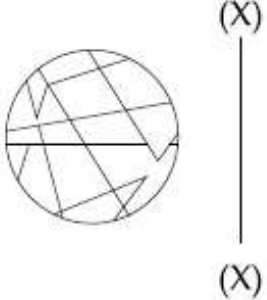
Correct Marks : 4 Wrong Marks : 1

(X)

|

(X)

Options :

1.

2.

3.

4.

Question Number : 53 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

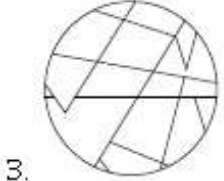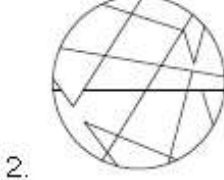**Correct Marks : 4 Wrong Marks : 1**

(X)

|

(X)

Options :

1.

2.

3.

4.

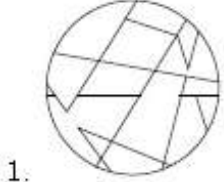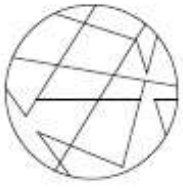**Question Number : 54 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 55 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

(X)

(X)

Options :

1.

2.

3.

4.

Sub-Section Number:	6
Sub-Section Id:	416529261
Question Shuffling Allowed :	Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
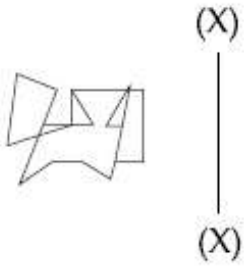
Question Numbers : (56 to 60)

Question Label : Comprehension

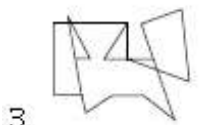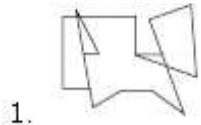Directions : Find the odd figure out of the answer figures given below :

Sub questions

Question Number : 56 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
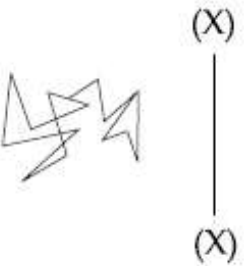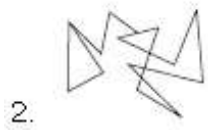
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 57 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
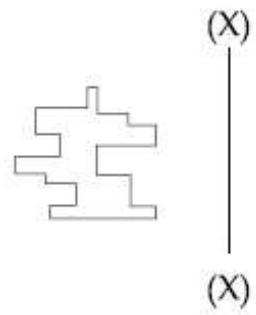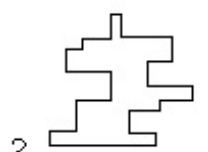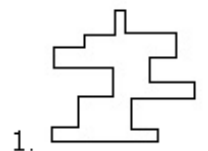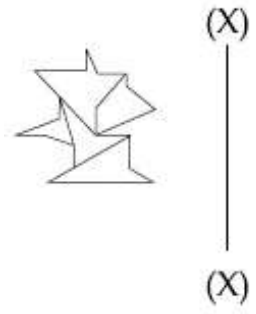
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.
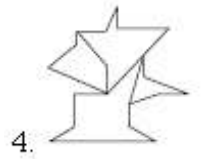
Question Number : 58 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.
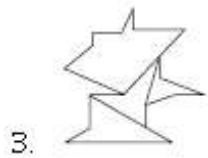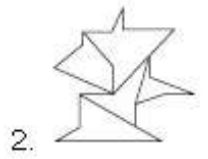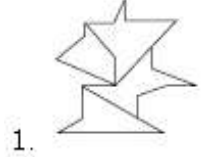

2.

3.

4.

Question Number : 59 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Question Number : 60 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
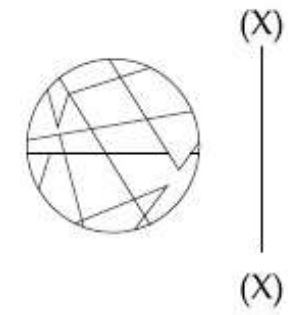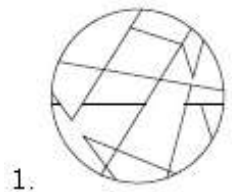
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (56 to 60)

Question Label : Comprehension

निर्देश : नीचे दी गयी उत्तर आकृतियों में से विषम आकृति पहचानिये।
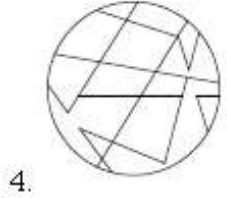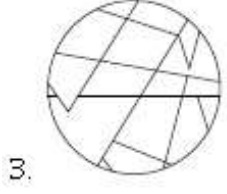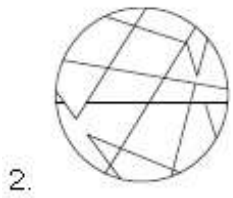
Sub questions

Question Number : 56 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

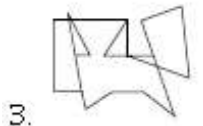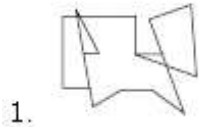**Question Number : 57 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 58 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
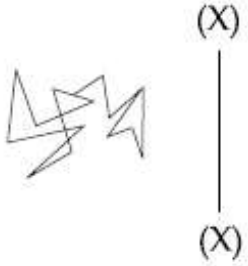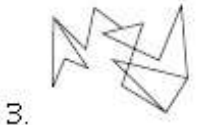
Correct Marks : 4 Wrong Marks : 1
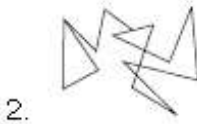
.

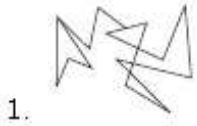**Options :**

1.

2.

3.

4.

**Question Number : 59 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

**Question Number : 60 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
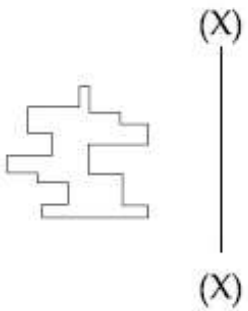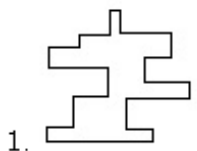No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (56 to 60)
Question Label : Comprehension

સૂચના : નીચે આપેલ જવાબ આકૃતિઓમાંથી વિષમ (odd) આકૃતિ શોધો.
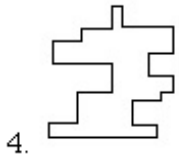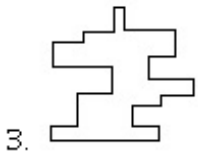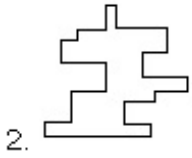
Sub questions

Question Number : 56 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 57 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
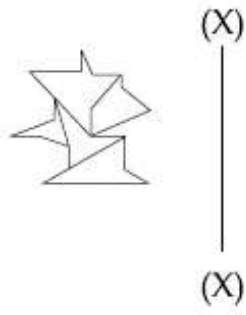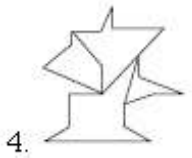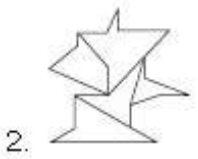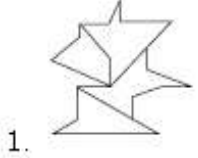
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.
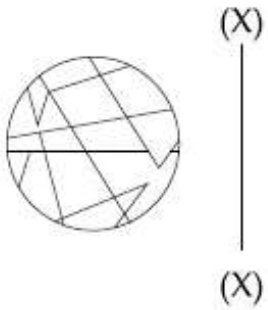
Question Number : 58 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
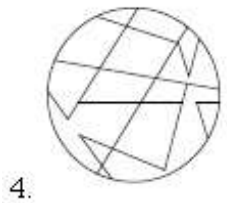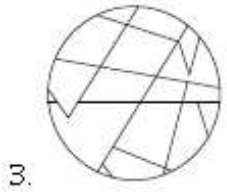
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Question Number : 59 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
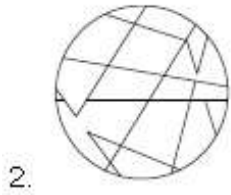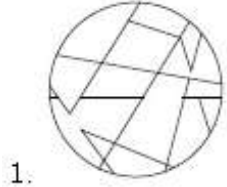
Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Question Number : 60 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

.

Options :

1.

2.

3.

4.

Sub-Section Number:	7
Sub-Section Id:	416529262
Question Shuffling Allowed :	Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (61 to 65)
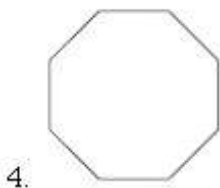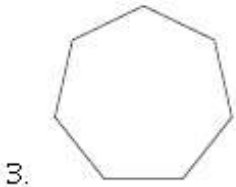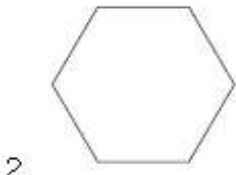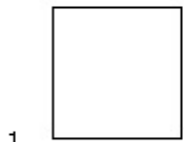
Question Label : Comprehension

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

Sub questions

Question Number : 61 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
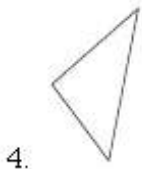
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 62 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
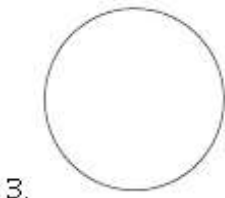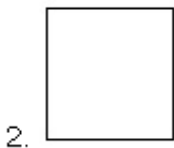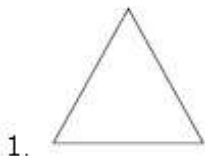
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 63 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 64 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
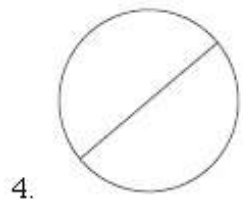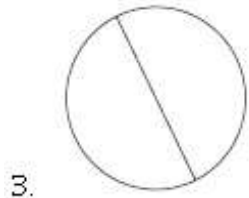

Options :

1.

2.

3.

4.

Question Number : 65 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
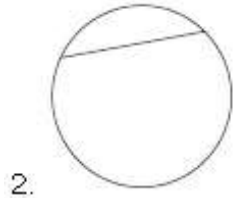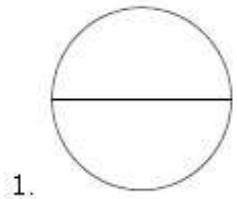

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (61 to 65)

Question Label : Comprehension

निर्देश : नीचे दी गयी उत्तर आकृतियों में से एक आकृति माप और दिशा में समान रूप से प्रश्न आकृति में छुपी है। कौन सी सही है, चुनिए।

Sub questions

Question Number : 61 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
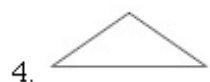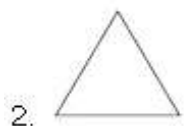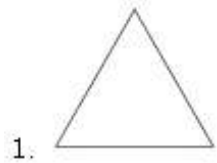
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 62 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
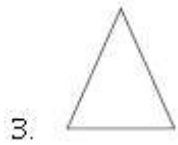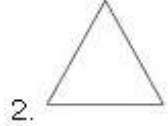
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 63 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
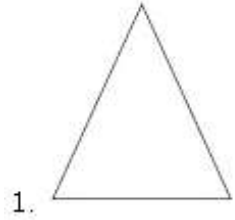
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 64 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 65 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
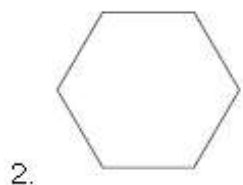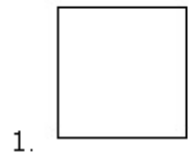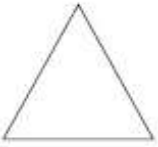**Question Numbers : (61 to 65)**

સૂચના : જવાબ આકૃતિઓમાંની એક આકૃતિ એજ માપ અને દિશા સહિત પ્રશ્ન આકૃતિમાં છુપાએલ છે. સાચો જવાબ શોધો.

Sub questions

Question Number : 61 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
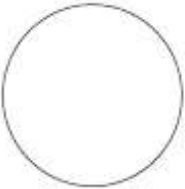
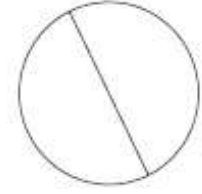**Correct Marks : 4 Wrong Marks : 1**

Options :

1.

2.

3.

4.

Question Number : 62 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1
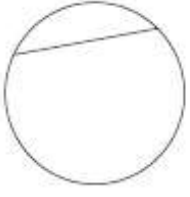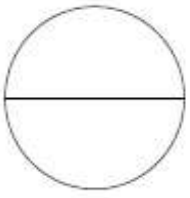

Options :

1.

2.

3.

4.

Question Number : 63 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
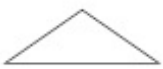
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 64 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
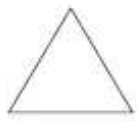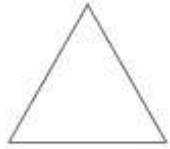
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Question Number : 65 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
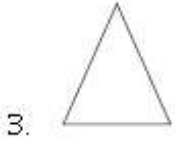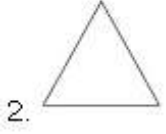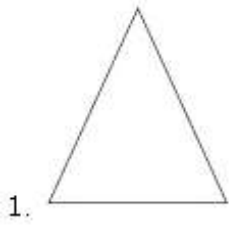
Correct Marks : 4 Wrong Marks : 1

Options :

1.

2.

3.

4.

Sub-Section Number:		8
Sub-Section Id:		416529263
Question Shuffling Allowed :		Yes

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (66 to 80)
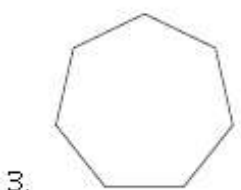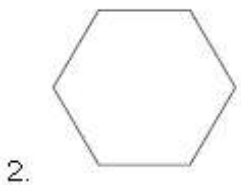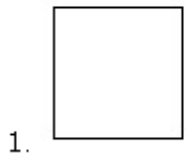
Question Label : Comprehension

.

Sub questions

Question Number : 66 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is a primary color ?

Options :

1. Purple

2. Orange

3. Red

4. Green

Question Number : 67 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
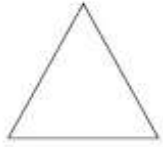
Correct Marks : 4 Wrong Marks : 1

In the Northern Hemisphere the winter sun rises from which direction amongst the following ?

Options :

1. North East

2. North West

3. South East

4. South West

Question Number : 68 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
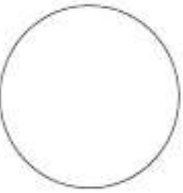**Correct Marks : 4 Wrong Marks : 1**

A byte is which one of the following ?

Options :

1. A group of stars

2. A unit of digital memory

3. An act of an acrobat

4. A unit of sound

Question Number : 69 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
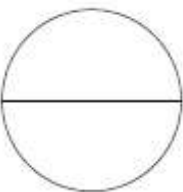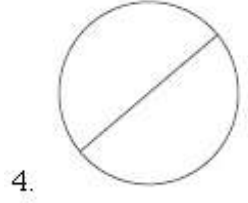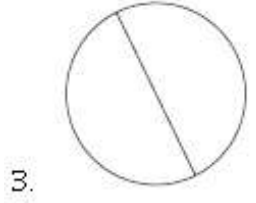**Correct Marks : 4 Wrong Marks : 1**

What does the abbreviation ISRO stand for amongst the following ?

Options :

1. Indian Studies and Result Office

2. International Sea and Rain Office

3. Indian Space Research Organization

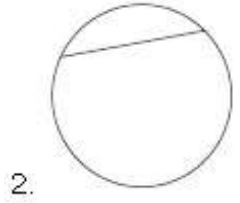4. International Settlements and Relief Organization

Question Number : 70 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
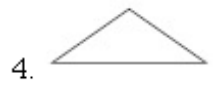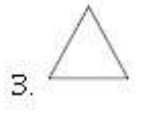**Correct Marks : 4 Wrong Marks : 1**

What does the abbreviation NASA stand for amongst the following ?

Options :

1. National Architecture and Science Association

2. National Archeology Studies Academy

National Aeronautics and Space
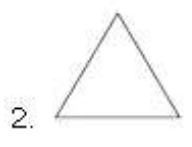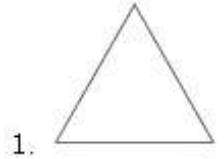3. Administration

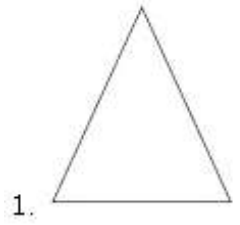4. National Art and Science Association

Question Number : 71 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which one of the following is a horizontal
element that supports the loads above
openings in walls in a building ?

Options :

1. Lintel

2. Column

3. Foundation

4. Pillar

Question Number : 72 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
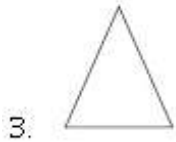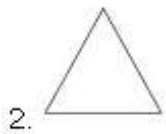**Correct Marks : 4 Wrong Marks : 1**

Which color amongst the following
represents danger ?

Options :
1. Black

2. Green

3. Red

4. White

Question Number : 73 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

Which Indian city is abutting the Arabian
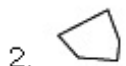Sea ?

Options :
1. Kolkata

2. Mumbai

3. Chennai

4. Surat

**Question Number : 74 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

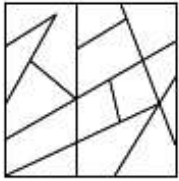In which of the following Indian city are
the 'Shaking Minarets' located ?

Options :

1. Hyderabad

2. Lucknow

3. Ahmedabad

4. Delhi

**Question Number : 75 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
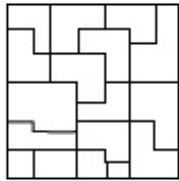No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

In which of the following Indian city is the
'Bara Immambara' located ?

Options :

1. Hyderabad

2. Lucknow

3. Ahmedabad

4. Delhi

**Question Number : 76 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
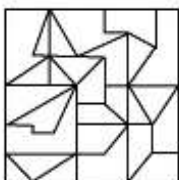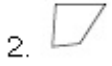**Correct Marks : 4 Wrong Marks : 1**

Cavity walls are which one of the
following ?

Options :

1. Walls with holes

2. Walls with air gap

3. Walls with windows

4. Walls with doors

Question Number : 77 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
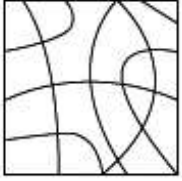
Correct Marks : 4 Wrong Marks : 1

Green buildings are associated with which of the following :

Options :

1. Landscape

2. Beauty

3. Environmental suitability

4. Location

Question Number : 78 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Frame structure in high rise building pertains to which one of the following ?

Options :

1. Structure with squares on the facade

2. Columns and Beams structure

3. Load bearing wall structure

4. A square building

Question Number : 79 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Chajjas above windows are meant to protect the building from which of the following ?

Options :

1. Wind

2. Birds

3. Sun

4. Typhoon

Question Number : 80 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following is not a planned city ?

Options :

1. Gandhi nagar

2. Chandigarh

3. Bhubaneshwar

4. Kanpur

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
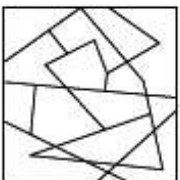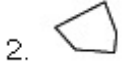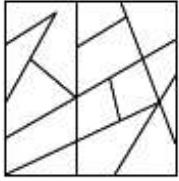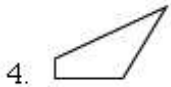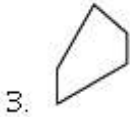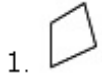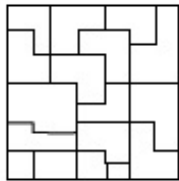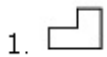**Question Numbers : (66 to 80)**

Question Label : Comprehension
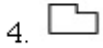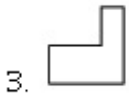
.

Sub questions

Question Number : 66 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
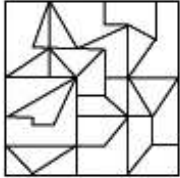**Correct Marks : 4 Wrong Marks : 1**

निम्नलिखित में से कौन सा रंग प्राथमिक है?

Options :

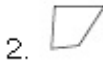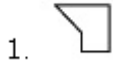1. बैंगनी

2. नारंगी

3. लाल

4. हरा

Question Number : 67 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 1

उत्तरी गोलार्द्ध में सर्दियों का सूर्य निम्नलिखित दिशा में किस दिशा से उगता है?

Options :

1. उत्तर पूर्व

2. उत्तर पश्चिम

3. दक्षिण पूर्व

4. दक्षिण पश्चिम

Question Number : 68 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
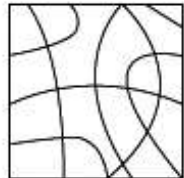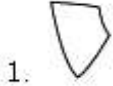
Correct Marks : 4 Wrong Marks : 1

एक बाइट निम्नलिखित में से कौन सा है?

Options :

1. सितारों का एक समूह

2. डिजिटल मेमोरी की एक इकाई

3. एक एक्रोबैट का एक अधिनियम

4. ध्वनि की एक इकाई

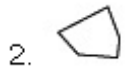**Question Number : 69 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से किस के लिए संक्षेप में ISRO खड़ा है?

Options :

1. भारतीय अध्ययन और परिणाम कार्यालय

2. अंतर्राष्ट्रीय सागर और वर्षा कार्यालय

3. भारतीय अंतरिक्ष अनुसंधान संगठन

4. अंतर्राष्ट्रीय निपटान और राहत संगठन

Question Number : 70 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
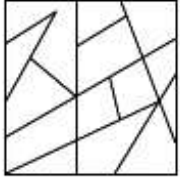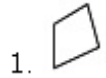
Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से NASA का संक्षिप्त नाम क्या है?

Options :

1. नेशनल आर्किटेक्चर एंड साइंस एसोसिएशन

2. नेशनल पुरातत्व अध्ययन अकादमी

3. नेशनल एयरोनॉटिक्स एंड स्पेस एडमिनिस्ट्रेशन

4. नेशनल आर्ट एंड साइंस एसोसिएशन

Question Number : 71 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
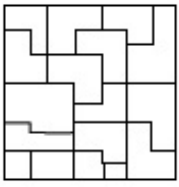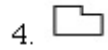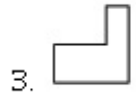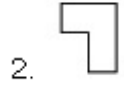
Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कौन सा क्षैतिज तत्व है जो इमारत में दीवारों में खुलने वाले भारों को सहारा देता है?

Options :
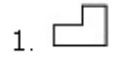
1. सरदल

2. कॉलम

3. फाउंडेशन

4. स्तंभ

Question Number : 72 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

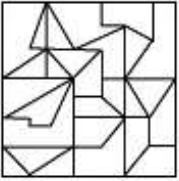**Correct Marks : 4 Wrong Marks : 1**

निम्नलिखित में से कौन सा रंग खतरे का प्रतिनिधित्व करता है?

Options :

1. काला
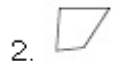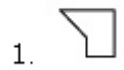
2. हरा

3. लाल

4. सफ़ेद

Question Number : 73 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

कौन सा भारतीय शहर अरब सागर से सटा हुआ है?

Options :

1. कोलकाता

2. मुंबई

3. चेन्नई

4. सूरत

Question Number : 74 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
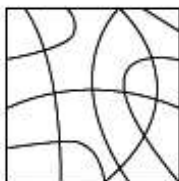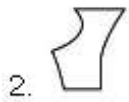
Correct Marks : 4 Wrong Marks : 1

निम्नलिखित किस भारतीय शहर में 'शेकिंग मीनारेट्स' स्थित है?

Options :

1. हैदराबाद

2. लखनऊ

3. अहमदाबाद

4. दिल्ली

Question Number : 75 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित भारतीय शहर में से किसमें 'बड़ा इमाम्बारा' स्थित है?

Options :

1. हैदराबाद

2. लखनऊ

3. अहमदाबाद

4. दिल्ली

Question Number : 76 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

गुहा दीवारें निम्नलिखित में से कौन सी हैं?

Options :

1. छेद के साथ दीवारें

2. हवा के अंतर के साथ दीवारें

3. खिड़कियों के साथ दीवारें

4. दरवाजे के साथ दीवारें

Question Number : 77 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ग्रीन बिल्डिंग निम्नलिखित में से किसके साथ जुड़े हुए हैं?

Options :

1. लैंडस्केप

2. सौंदर्य

3. पर्यावरण उपयुक्ता

4. स्थान

Question Number : 78 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

उच्च वृद्धि इमारत में एक फ्रेम संरचना निम्नलिखित में से किस एक से संबंधित है?

Options :

1. अग्रभाग पर वर्गों के साथ संरचना

2. कॉलम और बीम संरचना

3. भार असर दीवार संरचना

4. एक वर्ग इमारत

Question Number : 79 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

खिड़कियों के ऊपर छज्जा निम्नलिखित में से किससे इमारत की रक्षा करने के लिए हैं?

Options :

1. पवन

2. पक्षी

3. सूर्य

4. आंधी

Question Number : 80 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कौन सा योजनाबद्ध शहर नहीं है?

Options :

1. ગાંધીનગર

2. ચંડીગઢ

3. ભુવનેશ્વર

4. કાનપુર

Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (66 to 80)

Question Label : Comprehension

.

Sub questions

**Question Number : 66 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી ક્યો રંગ મૂળ રંગ છે?

Options :

1. જાંબલી

2. નારંગી

3. લાલ

4. લીલો

**Question Number : 67 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી કઈ દિશા તરફથી ઉત્તર ગોળાર્ધમાં શિયાળાનો
સૂર્ય ઊગે છે?

Options :

1. ઉત્તર-પૂર્વ

2. ઉત્તર-પશ્ચિમ

3. દક્ષિણ-પૂર્વ

4. દક્ષિણ-પશ્ચિમ

Question Number : 68 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

બાઈટ (byte) એ નીચેનામાંથી શું છે?

Options :

1. તારાઓનો સમૂહ

2. ડિજિટલ મેમરીનો એકમ

3. કસરતબાજનો એક ખેલ

4. ધ્વનિનો એકમ

Question Number : 69 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ISRO એ નીચેનામાંથી શાનું સંક્ષિપ્ત રૂપ છે?

Options :

1. Indian Studies and Result Office

2. International Sea and Rain Office

3. Indian Space Research Organization

4. International Settlements and Relief Organization

Question Number : 70 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

NASA એ નીચેનામાંથી શાનું સંક્ષિપ્ત રૂપ છે?

Options :

1. National Architecture and Science Association

2. National Archeology Studies Academy

National Aeronautics and Space
3. Administration

4. National Art and Science Association

Question Number : 71 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી કયું ક્ષૈતિજ તત્વ છે જે મકાનની દિવાલોનાં ખુલ્લા ભાગ પરનાં ભારને ટેકો આપે છે?

Options :

1. લીન્ટેલ

2. કોલમ

3. ફાઉન્ડેશન

4. પિલાર

Question Number : 72 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી ક્યો રંગ ખતરાનું પ્રતિનિધિત્વ કરે છે?

Options :

1. કાળો

2. લીલો

3. લાલ

4. સફેદ

Question Number : 73 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી ભારતનું કયું શહેર અરેબિયન સમુદ્ર ને અડીને આવેલ છે?

Options :

1. કોલકત્તા

2. મુંબઈ

3. ચેન્નાઈ

4. સૂરત

Question Number : 74 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી ભારતનાં કયા શહેરમાં 'ઝૂલતા મિનારા' આવેલ છે?

Options :

1. હૈદરાબાદ

2. લખનૌ

3. અમદાવાદ

4. દિલ્હી

Question Number : 75 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી કયા ભારતીય શહેરમાં 'બડા ઈમામ્બરા' આવેલ છે?

Options :

1. હૈદરાબાદ

2. લખનૌ

3. અમદાવાદ

4. દિલ્હી

Question Number : 76 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

કેવીટી (Cavity) દિવાલો એ નીચેનામાંથી શું છે?

Options :

1. કાણા વાળી દિવાલો

2. હવા અંતરવાળી દિવાલો

3. બારીઓ વાળી દિવાલો

4. બારણાં વાળી દિવાલો

Question Number : 77 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ગ્રીન બિલ્ડિંગસ્ નીચેનામાંથી શાની સાથે સંકળાયેલા છે?

Options :

1. લેન્ડસ્કેપ

2. સૌન્દર્ય

3. પર્યાવરણ અનુકૂલનતા

4. સ્થાન

Question Number : 78 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

ઊંચા મકાનોમાં ફ્રેમ સ્ટ્રક્ચર એ નીચેનામાંથી શાની સાથે સંબંધ ધરાવે છે?

Options :

1. મોખરાના ભાગમાં ચોરસ સ્ટ્રક્ચર

2. કોલમ અને બીમ સ્ટ્રક્ચર

3. ભાર સહન કરતું (Load bearing) દિવાલ સ્ટ્રક્ચર

4. ચોરસ મકાન (square building)

Question Number : 79 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

બારી ઉપરનાં છજા, મકાનને નીચેનામાંથી કોની સામે રક્ષણ આપે તેમ અપેક્ષિત છે?

Options :

1. પવન

2. પક્ષી

3. સૂર્ય

4. વંટોળ (આંધી)

Question Number : 80 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

નીચેનામાંથી ક્યું શહેર આયોજનબધ્ધ નથી?

Options :

1. ગાંધીનગર

2. ચંડીગઢ

3. ભુવનેશ્વર

4. કાનપુર

<div align="center">Drawing</div>

Section Id :	416529195
Section Number :	3
Section type :	Offline
Mandatory or Optional:	Mandatory
Number of Questions:	3
Number of Questions to be attempted:	3
Section Marks:	70
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	416529264
Question Shuffling Allowed :	No

Question Number : 81 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 20

(a) In the space provided in the answer sheet for this question, draw margin lines to form a frame. In this frame create an aesthetic composition using only curved lines. The shapes created by these curved lines can be of any size, and may be placed separate, overlapping or within each other. The idea is to produce an aesthetic and visually exciting composition of these shapes in the frame without making it represent any realistic form like house face etc. The composition should be filled with some colors of your choice so that the visual quality of the composition is enhanced.

20 Marks

Question Number : 81 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 20

(a) इस प्रश्न के उत्तर पत्र में दिए गए स्थान में एक फ्रेम बनाने के लिए मार्जिन लाइनें खींचें। इस फ्रेम में केवल घुमड़ाव लाइनों का उपयोग करते हुए एक सौंदर्य रचना बनाएं। इन घुमावदार लाइनों से बने आकार किसी भी आकार के हो सकते हैं, और अलग-अलग, अतिव्यापी या एक-दूसरे के भीतर हो सकते हैं। इस रचना का विचार फ्रेम में इन आकृतियों की एक सौंदर्य और दृष्टि से रोमांचक रचना का उत्पादन करना है, बिना किसी वास्तविक यथार्थवादी रूप का प्रतिनिधित्व करना, जैसे घर का चेहरा इत्यादी। संरचना को अपनी पसंद के कुछ रंगों से भरा जाना चाहिए ताकि संरचना की दृश्य गुणवत्ता बढ़ाई जा सके। 20 Marks
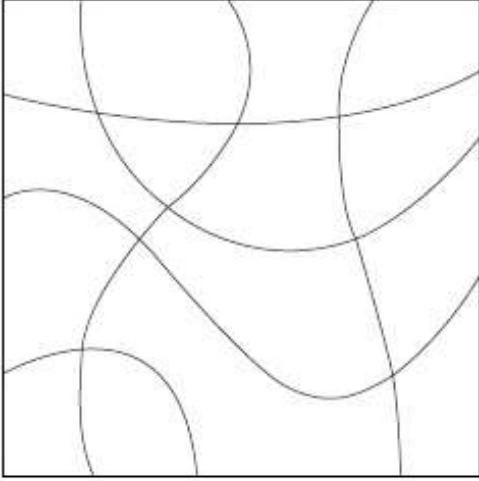
Question Number : 81 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 20

(a) આ પ્રશ્નના જવાબ માટે આપવામાં આપેલ જગ્યામાં ફ્રેમ બનાવવા માટે હાંસિયા-રેખાઓ દોરો. આ ફ્રેમમાં ફક્ત વક્ર રેખાઓનો ઉપયોગ કરીને જ સુંદર સંયોજન બનાવો આ વક્ર રેખાઓથી રચાતા આકારો ગમે તે માપના હોઈ શકે છે. અને તે એક બીજાથી જુદા, ઉપર, કે એક બીજાની અંદર મુકી શકો છો. હેતુ એ છે કે ફ્રેમમાં આ આકારોનો ઉપયોગ કરી ઘર, ચહેરા, જેવા વાસ્તવિક રૂપ ન બને તે રીતે સુંદર અને જોવામાં રોમાંચકારી હોય તેવું સંયોજન બનાવવું. સંયોજન ને મનપસંદ રંગોથી ભરો કે જેથી તેની ગુણવત્તામાં વધારો થાય.   20 Marks

Question Number : 82 Question Type : SUBJECTIVE Display Question Number : Yes
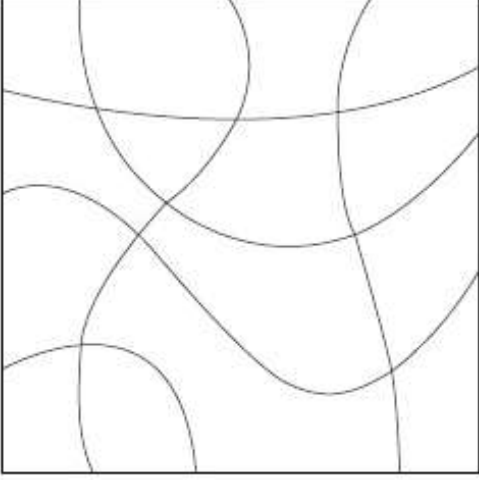**Correct Marks : 20**

(b) Draw the graphic image shown below to double its size in the space provided for the answer of this question. Each component line should be drawn double its length and correctly positioned direction wise as shown in the question figure.

20 Marks

Question Number : 82 Question Type : SUBJECTIVE Display Question Number : Yes
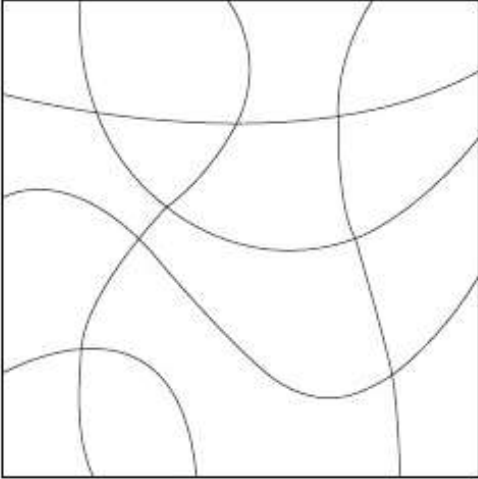**Correct Marks : 20**

(b) नीचे दी गई छवि को, इस प्रश्न के उत्तर के लिए दिए गए स्थान में, इसके दुगने आकार का बनाओ। उत्तर में छवि की हर लकीर का आकार एवं दिशा प्रश्न में दी गयी छवि से दुगनी एवं सही जगह पर खींची जाना चाहिए।

20 Marks

Question Number : 82 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 20

(b) નીચે આપેલ ગ્રાફિક ઇમેજથી બમણા માપનું ચિત્ર તમને આપવામાં આવેલ જગ્યામાં દોરો. દરેક (સહભાગી) રેખા તેનાથી બમણા માપની દોરવી અને પ્રશ્ન આકૃતિપ્રમાણે તેને સાચી રીતે યોગ્ય દિશામાં મુકવી.   20 Marks

Question Number : 83 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 30

(c) Design an appropriate pattern for a curtain for a small girl's room. Draw and color it.   **30 Marks**

OR

Draw a picture of your favorite film star's face as realistic as possible.

OR

Draw from imagination a picture of some people sitting around a bonfire.

Question Number : 83 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 30

(c) एक छोटी लड़की के कमरे के लिए एक पर्दे के लिए एक उपयुक्त पैटर्न डिज़ाइन करें। इसे खींचे और रंग दें।   **30 Marks**

या

यथासंभव यथार्थवादी अपने पसंदीदा फिल्म स्टार की चेहरे की एक तस्वीर बनाएं।

या

एक बोनफायर के आसपास बैठे कुछ लोगों की तस्वीर कल्पना से खींचे।

Question Number : 83 Question Type : SUBJECTIVE Display Question Number : Yes
Correct Marks : 30

(c) એક નાની છોકરીના રૂમનાં પડદાની યોગ્ય ભાત ડિઝાઇન કરો. તે દોરો અને રંગો. **30 Marks**

અથવા

તમારી પસંદગીના ફિલ્મી સિતારાના ચહેરાનું શક્ય વાસ્તવિક ચિત્ર દોરો.

અથવા

ઉત્સવ સૂચક હોળી (bonfire) ની આસપાસ બેઠેલા કેટલાક લોકોનું સ્મૃતિ આધારીત ચિત્ર દોરો.