

Core Mathematics

Section Id :

632386127

Section Number :	2
Section type :	Online
Mandatory or Optional :	Optional
Number of Questions :	35
Number of Questions to be attempted :	25
Section Marks :	125
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	632386304
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 66 Question Id : 6323866961 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Let $A = \{1, 2, 3\}$. Consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is

1. reflexive only
2. reflexive and transitive
3. symmetric and transitive
4. neither symmetric nor transitive

Options :

63238627841. 1

63238627842. 2

63238627843. 3

63238627844. 4

Question Number : 66 Question Id : 6323866961 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

मानिए की $A = \{1, 2, 3\}$ संबंध $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$ पर विचार कीजिए। तो R

1. केवल स्वतुल्य है
2. स्वतुल्य और संक्रामक है
3. सममित और संक्रामक है
4. न तो सममित और न ही संक्रामक है

Options :

63238627841. 1

63238627842. 2

63238627843. 3

63238627844. 4

Question Number : 67 Question Id : 6323866962 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If $f: \mathbb{R} \rightarrow \mathbb{R}$ is defined by $f(x) = \sin x + x$, then $f(f(x))$ is:

1. $2\sin x + 2x$
2. $\sin^2 x + x^2$
3. $\sin(\sin x + x) + \sin x + x$
4. $\sin^2 x + 2\sin x + x$

Options :

63238627845. 1

63238627846. 2

63238627847. 3

63238627848. 4

Question Number : 67 Question Id : 6323866962 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

अगर $f: \mathbb{R} \rightarrow \mathbb{R}$ परिभाषित है $f(x) = \sin x + x$, तो $f(f(x))$ है-

1. $2\sin x + 2x$
2. $\sin^2 x + x^2$
3. $\sin(\sin x + x) + \sin x + x$
4. $\sin^2 x + 2\sin x + x$

Options :

63238627845. 1

63238627846. 2

63238627847. 3

63238627848. 4

Question Number : 68 Question Id : 6323866963 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Value of $\frac{e^{\sin(\tan^{-1}x + \cot^{-1}x)}}{e^{\sin(\sin^{-1}x + \cos^{-1}x)}}$, $x \in [-1, 1]$, is:

1. 0

2. $\frac{\pi}{2}$

3. 1

4. $-\frac{\pi}{2}$

Options :

63238627849. 1

63238627850. 2

63238627851. 3

63238627852. 4

Question Number : 68 Question Id : 6323866963 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

$$\frac{e^{\sin(\tan^{-1}x + \cot^{-1}x)}}{e^{\sin(\sin^{-1}x + \cos^{-1}x)}}, x \in [-1, 1], \text{ का मान है :}$$

1. 0

2. $\frac{\pi}{2}$

3. 1

4. $-\frac{\pi}{2}$

Options :

63238627849. 1

63238627850. 2

63238627851. 3

63238627852. 4

Question Number : 69 Question Id : 6323866964 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Match List I with List II

LIST I		LIST II	
A.	$\sin^{-1} x + \cos^{-1} x, x \in [-1, 1]$	I.	$-\frac{\pi}{2}$
B.	$\tan^{-1} \sqrt{3} - \cot^{-1} (-\sqrt{3})$	II.	$-\frac{\pi}{6}$
C.	$\cos^{-1} \left(\cos \frac{13\pi}{6} \right)$	III.	$\frac{\pi}{2}$
D.	$\sin^{-1} \left(-\frac{1}{2} \right)$	IV.	$\frac{\pi}{6}$

Choose the correct answer from the options given below:

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

Options :

63238627853. 1

63238627854. 2

63238627855. 3

63238627856. 4

Question Number : 69 Question Id : 6323866964 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

सूची I का सूची II के साथ मिलान कीजिए

सूची I		सूची II	
A.	$\sin^{-1} x + \cos^{-1} x, x \in [-1, 1]$	I.	$-\frac{\pi}{2}$
B.	$\tan^{-1} \sqrt{3} - \cot^{-1} (-\sqrt{3})$	II.	$-\frac{\pi}{6}$
C.	$\cos^{-1} \left(\cos \frac{13\pi}{6} \right)$	III.	$\frac{\pi}{2}$
D.	$\sin^{-1} \left(-\frac{1}{2} \right)$	IV.	$\frac{\pi}{6}$

नीचे दिये गये विकल्पों में सही उत्तर का चयन कीजिए :

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

Options :

63238627853. 1
63238627854. 2
63238627855. 3
63238627856. 4

Question Number : 70 Question Id : 6323866965 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The function $f(x) = \frac{x-1}{x(x^2-1)}$, $x \neq 1$, $f(1) = 1$, is discontinuous at

1. Exactly one point
2. Exactly two points
3. Exactly three points
4. No point

Options :

63238627857. 1
63238627858. 2
63238627859. 3
63238627860. 4

Question Number : 70 Question Id : 6323866965 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

फलन $f(x) = \frac{x-1}{x(x^2-1)}$, $x \neq 1$, $f(1) = 1$, यह असंतत है :-

1. बिल्कुल एक बिन्दु पर
2. बिल्कुल दो बिन्दुओं पर
3. बिल्कुल तीन बिंदुओं पर
4. किसी बिन्दु पर नहीं।

Options :

63238627857. 1

63238627858. 2

63238627859. 3

63238627860. 4

Question Number : 71 Question Id : 6323866966 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1**Question Key Details :**

Key	Value
Comprehension	MCQ2

The derivative of $\sin(\tan^{-1} e^{2x})$ with respect to x is:

1.
$$\frac{2e^{2x} \sin(\tan^{-1} e^{2x})}{1+e^{4x}}$$

2.
$$\frac{2e^{2x} \cos(\tan^{-1} e^{2x})}{1+e^{4x}}$$

3.
$$\frac{2e^{2x} \sin(\tan^{-1} e^{2x})}{1+e^{x^2}}$$

4.
$$\frac{2e^{2x} \cos(\tan^{-1} e^{2x})}{1+e^{2x}}$$

Options :

63238627861. 1

63238627862. 2

63238627863. 3

63238627864. 4

Question Number : 71 Question Id : 6323866966 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

$\sin(\tan^{-1} e^{2x})$ x के सापेक्ष में व्युत्पन्न है :

1. $\frac{2e^{2x} \sin(\tan^{-1} e^{2x})}{1+e^{4x}}$

2. $\frac{2e^{2x} \cos(\tan^{-1} e^{2x})}{1+e^{4x}}$

3. $\frac{2e^{2x} \sin(\tan^{-1} e^{2x})}{1+e^{x^2}}$

4. $\frac{2e^{2x} \cos(\tan^{-1} e^{2x})}{1+e^{2x}}$

Options :

63238627861. 1

63238627862. 2

63238627863. 3

63238627864. 4

Question Number : 72 Question Id : 6323866967 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If $\sqrt{1-x^2} + \sqrt{1-y^2} = a(x-y)$, then $\frac{dy}{dx} =$

1. $\sqrt{\frac{1-x^2}{1-y^2}}$

2. $\sqrt{\frac{1-y^2}{1-x^2}}$

3. $\sqrt{\frac{1-x^2}{1+y^2}}$

4. $\sqrt{\frac{1+x^2}{1-y^2}}$

Options :

63238627865. 1

63238627866. 2

63238627867. 3

63238627868. 4

Question Number : 72 Question Id : 6323866967 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

अगर $\sqrt{1-x^2} + \sqrt{1-y^2} = a(x-y)$, तो $\frac{dy}{dx} =$

1. $\sqrt{\frac{1-x^2}{1-y^2}}$

2. $\sqrt{\frac{1-y^2}{1-x^2}}$

3. $\sqrt{\frac{1-x^2}{1+y^2}}$

4. $\sqrt{\frac{1+x^2}{1-y^2}}$

Options :

63238627865. 1

63238627866. 2

63238627867. 3

63238627868. 4

Question Number : 73 Question Id : 6323866968 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

A manufacturer can sell x items at a price of ₹ $3x+5$ each. The cost price of x items is ₹ $x^2 + 5x$. If x is the number of items she should sell to get no profit and no loss, then:

1. $x = 10$

2. $x = 30$

3. $x = 0$

4. $x = -10$

Options :

63238627869. 1

63238627870. 2

63238627871. 3

63238627872. 4

Question Number : 73 Question Id : 6323866968 Question Type : MCQ Option Shuffling : No Is**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum****Instruction Time : 0****Correct Marks : 5 Wrong Marks : 1****Question Key Details :**

Key	Value
Comprehension	MCQ2

एक उत्पादक X इकाइयाँ रू $3X+5$ प्रति इकाई की दर से बेच सकता है। X इकाइयों का लागत मूल्य रू X^2+5X है। ना लाभ, ना हानी के लिए इकाइयों की संख्या X है:

1. $x = 10$

2. $x = 30$

3. $x = 0$

4. $x = -10$

Options :

63238627869. 1

63238627870. 2

63238627871. 3

63238627872. 4

Question Number : 74 Question Id : 6323866969 Question Type : MCQ Option Shuffling : No Is**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum****Instruction Time : 0****Correct Marks : 5 Wrong Marks : 1**

Question Key Details :

Key	Value
Comprehension	MCQ2

The approximate volume of a cube of side a meters on increasing the side by 4% is:

1. $1.04a^3 \text{ m}^3$
2. $1.004a^3 \text{ m}^3$
3. $1.12a^3 \text{ m}^3$
4. $1.12a^2 \text{ m}^3$

Options :

63238627873. 1
63238627874. 2
63238627875. 3
63238627876. 4

Question Number : 74 Question Id : 6323866969 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

एक मीटर की भुजा के घन की भुजा 4% बढ़ाते हैं तो उसका आयतन होगा लगभग :

1. $1.04a^3 \text{ m}^3$
2. $1.004a^3 \text{ m}^3$
3. $1.12a^3 \text{ m}^3$
4. $1.12a^2 \text{ m}^3$

Options :

63238627873. 1

63238627874. 2

63238627875. 3

63238627876. 4

Question Number : 75 Question Id : 6323866970 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The maximum slope of the curve $y = -x^3 + 3x^2 + 9x - 27$ is:

1. 0

2. 12

3. 16

4. 32

Options :

63238627877. 1

63238627878. 2

63238627879. 3

63238627880. 4

Question Number : 75 Question Id : 6323866970 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
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वक्र $y = -x^3 + 3x^2 + 9x - 27$ का अधिकतम ढलान है :

1. 0
2. 12
3. 16
4. 32

Options :

63238627877. 1

63238627878. 2

63238627879. 3

63238627880. 4

Question Number : 76 Question Id : 6323866971 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Match List I with List II

LIST I		LIST II	
A.	$\int \frac{\sin x}{1 + \cos x} dx$	I.	$e^{\tan^{-1} x} + C$
B.	$\int \frac{1}{1 - \tan x} dx$	II.	$\log(\log x + 1) + C$
C.	$\int \frac{e^{\tan^{-1} x}}{1 + x^2} dx$	III.	$-\log 1 + \cos x + C$
D.	$\int \frac{1}{x + x \log x} dx$	IV.	$\frac{x}{2} - \frac{1}{2} \log \cos x - \sin x + C$

Choose the correct answer from the options given below:

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

Options :

63238627881. 1

63238627882. 2

63238627883. 3

63238627884. 4

Question Number : 76 Question Id : 6323866971 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

सूची I का सूची II के साथ मिलान कीजिए

सूची I		सूची II	
A.	$\int \frac{\sin x}{1 + \cos x} dx$	I.	$e^{\tan^{-1} x} + C$
B.	$\int \frac{1}{1 - \tan x} dx$	II.	$\log(\log x + 1) + C$
C.	$\int \frac{e^{\tan^{-1} x}}{1 + x^2} dx$	III.	$-\log 1 + \cos x + C$
D.	$\int \frac{1}{x + x \log x} dx$	IV.	$\frac{x}{2} - \frac{1}{2} \log \cos x - \sin x + C$

नीचे दिये गये विकल्पों में सही उत्तर का चयन कीजिए :

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

Options :

63238627881. 1

63238627882. 2

63238627883. 3

63238627884. 4

Question Number : 77 Question Id : 6323866972 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

$$\int \left(\frac{1+x+x^2}{1+x^2} \right) e^{\tan^{-1}x} dx =$$

1. $x + e^{\tan^{-1}x} + c$

2. $e^{\tan^{-1}x} - x + c$

3. $e^{\tan^{-1}x} + c$

4. $x e^{\tan^{-1}x} + c$

Options :

63238627885. 1

63238627886. 2

63238627887. 3

63238627888. 4

Question Number : 77 Question Id : 6323866972 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

$$\int \left(\frac{1+x+x^2}{1+x^2} \right) e^{\tan^{-1}x} dx =$$

1. $x + e^{\tan^{-1}x} + c$

2. $e^{\tan^{-1}x} - x + c$

3. $e^{\tan^{-1}x} + c$

4. $x e^{\tan^{-1}x} + c$

Options :

63238627885. 1

63238627886. 2

63238627887. 3

63238627888. 4

Question Number : 78 Question Id : 6323866973 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The area of the region bounded by the parabola $y^2 = 4ax$ and its latus rectum is:

1. $\frac{4a^2}{3}$ sq. units

2. $\frac{8a^2}{3}$ sq. units

3. $\frac{2a^2}{3}$ sq. units

4. $\frac{9a^2}{5}$ sq. units

Options :

63238627889. 1

63238627890. 2

63238627891. 3

63238627892. 4

Question Number : 78 Question Id : 6323866973 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

परवलय $y^2 = 4ax$ और इसके नाभिलंब द्वारा घिरे क्षेत्र का क्षेत्रफल है :

1. $\frac{4a^2}{3}$ वर्ग इकाई

2. $\frac{8a^2}{3}$ वर्ग इकाई

3. $\frac{2a^2}{3}$ वर्ग इकाई

4. $\frac{9a^2}{5}$ वर्ग इकाई

Options :

63238627889. 1

63238627890. 2

63238627891. 3

63238627892. 4

Question Number : 79 Question Id : 6323866974 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The area of the region bounded by the lines $x = 2y + 3$, $x = 0$, $y = 1$ and $y = -1$ is:

1. 4 sq. units
2. 6 sq. units
3. 8 sq. units
4. $\frac{3}{2}$ sq. units

Options :

63238627893. 1

63238627894. 2

63238627895. 3

63238627896. 4

Question Number : 79 Question Id : 6323866974 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

रेखाओं $x = 2y + 3$, $x = 0$, $y = 1$ और $y = -1$ से घिरे हुए क्षेत्र का क्षेत्रफल है:

1. 4 वर्ग इकाई
2. 6 वर्ग इकाई
3. 8 वर्ग इकाई
4. $\frac{3}{2}$ वर्ग इकाई

Options :

63238627893. 1

63238627894. 2

63238627895. 3

63238627896. 4

Question Number : 80 Question Id : 6323866975 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Particular solution of the differential equation $\log\left(\frac{dy}{dx}\right) = x + y$, given that when $x = 0, y = 0$ is:

1. $e^x + e^{-y} = 2$

2. $e^{-x} + e^y = 2$

3. $e^x + e^y = 2$

4. $e^{-x} + e^{-y} = 2$

Options :

63238627897. 1

63238627898. 2

63238627899. 3

63238627900. 4

Question Number : 80 Question Id : 6323866975 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि $x = 0, y = 0$, है, तो अवकलन समीकरण $\log\left(\frac{dy}{dx}\right) = x + y$, का विशिष्ट हल है:

1. $e^x + e^{-y} = 2$

2. $e^{-x} + e^y = 2$

3. $e^x + e^y = 2$

4. $e^{-x} + e^{-y} = 2$

Options :

63238627897. 1

63238627898. 2

63238627899. 3

63238627900. 4

Question Number : 81 Question Id : 6323866976 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Solution of $\frac{dy}{dx} = (1 + x^2)(1 + y^2)$ is:

1. $\tan^{-1} y = x + \frac{x^3}{3} + c$

2. $\tan^{-1} y = x - \frac{x^3}{3} + c$

3. $\tan^{-1} y = x^2 + \frac{x^3}{3} + c$

4. $\tan^{-1} y = x^2 - \frac{x^3}{3} + c$

Options :

63238627901. 1

63238627902. 2

63238627903. 3

63238627904. 4

Question Number : 81 Question Id : 6323866976 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

$\frac{dy}{dx} = (1+x^2)(1+y^2)$ का हल है :

1. $\tan^{-1} y = x + \frac{x^3}{3} + c$

2. $\tan^{-1} y = x - \frac{x^3}{3} + c$

3. $\tan^{-1} y = x^2 + \frac{x^3}{3} + c$

4. $\tan^{-1} y = x^2 - \frac{x^3}{3} + c$

Options :

63238627901. 1

63238627902. 2

63238627903. 3

63238627904. 4

Question Number : 82 Question Id : 6323866977 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If a line makes angles 90° , 60° and θ with x , y and z axis respectively, where θ is acute, then value of θ is:

1. $\frac{\pi}{6}$

2. $\frac{\pi}{4}$

3. $\frac{\pi}{3}$

4. $\frac{\pi}{2}$

Options :

63238627905. 1

63238627906. 2

63238627907. 3

63238627908. 4

Question Number : 82 Question Id : 6323866977 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

अगर एक रेखा 90° , 60° और θ , x , y और z अक्ष के क्रमशः कोण बनाती है, जहाँ θ एक न्यूनकोण है तो θ का मान है :

1. $\frac{\pi}{6}$

2. $\frac{\pi}{4}$

3. $\frac{\pi}{3}$

4. $\frac{\pi}{2}$

Options :

63238627905. 1

63238627906. 2

63238627907. 3

63238627908. 4

Question Number : 83 Question Id : 6323866978 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Match List I with List II

LIST I		LIST II	
A.	The area of parallelogram determined by vectors $2\hat{i}$ and $3\hat{j}$	I.	2
B.	The value of $(\hat{i} \times \hat{j}) \cdot \hat{k} + (\hat{j} \times \hat{k}) \cdot \hat{i}$	II.	4
C.	The value of a for which the vectors $2\hat{i} - 3\hat{j} + 4\hat{k}$ and $a\hat{i} - 6\hat{j} + 8\hat{k}$ are collinear.	III.	0
D.	The value of λ for which the vectors $2\hat{i} + \hat{j} + \hat{k}$ and $2\hat{i} - 4\hat{j} + \lambda\hat{k}$ are perpendicular	IV.	6

Choose the correct answer from the options given below:

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

Options :

63238627909. 1

63238627910. 2

63238627911. 3

63238627912. 4

Question Number : 83 Question Id : 6323866978 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Match List I with List II

LIST I		LIST II	
A.	सदिशों $2\hat{i}$ और $3\hat{i}$ द्वारा निर्धारित समानांतर चतुर्भुजका क्षेत्रफल	I.	2
B.	$(\hat{i} \times \hat{j}) \cdot \hat{k} + (\hat{j} \times \hat{k}) \cdot \hat{i}$ का मान	II.	4
C.	सदिश $2\hat{i} - 3\hat{j} + 4\hat{k}$ और $a\hat{i} - 6\hat{j} + 8\hat{k}$ के समरेखीय होने के लिए a का मान	III.	0
D.	सदिश $2\hat{i} + \hat{j} + \hat{k}$ और $2\hat{i} + 4\hat{j} + \lambda\hat{k}$ के लंबवत् होने के लिए λ का मान	IV.	6

Choose the correct answer from the options given below:

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

Options :

63238627909. 1

63238627910. 2

63238627911. 3

63238627912. 4

Question Number : 84 Question Id : 6323866979 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

A. Equation of the line passing through the point (1, 2, 3) and parallel to the vector

$$3\hat{i} + 2\hat{j} - 2\hat{k} \text{ is } \frac{x-1}{3} = \frac{y-2}{2} = \frac{z-3}{-2}.$$

B. Equation of line passing through (1, 2, 3) and parallel to the line given by

$$\frac{x+3}{3} = \frac{4-y}{5} = \frac{z+8}{6} \text{ is } \frac{x-1}{3} = \frac{y-2}{5} = \frac{z+3}{6}.$$

C. Equation of line passing through the origin and (5, -2, 3) is $\frac{x}{5} = \frac{y}{-2} = \frac{z}{3}$.

D. Equation of plane passing through the point(1, 2, 3) and perpendicular to the line with direction ratio's 2, 3, -1 is $2(x-1)+3(y-2)-1(z-3) = 0$.

E. Equation of plane with intercepts 2, 3 and 4 on x, y and z-axis respectively is $2x + 3y + 4z = 1$.

Choose the correct answer from the options given below:

1. A, E only
2. A, C, D only
3. C, D, E only
4. E only

Options :

63238627913. 1

63238627914. 2

63238627915. 3

63238627916. 4

Question Number : 84 Question Id : 6323866979 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

- A. सदिश $3\hat{i} + 2\hat{j} - 2\hat{k}$ $\frac{x-1}{3} = \frac{y-2}{2} = \frac{z-3}{-2}$ के समान्तर और बिंदु (1,2,3) से गुजरने वाली रेखा का समीकरण है
- B. बिंदु (1,2,3) से होकर, रेखा $\frac{x+3}{3} = \frac{4-y}{5} = \frac{z+8}{6}$ के समान्तर रेखा का समीकरण $\frac{x-1}{3} = \frac{y-2}{5} = \frac{z+3}{6}$ है
- C. प्रारंभिक बिंदु और (5, -2, 3) से गुजरने वाली रेखा का समीकरण $\frac{x}{5} = \frac{y}{-2} = \frac{z}{3}$ है
- D. बिंदु (1, 2, 3) से गुजरने वाले, एक रेखा जिसके दिक् अनुपात 2, 3, -1 के लम्बवत् समतल का समीकरण $2(x-1)+3(y-2)-1(z-3)=0$ है
- E. समतल जिसके x, y और z- अक्ष पर अंतः खंड क्रमशः 2, 3 और 4 हैं का समीकरण है $2x + 3y + 4z = 1$.

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए :

1. केवल A, E
2. केवल A, C, D
3. केवल C, D, E
4. केवल E

Options :

63238627913. 1
63238627914. 2
63238627915. 3
63238627916. 4

Question Number : 85 Question Id : 6323866980 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The angle between the line $\frac{x+2}{3} = \frac{y-3}{2} = \frac{z+5}{6}$ and the plane $2x + 10y - 11z = 5$ is:

1. $\cos^{-1}\left(\frac{8}{21}\right)$

2. $\sin^{-1}\left(\frac{8}{21}\right)$

3. $\cos^{-1}\left(\frac{21}{82}\right)$

4. $\sin^{-1}\left(\frac{21}{82}\right)$

Options :

63238627917. 1

63238627918. 2

63238627919. 3

63238627920. 4

Question Number : 85 Question Id : 6323866980 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

रेखा $\frac{x+2}{3} = \frac{y-3}{2} = \frac{z+5}{6}$ और समतल $2x + 10y - 11z =$ के बीच का कोण है

1. $\cos^{-1}\left(\frac{8}{21}\right)$

2. $\sin^{-1}\left(\frac{8}{21}\right)$

3. $\cos^{-1}\left(\frac{21}{82}\right)$

4. $\sin^{-1}\left(\frac{21}{82}\right)$

Options :

63238627917. 1

63238627918. 2

63238627919. 3

63238627920. 4

Question Number : 86 Question Id : 6323866981 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The feasible region of an LPP Max $Z = 3x + 2y$ subject to $x \geq 0, y \geq 0, x - 2y \leq 3$ is:

1. Bounded in first quadrant but has no solution
2. Unbounded in first quadrant but has a solution
3. Unbounded in first quadrant and has no solution
4. Bounded and has a solution $x = 0, y = 0, Z = 0$

Options :

63238627921. 1

63238627922. 2

63238627923. 3

63238627924. 4

Question Number : 86 Question Id : 6323866981 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

एक रेखीय प्रोग्राम का उद्देश्य फलन $Z = 3x + 2y$ अवरोधों $x \geq 0, y \geq 0, x - 2y \leq 3$ के साथ का सुसंगत क्षेत्र :

1. प्रथम चतुर्थांश में परिबद्ध है, परन्तु कोई हल नहीं है।
2. प्रथम चतुर्थांश में परिबद्ध है, और इसका हल है।
3. प्रथम चतुर्थांश में अपरिबद्ध है, और कोई हल नहीं है।
4. परिबद्ध है और $x = 0, y = 0, Z = 0$ इसका हल है।

Options :

63238627921. 1

63238627922. 2

63238627923. 3

63238627924. 4

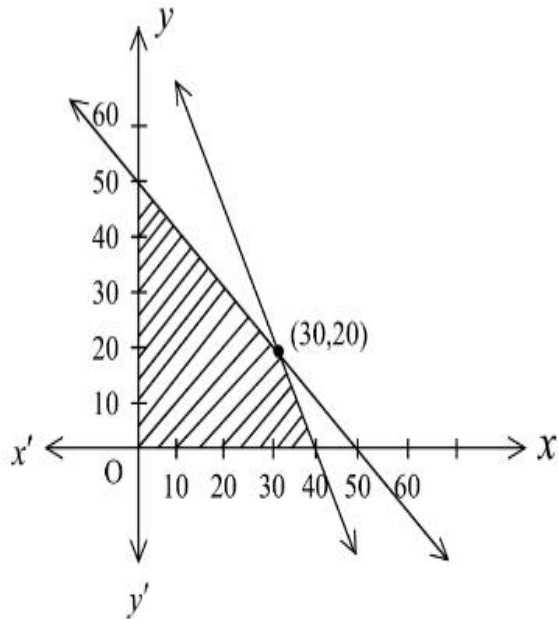
Question Number : 87 Question Id : 6323866982 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

The linear constraints, for which the shaded area in the figure is the feasible region of an LPP, are :



1. $x + y \geq 50$
 $2x + y \leq 80$
 $x, y \geq 0$

2. $x + y \leq 50$
 $2x + y \geq 80$
 $x, y \geq 0$

3. $x + y \leq 50$
 $2x + y \leq 80$
 $x, y \geq 0$

4. $x + y \geq 50$
 $2x + y \geq 80$
 $x, y \geq 0$

Options :

63238627925. 1

63238627926. 2

63238627927. 3

63238627928. 4

Question Number : 87 Question Id : 6323866982 Question Type : MCQ Option Shuffling : No Is

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

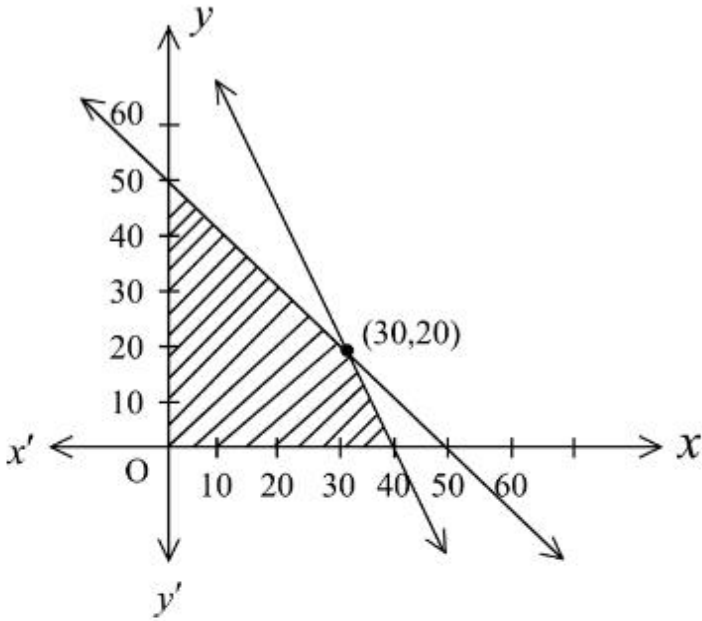
Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

छायांकित क्षेत्र से दिखाए गए सुसंगत क्षेत्र वाले रेखीय प्रोग्रामन के रेखीय व्युत्पन्न हैं :



1. $x + y \geq 50$
 $2x + y \leq 80$
 $x, y \geq 0$

2. $x + y \leq 50$
 $2x + y \geq 80$
 $x, y \geq 0$

3. $x + y \leq 50$
 $2x + y \leq 80$
 $x, y \geq 0$

4. $x + y \geq 50$
 $2x + y \geq 80$
 $x, y \geq 0$

Options :

63238627925. 1

63238627926. 2

63238627927. 3

63238627928. 4

Question Number : 88 Question Id : 6323866983 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Two dice are thrown simultaneously. If X denotes the number of sixes, then the variance of X is:

1. $\frac{5}{18}$

2. $\frac{7}{18}$

3. $\frac{1}{3}$

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

Options :

63238627929. 1

63238627930. 2

63238627931. 3

63238627932. 4

Question Number : 88 Question Id : 6323866983 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

दो पासे फेंकने पर यदि X छः आने के संख्या है, तो X का प्रसरण है :

1. $\frac{5}{18}$

2. $\frac{7}{18}$

3. $\frac{1}{3}$

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

Options :

63238627929. 1

63238627930. 2

63238627931. 3

63238627932. 4

Question Number : 89 Question Id : 6323866984 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Probabilities to solve a specific problem by A, B and C are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ respectively. Probability that at least one will solve the problem is:

1. $\frac{1}{24}$

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

3. $\frac{23}{24}$

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

Options :

63238627933. 1

63238627934. 2

63238627935. 3

63238627936. 4

Question Number : 89 Question Id : 6323866984 Question Type : MCQ Option Shuffling : No Is**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum****Instruction Time : 0****Correct Marks : 5 Wrong Marks : 1****Question Key Details :**

Key	Value
Comprehension	MCQ2

A, B और C द्वारा किसी विशिष्ट समस्या को हल करने की प्रायिकता क्रमशः $\frac{1}{2}$, $\frac{1}{3}$ और $\frac{1}{4}$ है। कम से कम किसी एक द्वारा समस्या हल करने की प्रायिकता है:

1. $\frac{1}{24}$

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

3. $\frac{23}{24}$

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

Options :

63238627933. 1

63238627934. 2

63238627935. 3

63238627936. 4

Question Number : 90 Question Id : 6323866985 Question Type : MCQ Option Shuffling : No Is**Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum**

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

Which of the following statements is NOT CORRECT.

1. A row matrix has only one row.
2. A diagonal matrix has all diagonal elements equal to zero.
3. A symmetric matrix is a square matrix satisfying certain conditions.
4. A skew-symmetric matrix has all diagonal elements equal to zero.

Options :

63238627937. 1

63238627938. 2

63238627939. 3

63238627940. 4

Question Number : 90 Question Id : 6323866985 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

निम्नलिखित में से कौन - सा कथन सही नहीं है ?

1. एक पंक्ति आव्यूह में केवल एक पंक्ति होती है।
2. एक विकर्णी आव्यूह के सभी विकर्ण अवयव शून्य होते हैं।
3. एक सममित आव्यूह कुछ शर्तों के साथ एक वर्ग आव्यूह होती है।
4. एक विषम-सममित आव्यूह के सभी विकर्ण अवयव शून्य होते हैं।

Options :

63238627937. 1

63238627938. 2

63238627939. 3

63238627940. 4

Question Number : 91 Question Id : 6323866986 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If the matrix $A = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$, then A^2 is equal to:

1. $\begin{bmatrix} \cos 2\theta & \sin 2\theta \\ -\sin 2\theta & \cos 2\theta \end{bmatrix}$

2. $\begin{bmatrix} \cos^2 \theta & \sin^2 \theta \\ -\sin^2 \theta & \cos^2 \theta \end{bmatrix}$

3. $\begin{bmatrix} \cos \theta^2 & \sin \theta^2 \\ -\sin \theta^2 & \cos \theta^2 \end{bmatrix}$

4. $\begin{bmatrix} \cos \theta + \sin \theta & \cos \theta - \sin \theta \\ \sin \theta - \cos \theta & \cos \theta + \sin \theta \end{bmatrix}$

Options :

63238627941. 1

63238627942. 2

63238627943. 3

63238627944. 4

Question Number : 91 Question Id : 6323866986 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि आव्यूह $A = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$ तो A^2 बराबर है :

1. $\begin{bmatrix} \cos 2\theta & \sin 2\theta \\ -\sin 2\theta & \cos 2\theta \end{bmatrix}$

2. $\begin{bmatrix} \cos^2 \theta & \sin^2 \theta \\ -\sin^2 \theta & \cos^2 \theta \end{bmatrix}$

3. $\begin{bmatrix} \cos \theta^2 & \sin \theta^2 \\ -\sin \theta^2 & \cos \theta^2 \end{bmatrix}$

4. $\begin{bmatrix} \cos \theta + \sin \theta & \cos \theta - \sin \theta \\ \sin \theta - \cos \theta & \cos \theta + \sin \theta \end{bmatrix}$

Options :

63238627941. 1

63238627942. 2

63238627943. 3

63238627944. 4

Question Number : 92 Question Id : 6323866987 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If the matrix $A = \begin{bmatrix} 0 & x+y & 1 \\ 3 & z & 2 \\ x-y & -2 & 0 \end{bmatrix}$ is skew-symmetric, then :

1. $x = 2, y = 1, z = 0$
2. $x = 2, y = 2, z = 0$
3. $x = -2, y = -1, z = 0$
4. $x = -2, y = -1, z = -1$

Options :

63238627945. 1

63238627946. 2

63238627947. 3

63238627948. 4

Question Number : 92 Question Id : 6323866987 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि आव्यूह $A = \begin{bmatrix} 0 & x+y & 1 \\ 3 & z & 2 \\ x-y & -2 & 0 \end{bmatrix}$ विषम-सममित है तो :

1. $x = 2, y = 1, z = 0$
2. $x = 2, y = 2, z = 0$
3. $x = -2, y = -1, z = 0$
4. $x = -2, y = -1, z = -1$

Options :

63238627945. 1

63238627946. 2

63238627947. 3

63238627948. 4

Question Number : 93 Question Id : 6323866988 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If A is a square matrix of order 3, then $|\text{adj } A|$ is equal to:

1. $|A|$
2. $|A|^2$
3. $|A|^3$
4. $3|A|$

Options :

63238627949. 1

63238627950. 2

63238627951. 3

63238627952. 4

Question Number : 93 Question Id : 6323866988 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि A एक कोटि 3 का वर्ग आव्यूह है तो $|adj A|$ के बराबर है :

1. $|A|$

2. $|A|^2$

3. $|A|^3$

4. $3|A|$

Options :

63238627949. 1

63238627950. 2

63238627951. 3

63238627952. 4

Question Number : 94 Question Id : 6323866989 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If three points $A(a_1, b_1)$, $B(a_2, b_2)$ and $C(a_3, b_3)$ are collinear and $D = \begin{vmatrix} a_1 & b_1 & 1 \\ a_2 & b_2 & 1 \\ a_3 & b_3 & 1 \end{vmatrix}$, then:

1. $D = 0$
2. $D = \pm 1$
3. $D^2 = 0$ or 1
4. $D = (a_1 + a_2 + a_3) - (b_1 + b_2 + b_3)$

Options :

63238627953. 1

63238627954. 2

63238627955. 3

63238627956. 4

Question Number : 94 Question Id : 6323866989 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि तीन बिंदु $A(a_1, b_1)$, $B(a_2, b_2)$ और $C(a_3, b_3)$ समरेखीय हैं, $D = \begin{vmatrix} a_1 & b_1 & 1 \\ a_2 & b_2 & 1 \\ a_3 & b_3 & 1 \end{vmatrix}$ तो

1. $D = 0$
2. $D = \pm 1$
3. $D^2 = 0$ or 1
4. $D = (a_1 + a_2 + a_3) - (b_1 + b_2 + b_3)$

Options :

63238627953. 1

63238627954. 2

63238627955. 3

63238627956. 4

Question Number : 95 Question Id : 6323866990 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

If $A = \begin{bmatrix} \cos \theta & \sin \theta & 0 \\ -\sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$ and B is a square matrix of order 3, then $|AB|$ is equal to:

1. $|B|^2$

2. $|B|$

3. $\sin^2 \theta |B|$

4. $\cos^2 \theta |B|$

Options :

63238627957. 1

63238627958. 2

63238627959. 3

63238627960. 4

Question Number : 95 Question Id : 6323866990 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

यदि $A = \begin{bmatrix} \cos \theta & \sin \theta & 0 \\ -\sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$ और B एक कोटि 3 का वर्ग आव्यूह है तो $|AB|$ बराबर है :

1. $|B|^2$
2. $|B|$
3. $\sin^2 \theta |B|$
4. $\cos^2 \theta |B|$

Options :

63238627957. 1

63238627958. 2

63238627959. 3

63238627960. 4

Sub-Section Number :

2

Sub-Section Id :

632386305

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Number : 96 Question Id : 6323866991 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

The range of the function $f(x) = \frac{1}{3 - \sin 4x}$ is:

1. $\left[\frac{1}{4}, \frac{1}{2}\right]$

2. $\left[\frac{1}{2}, 1\right]$

3. $\left[\frac{1}{4}, \frac{3}{4}\right]$

4. $\left[\frac{1}{2}, \frac{3}{4}\right]$

Options :

63238627961. 1

63238627962. 2

63238627963. 3

63238627964. 4

Question Number : 96 Question Id : 6323866991 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

फलन $f(x) = \frac{1}{3 - \sin 4x}$ का परिसर है :

1. $\left[\frac{1}{4}, \frac{1}{2} \right]$

2. $\left[\frac{1}{2}, 1 \right]$

3. $\left[\frac{1}{4}, \frac{3}{4} \right]$

4. $\left[\frac{1}{2}, \frac{3}{4} \right]$

Options :

63238627961. 1

63238627962. 2

63238627963. 3

63238627964. 4

Question Number : 97 Question Id : 6323866992 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

The equation of the tangent, to the curve $y = x^2 - 2x - 3$ which is perpendicular to the line $x + 2y + 3 = 0$, is

1. $4x - 2y = 7$
2. $2x - y = 7$
3. $2x - y = 5$
4. $4x - 2y = 5$

Options :

63238627965. 1
63238627966. 2
63238627967. 3
63238627968. 4

Question Number : 97 Question Id : 6323866992 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

रेखा $x + 2y + 3 = 0$ के लम्बवत, वक्र $y = x^2 - 2x - 3$ की स्पर्श रेखा का समीकरण है :

1. $4x - 2y = 7$
2. $2x - y = 7$
3. $2x - y = 5$
4. $4x - 2y = 5$

Options :

63238627965. 1
63238627966. 2
63238627967. 3

63238627968. 4

Question Number : 98 Question Id : 6323866993 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

The solution of the differentiable equation $2x \frac{dy}{dx} + y = 14x^3, x > 0$, is

1. $y = 2x^3 + c x^{\frac{1}{2}}$

2. $y = x^3 + c x^{\frac{1}{2}}$

3. $y = 2x^3 + c x^{-\frac{1}{2}}$

4. $y = x^3 + c x^{-\frac{1}{2}}$

Options :

63238627969. 1

63238627970. 2

63238627971. 3

63238627972. 4

Question Number : 98 Question Id : 6323866993 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

अवकलन समीकरण $2x \frac{dy}{dx} + y = 14x^3, x > 0$ का हल है :

1. $y = 2x^3 + c x^{\frac{1}{2}}$

2. $y = x^3 + c x^{\frac{1}{2}}$

3. $y = 2x^3 + c x^{-\frac{1}{2}}$

4. $y = x^3 + c x^{-\frac{1}{2}}$

Options :

63238627969. 1

63238627970. 2

63238627971. 3

63238627972. 4

Question Number : 99 Question Id : 6323866994 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

Let the vectors $\vec{a} = \hat{i} - 3\hat{j} + 2\hat{k}$, $\vec{b} = 2\hat{i} + \hat{j} - \hat{k}$ and $\vec{c} = 3\hat{i} + 5\hat{j} - 2\lambda\hat{k}$ be coplanar. Then λ is equal to

1. -1

2. 1

3. -2

4. 2

Options :

63238627973. 1

63238627974. 2

63238627975. 3

63238627976. 4

Question Number : 99 Question Id : 6323866994 Question Type : MCQ Option Shuffling : No Is

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

Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

यदि सदिश $\vec{a} = \hat{i} - 3\hat{j} + 2\hat{k}$, $\vec{b} = 2\hat{i} + \hat{j} - \hat{k}$ तथा $\vec{c} = 3\hat{i} + 5\hat{j} - 2\lambda\hat{k}$ सहसमतलीय हैं तो λ बराबर है :

1. -1

2. 1

3. -2

4. 2

Options :

63238627973. 1

63238627974. 2

63238627975. 3

63238627976. 4

**Question Number : 100 Question Id : 6323866995 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0**

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

A coin is tossed 7 times. The probability of getting at least 4 heads is:

1. $\frac{5}{8}$

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

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

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

Options :

63238627977. 1

63238627978. 2

63238627979. 3

63238627980. 4

**Question Number : 100 Question Id : 6323866995 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0**

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp1

एक सिक्के को 7 बार उछाला जाता है, तो कम से कम 4 चार बार चित आने की प्रायिकता है :

1. $\frac{5}{8}$

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

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

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

Options :

63238627977. 1

63238627978. 2

63238627979. 3

63238627980. 4

Applied Mathematics

Section Id :	632386128
Section Number :	3
Section type :	Online
Mandatory or Optional :	Optional
Number of Questions :	35
Number of Questions to be attempted :	25
Section Marks :	125
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	632386306

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 101 Question Id : 6323866996 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If $57 \equiv x \pmod{5}$. Then the least positive value of x is:

1. 57

2. 5

3. 4

4. 2

Options :

63238627981. 1

63238627982. 2

63238627983. 3

63238627984. 4

Question Number : 101 Question Id : 6323866996 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

अगर $57 \equiv x \pmod{5}$. तो x का न्यूनतम धनात्मक मान है :

1. 57
2. 5
3. 4
4. 2

Options :

63238627981. 1

63238627982. 2

63238627983. 3

63238627984. 4

Question Number : 102 Question Id : 6323866997 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Pure honey costs ₹300 per litre. A shopkeeper adds water to 10 litres of pure honey and sells the resulting syrup at ₹250 per litre. The quantity of water added by the shopkeeper is :

1. 2 litres
2. 5 litres
3. 3 litres
4. 1.5 litres

Options :

63238627985. 1

63238627986. 2

63238627987. 3

63238627988. 4

Question Number : 102 Question Id : 6323866997 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

शुद्ध शहद की कीमत ₹300/लीटर है। एक दुकानदार 10 शुद्ध शहद में पानी मिलाता है और उसके परिणामी घोल को ₹250/लीटर बेचता है। दुकानदार द्वारा मिलाए गए पानी की मात्रा है-

1. 2 लीटर
2. 5 लीटर
3. 3 लीटर
4. 1.5 लीटर

Options :

63238627985. 1

63238627986. 2

63238627987. 3

63238627988. 4

Question Number : 103 Question Id : 6323866998 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The speed of a motor boat in still water is 14.4 times the speed of the current of water. If the motor boat covers a certain distance upstream in 6 hours 25 minutes, then the time taken by the motor boat to come back is:

1. 5 hours 35 minutes
2. 5 hours 25 minutes
3. 5 hours 10 minutes
4. 5 hours 55 minutes

Options :

63238627989. 1

63238627990. 2

63238627991. 3

63238627992. 4

Question Number : 103 Question Id : 6323866998 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक मोटर बोट की चाल बहते हुए पानी की चाल से स्थिर पानी में 14.4 गुना है। अगर मोटर बोट एक निश्चित/निर्धारित दूरी पानी की धारा के विपरीत 6 घंटा 25 मिनट में तय करती है तो मोटर बोट को वापस आने में समय लगेगा:

1. 5 घंटे 35 मिनट
2. 5 घंटे 25 मिनट
3. 5 घंटे 10 मिनट
4. 5 घंटे 55 मिनट

Options :

63238627989. 1

63238627990. 2

63238627991. 3

63238627992. 4

Question Number : 104 Question Id : 6323866999 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The longest side of a triangle is four times the shortest side. The third side of the triangle is 3cm shorter than the longest side. If the perimeter of the triangle is at least 69 cm, then its:

1. Shortest-side < 8 cm
2. Shortest-side > 8 cm
3. Shortest-side ≤ 8 cm
4. Shortest-side ≥ 8 cm

Options :

63238627993. 1

63238627994. 2

63238627995. 3

63238627996. 4

Question Number : 104 Question Id : 6323866999 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक त्रिकोण का सबसे लंबा सिरा, छोटे वाले सिरे से 4 गुना है। तीसरा सिरा उस त्रिकोण के लंबे सिरे से 3 सेमी छोटा है। अगर त्रिकोण का परिमाण कम से कम 69 सेमी है तो इसका:

1. छोटा सिरा < 8 सेमी
2. छोटा सिरा > 8 सेमी
3. छोटा सिरा ≤ 8 सेमी
4. छोटा सिरा ≥ 8 सेमी

Options :

63238627993. 1

63238627994. 2

63238627995. 3

63238627996. 4

Question Number : 105 Question Id : 6323867000 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Three persons A, B and C enter into a partnership to run a business. They invested their capitals in the ratio $\frac{4}{3} : \frac{5}{2} : \frac{6}{5}$. After 5 months B increases his share by 40%. If the total profit at the end of a year is ₹50,550, then A's share in the profit is :

1. ₹8,000
2. ₹10,000
3. ₹20,000
4. ₹12,000

Options :

63238627997. 1

63238627998. 2

63238627999. 3

63238628000. 4

Question Number : 105 Question Id : 6323867000 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

तीन व्यक्तियों A, B और C ने एक व्यवसाय चलाने के लिए समझौता किया। उन्होंने अपनी पूँजी क्रमशः $\frac{4}{3} : \frac{5}{2} : \frac{6}{5}$ के अनुपात में लगायी। 5 महीने बाद B ने पूँजी में 40% की बढ़ोतरी की। अगर साल के अंत में कुल लाभ ₹50,550 हुआ तो A को लाभ हुआ :

1. ₹8,000

2. ₹10,000

3. ₹20,000

4. ₹12,000

Options :

63238627997. 1

63238627998. 2

63238627999. 3

63238628000. 4

Question Number : 106 Question Id : 6323867001 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Match List I with List II

LIST I		LIST II	
A.	The solution set of the inequality $3x + 7 > 12$	I.	$[-1, \infty)$
B.	The solution set of the inequality $\frac{3x+5}{2} \geq 1, x \in \mathbb{R}$	II.	$[\frac{17}{8}, \infty)$
C.	The solution set of the inequality $2x + 5 < 7x + 9,$ $x \in \mathbb{R}$ is,	III.	$(\frac{5}{3}, \infty)$
D.	The solution set of the inequality $6x - 5 \geq -2x + 12,$ $x \in \mathbb{R}$ is,	IV.	$(-\frac{4}{5}, \infty)$

Choose the correct answer from the options given below:

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

Options :

63238628001. 1

63238628002. 2

63238628003. 3

63238628004. 4

Question Number : 106 Question Id : 6323867001 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सूची I का सूची II के साथ मिलान कीजिए

सूची I		सूची II	
A.	$3x + 7 > 12$ असमता के हल का समुच्चय	I.	$[-1, \infty]$
B.	$\frac{3x+5}{2} \geq 1, x \in \mathbb{R}$ असमता के हल का समुच्चय	II.	$[\frac{17}{8}, \infty]$
C.	$2x + 5 < 7x + 9, x \in \mathbb{R}$ असमता के हल का समुच्चय	III.	$(\frac{5}{3}, \infty)$
D.	$6x - 5 \geq -2x + 12, x \in \mathbb{R}$ असमता के हल का समुच्चय	IV.	$(-\frac{4}{5}, \infty)$

नीचे दिये गये विकल्पों में सही उत्तर का चयन कीजिए :

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

Options :

63238628001. 1
63238628002. 2
63238628003. 3
63238628004. 4

Question Number : 107 Question Id : 6323867002 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If $\begin{bmatrix} 2x+3 & 3y & 3 \\ y+1 & 2x-z & -1 \\ 3z+1 & 2 & 5 \end{bmatrix} = \begin{bmatrix} 7 & -9 & 3 \\ -2 & -4 & -1 \\ 25 & 2 & 5 \end{bmatrix}$, then the values of x, y and z are:

1. $x = 2, y = 3, z = 8$
2. $x = 2, y = -3, z = 8$
3. $x = -3, y = 2, z = 6$
4. $x = -2, y = 3, z = 8$

Options :

63238628005. 1

63238628006. 2

63238628007. 3

63238628008. 4

Question Number : 107 Question Id : 6323867002 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

अगर $\begin{bmatrix} 2x+3 & 3y & 3 \\ y+1 & 2x-z & -1 \\ 3z+1 & 2 & 5 \end{bmatrix} = \begin{bmatrix} 7 & -9 & 3 \\ -2 & -4 & -1 \\ 25 & 2 & 5 \end{bmatrix}$, है तो x, y और z का मान है-

1. $x = 2, y = 3, z = 8$
2. $x = 2, y = -3, z = 8$
3. $x = -3, y = 2, z = 6$
4. $x = -2, y = 3, z = 8$

Options :

63238628005. 1

63238628006. 2

63238628007. 3

63238628008. 4

Question Number : 108 Question Id : 6323867003 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If the matrix $\begin{bmatrix} a & -2 & 5b \\ 2 & 0 & -15 \\ 15 & 3c & 0 \end{bmatrix}$ is skew-symmetric, then the value of $a^2 + b^2 + c^2$ is:

1. 15

2. 34

3. 25

4. 16

Options :

63238628009. 1

63238628010. 2

63238628011. 3

63238628012. 4

Question Number : 108 Question Id : 6323867003 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
-----	-------

अगर आव्यूह $\begin{bmatrix} a & -2 & 5b \\ 2 & 0 & -15 \\ 15 & 3c & 0 \end{bmatrix}$ एक विषय-सममित है तो $a^2 + b^2 + c^2$ का मान है-

1. 15

2. 34

3. 25

4. 16

Options :

63238628009. 1

63238628010. 2

63238628011. 3

63238628012. 4

Question Number : 109 Question Id : 6323867004 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Match List I with List II

LIST I		LIST II	
A.	A matrix which is not a square matrix is called	I.	Non-singular matrix
B.	If the determinant of any matrix is non-zero, then the matrix is called	II.	Null matrix
C.	A diagonal matrix having same diagonal elements is called	III.	Rectangular matrix
D.	A matrix which is both symmetric and skew-symmetric matrix is :	IV.	Scalar matrix

Choose the correct answer from the options given below:

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

Options :

63238628013. 1

63238628014. 2

63238628015. 3

63238628016. 4

Question Number : 109 Question Id : 6323867004 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सूची I का सूची II से मिलान कीजिए

सूची I		सूची II	
A.	एक आव्यूह जो कि वर्ग आव्यूह नहीं है कहलाता है।	I.	व्युत्क्रमणीय आव्यूह
B.	अगर किसी आव्यूह का सारणक अशून्य है तो वह आव्यूह कहलाता है।	II.	शून्य आव्यूह
C.	अगर विकर्ण आव्यूह के सभी विकर्ण अवयव समान हैं, कहलाता है।	III.	आयताकार आव्यूह
D.	एक आव्यूह जो कि दोनों सममित और विषम-सममित आव्यूह है।	IV.	अदिश आव्यूह

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

Options :

63238628013. 1

63238628014. 2

63238628015. 3

63238628016. 4

Question Number : 110 Question Id : 6323867005 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If $x = \log t$ and $y = \frac{1}{t^2}$, then $\frac{d^2y}{dx^2}$ is:

1. $\frac{2}{t^2}$

2. $\frac{4}{t^2}$

3. $-\frac{1}{t}$

4. $-\frac{4}{t^2}$

Options :

63238628017. 1

63238628018. 2

63238628019. 3

63238628020. 4

Question Number : 110 Question Id : 6323867005 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

अगर $x = \log t$ और $y = \frac{1}{t^2}$, तो $\frac{d^2y}{dx^2}$ है-

1. $\frac{2}{t^2}$

2. $\frac{4}{t^2}$

3. $-\frac{1}{t}$

4. $-\frac{4}{t^2}$

Options :

63238628017. 1

63238628018. 2

63238628019. 3

63238628020. 4

Question Number : 111 Question Id : 6323867006 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

A company produces bikes at the rate of x bikes per day and its total cost function is $C(x) = x^3 - 60x^2 + 13x + 50$. The optimal number of bikes produced per day at which the marginal cost is minimum is :

1. 15

2. 40

3. 20

4. 25

Options :

63238628021. 1

63238628022. 2

63238628023. 3

63238628024. 4

Question Number : 111 Question Id : 6323867006 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक कंपनी x बाइक प्रतिदिन की दर से बाइकों का उत्पादन करती है। और इसका कुल लागत फलन $C(x) = x^3 - 60x^2 + 13x + 50$ है। इष्टतम बाइकों की संख्या का उत्पादन प्रतिदिन कितना हो कि सीमांत लागत न्यूनतम हो:

1. 15
2. 40
3. 20
4. 25

Options :

63238628021. 1
63238628022. 2
63238628023. 3
63238628024. 4

Question Number : 112 Question Id : 6323867007 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Two positive numbers x and y whose sum is 25 and the product x^3y^2 is maximum are:

1. $x = 10, y = 15$
2. $x = 15, y = 10$
3. $x = 12, y = 13$
4. $x = 16, y = 9$

Options :

63238628025. 1

63238628026. 2

63238628027. 3

63238628028. 4

Question Number : 112 Question Id : 6323867007 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

दो धनात्मक संख्याएँ x और y जिसका योग 25 है और x^3y^2 उच्चतम हो, वह होंगी :

1. $x = 10, y = 15$

2. $x = 15, y = 10$

3. $x = 12, y = 13$

4. $x = 16, y = 9$

Options :

63238628025. 1

63238628026. 2

63238628027. 3

63238628028. 4

Question Number : 113 Question Id : 6323867008 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The point on the straight line $3x + 4y = 8$, which is closest to the origin is:

1. $\left(\frac{13}{24}, \frac{17}{24}\right)$

2. $\left(\frac{24}{25}, \frac{32}{25}\right)$

3. $\left(\frac{5}{24}, \frac{7}{24}\right)$

4. $\left(1, \frac{5}{4}\right)$

Options :

63238628029. 1

63238628030. 2

63238628031. 3

63238628032. 4

Question Number : 113 Question Id : 6323867008 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सरल रेखा $3x + 4y = 8$, पर बिन्दु जो प्रारम्भिक बिन्दु से निकटतम हो, है :

1. $\left(\frac{13}{24}, \frac{17}{24}\right)$

2. $\left(\frac{24}{25}, \frac{32}{25}\right)$

3. $\left(\frac{5}{24}, \frac{7}{24}\right)$

4. $\left(1, \frac{5}{4}\right)$

Options :

63238628029. 1

63238628030. 2

63238628031. 3

63238628032. 4

Question Number : 114 Question Id : 6323867009 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If the function $f(x) = a \log x + \frac{b}{x} + x$ has extreme values at $x = 1$ and $x = 3$, then (a, b) is:

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

2. $(4, 3)$

3. $(-2, -1)$

4. $(-4, -3)$

Options :

63238628033. 1

63238628034. 2

63238628035. 3

63238628036. 4

Question Number : 114 Question Id : 6323867009 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A****Minimum Instruction Time : 0****Correct Marks : 5 Wrong Marks : 1****Question Key Details :**

Key	Value
Comprehension	MCQ3

अगर फलन $f(x) = a \log x + \frac{b}{x} + x$ का अधिकतम / न्यूनतम मान $x=1$ और $x=3$, पर है तो (a, b) है-

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

2. $(4, 3)$

3. $(-2, -1)$

4. $(-4, -3)$

Options :

63238628033. 1

63238628034. 2

63238628035. 3

63238628036. 4

Question Number : 115 Question Id : 6323867010 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A****Minimum Instruction Time : 0**

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Let X be a discrete random variable whose probability distribution is defined as :

$$P(X = x) = \begin{cases} 0.5 & , \text{if } x = 0 \\ k(x+1) & , \text{if } x = 1 \text{ or } 2 \\ k(6-x) & , \text{if } x = 3 \text{ or } 4 \\ 0 & , \text{otherwise} \end{cases}$$

The, value of k is:

1. $\frac{1}{10}$
2. $\frac{1}{20}$
3. $\frac{1}{2}$
4. $\frac{1}{4}$

Options :

63238628037. 1

63238628038. 2

63238628039. 3

63238628040. 4

Question Number : 115 Question Id : 6323867010 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

यदि X एक असंतत यादृच्छिक चर है जिसकी प्रायिकता बंटन इस प्रकार परिभाषित है

$$P(X = x) = \begin{cases} 0.5 & , \text{if } x = 0 \\ k(x+1) & , \text{if } x = 1 \text{ or } 2 \\ k(6-x) & , \text{if } x = 3 \text{ or } 4 \\ 0 & , \text{otherwise} \end{cases}$$

तब k का मान है-

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

2. $\frac{1}{20}$

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

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

Options :

63238628037. 1

63238628038. 2

63238628039. 3

63238628040. 4

Question Number : 116 Question Id : 6323867011 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Between 3 p.m. and 5 p.m. the average number of phone calls per minute coming into the helpline desk of a bank is 5. The probability that during one particular minute there will be only one phone call is :

1. $0.5e^{-5}$
2. $5e^{-5}$
3. e^{-5}
4. $25e^{-5}$

Options :

63238628041. 1
63238628042. 2
63238628043. 3
63238628044. 4

Question Number : 116 Question Id : 6323867011 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक बैंक के सहायता डेस्क पर सांय एक और सांय 5 के बीच आने वाले फोन का औसत कॉल संख्या 5 प्रति मिनट है। एक निश्चित मिनट में केवल एक फोन आने की प्रायिकता है-

1. $0.5e^{-5}$
2. $5e^{-5}$
3. e^{-5}
4. $25e^{-5}$

Options :

63238628041. 1
63238628042. 2

63238628043. 3

63238628044. 4

Question Number : 117 Question Id : 6323867012 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

If the sum and product of the mean and variance of a binomial distribution are 18 and 72 respectively, then the probability of obtaining atmost one success is

1. $25 \left(\frac{1}{2}\right)^{24}$

2. $\left(\frac{1}{2}\right)^{24}$

3. $24 \left(\frac{1}{2}\right)^{24}$

4. $24 \left(\frac{1}{2}\right)^{23}$

Options :

63238628045. 1

63238628046. 2

63238628047. 3

63238628048. 4

Question Number : 117 Question Id : 6323867012 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक द्वीपद् बंटन के माध्य और प्रसरण का योग और गुणन क्रमशः 18 और 72 है तो कम से कम एक सफलता प्राप्त करने की प्रायिकता है-

1. $25\left(\frac{1}{2}\right)^{24}$

2. $\left(\frac{1}{2}\right)^{24}$

3. $24\left(\frac{1}{2}\right)^{24}$

4. $24\left(\frac{1}{2}\right)^{23}$

Options :

63238628045. 1

63238628046. 2

63238628047. 3

63238628048. 4

Question Number : 118 Question Id : 6323867013 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Match List I with List II

LIST I		LIST II	
A.	The variance of a Poisson distribution with mean λ is	I.	$\sqrt{\lambda}$
B.	The standard deviation of a Poisson distribution with mean λ is	II.	4
C.	In a Poisson distribution, if mean is 4, then the standard deviation is	III.	λ
D.	In a Poisson distribution, if mean is 4, then the variance is	IV.	2

Choose the correct answer from the options given below:

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

Options :

63238628049. 1

63238628050. 2

63238628051. 3

63238628052. 4

Question Number : 118 Question Id : 6323867013 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सूची I का सूची II के साथ मिलान कीजिए

सूची I		सूची II	
A.	प्वॉसॉन् बंटन का प्रसरण, λ माध्य के साथ है-	I.	$\sqrt{\lambda}$
B.	एक प्वॉसॉन् बंटन का मानक विचलन, λ माध्य के साथ है-	II.	4
C.	एक प्वॉसॉन् बंटन में अगर माध्य 4 है, तो मानक विचलन है	III.	λ
D.	एक प्वॉसॉन् बंटन में, अगर माध्य 4 है तो प्रसरण है-	IV.	2

नीचे दिये गये विकल्पों में सही उत्तर का चयन कीजिए :

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

Options :

63238628049. 1

63238628050. 2

63238628051. 3

63238628052. 4

Question Number : 119 Question Id : 6323867014 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Consider the following data:

Commodity	Price year 2010	Price year 2016	Quantity Year 2010	Quantity Year 2016
A	1	2	10	13
B	5	10	12	16
C	6	10	15	18

The Laspeyre's price index number for year 2016 with year 2010 as base year is:

1. 160
2. 200
3. 150
4. 170

Options :

63238628053. 1

63238628054. 2

63238628055. 3

63238628056. 4

Question Number : 119 Question Id : 6323867014 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

दिए गए आँकड़ों पर विचार कीजिए

पण्य	मूल्य वर्ष 2010	मूल्य वर्ष 2016	मात्रा वर्ष 2010	मात्रा वर्ष 2016
A	1	2	10	13
B	5	10	12	16
C	6	10	15	18

वर्ष 2016 के लिए लैस्पेरे-मूल्य सूचकांक संख्या क्या होगा यदि आधार वर्ष 2010 है-

1. 160
2. 200
3. 150
4. 170

Options :

63238628053. 1

63238628054. 2

63238628055. 3

63238628056. 4

Question Number : 120 Question Id : 6323867015 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Given the data for the sales of a product in a state is as follows:

Year	2005	2006	2007	2008	2009
Sales (In lakh ₹)	150	130	160	170	200

The equation of the straight-line trend by method of least squares is:

1. $14 + 162x$
2. $126 + 15x$
3. $128 + 14x$
4. $162 + 14x$

Options :

63238628057. 1
63238628058. 2
63238628059. 3
63238628060. 4

Question Number : 120 Question Id : 6323867015 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक राज्य में एक उत्पादन के विक्रय के आंकड़े इसप्रकार दिए गए हैं

वर्ष	2005	2006	2007	2008	2009
विक्रय (₹ लाख में)	150	130	160	170	200

अन्यूनतम वर्ग विधि द्वारा उपनित सरल रेखा का समीकरण है :

1. $14 + 162x$
2. $126 + 15x$
3. $128 + 14x$
4. $162 + 14x$

Options :

63238628057. 1

63238628058. 2

63238628059. 3

63238628060. 4

Question Number : 121 Question Id : 6323867016 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The price relatives and weights of a set of commodities are given as:

Commodity	A	B	C
Price Relative	150	130	180
Weight	x	$3x$	y

If the sum of weights is 30 and the index for the set is 144, then the values of x and y are:

1. $x = 6, y = 8$
2. $x = 8, y = 4$
3. $x = 6, y = 6$
4. $x = 5, y = 10$

Options :

63238628061. 1

63238628062. 2

63238628063. 3

63238628064. 4

Question Number : 121 Question Id : 6323867016 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक पण्यों के समुच्चय का मूल्यानुपात और भार इस प्रकार दिए गए हैं:

पण्य	A	B	C
मूल्यानुपात	150	130	180
भार	x	$3x$	y

अगर भारों का योग 30 है और समुच्चय का सूचकांक 144 है, तो x और y का मान है:-

1. $x = 6, y = 8$

2. $x = 8, y = 4$

3. $x = 6, y = 6$

4. $x = 5, y = 10$

Options :

63238628061. 1

63238628062. 2

63238628063. 3

63238628064. 4

Question Number : 122 Question Id : 6323867017 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Consider the following hypothesis test:

$$H_0: \mu \geq 20$$

$$H_1: \mu < 20$$

A sample of 64 provided a sample mean of 19.5. The population standard deviation is 2. The value of the test statistic is:

1. -2.5

2. -2

3. 2

4. -1.5

Options :

63238628065. 1

63238628066. 2

63238628067. 3

63238628068. 4

Question Number : 122 Question Id : 6323867017 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

निम्नलिखित परिकल्पना परीक्षण पर विचार कीजिए :

$$H_0: \mu \geq 20$$

$$H_1 : \mu < 20$$

एक 64 आकर के परिदर्श का माध्य 19:5 है। जनसंख्या मानक विचलन 2 है। परिदर्श का मान है:

1. -2.5

2. -2

3. 2

4. -1.5

Options :

63238628065. 1

63238628066. 2

63238628067. 3

63238628068. 4

Question Number : 123 Question Id : 6323867018 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

A simple random sample consists of five observations 2, 4, 6, 7, 6. The point estimate of population standard deviation is:

1. 4

2. 2.5

3. 5

4. 2

Options :

63238628069. 1

63238628070. 2

63238628071. 3

63238628072. 4

Question Number : 123 Question Id : 6323867018 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक साधारण यादृच्छिक समदर्श जिसके पांच पर्यवेक्षण मान हैं 2,4,6,7,6, हैं, इसका समष्टि मानक विचलन का आकलन बिंदु हैं :

1. 4

2. 2.5

3. 5

4. 2

Options :

63238628069. 1

63238628070. 2

63238628071. 3

63238628072. 4

Question Number : 124 Question Id : 6323867019 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Match List I with List II

LIST I		LIST II	
A.	A special characteristic of a population is known as a:	I.	statistic
B.	A special characteristic of a sample is known as a:	II.	Confidence interval
C.	The uncertainty of a sampling process is expressed by:	III.	Estimation
D.	The process by which one makes the inferences about a population based on the information obtained from a sample is known as:	IV.	Parameter

Choose the correct answer from the options given below:

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

Options :

63238628073. 1

63238628074. 2

63238628075. 3

63238628076. 4

Question Number : 124 Question Id : 6323867019 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सूची I का सूची II से मिलान कीजिए

सूची I		सूची II	
A.	एक जनसंख्या का एक विशिष्ट अभिलक्षणिक जाना जाता है :	I.	सांख्यिकी
B.	एक समदर्श का एक विशिष्ट अभिलक्षणिक जाना जाता है :	II.	विश्वास्यता अंतराल
C.	एक समदर्शीय विकास की अनिश्चितता दर्शायी जाती है :	III.	आकलन
D.	एक समदर्श पर आधारित सूचना पर एक जनसंख्या के बारे में एक अनुमान लगाने की प्रक्रिया	IV.	प्राचल

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

Options :

63238628073. 1
63238628074. 2
63238628075. 3
63238628076. 4

Question Number : 125 Question Id : 6323867020 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The present value of a perpetuity of ₹1200 payable at the beginning of each year, if money is worth 5% per annum is:

1. ₹25,500
2. ₹24,000
3. ₹24,200
4. ₹25,200

Options :

63238628077. 1

63238628078. 2

63238628079. 3

63238628080. 4

Question Number : 125 Question Id : 6323867020 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

हर वर्ष के शुरुआत में एक परपेचुटी (सतत) के ₹1200 देय है, इसका वर्तमान मान है, अगर 5% प्रति वर्ष ब्याज है-

1. ₹25,500
2. ₹24,000
3. ₹24,200
4. ₹25,200

Options :

63238628077. 1

63238628078. 2

63238628079. 3

63238628080. 4

Question Number : 126 Question Id : 6323867021 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

A person takes a car loan of ₹9,00,000 at the rate of 12% per annum for 5 years from a bank. The EMI under flat rate system is:

1. ₹24,000

2. ₹20,000

3. ₹16,000

4. ₹28,000

Options :

63238628081. 1

63238628082. 2

63238628083. 3

63238628084. 4

Question Number : 126 Question Id : 6323867021 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक बैंक से एक व्यक्ति 5 साल के लिए 12% प्रति वर्ष की दर से ₹9,00,000 कार ऋण लेता है। तो सपाट दर तंत्र के अंतर्गत ईएमआई है:

1. ₹24,000
2. ₹20,000
3. ₹16,000
4. ₹28,000

Options :

63238628081. 1
63238628082. 2
63238628083. 3
63238628084. 4

Question Number : 127 Question Id : 6323867022 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

An asset costing ₹2,00,000 is expected to have a useful life of 10 years and a final scrap value of ₹40,000. The book value of the machine at the end of sixth year is:

1. ₹1,36,000
2. ₹1,04,000
3. ₹1,20,000
4. ₹88,000

Options :

63238628085. 1
63238628086. 2
63238628087. 3

63238628088. 4

Question Number : 127 Question Id : 6323867022 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

एक आस्ति (एसेट) जिसकी लागत ₹2,00,000 के 10 साल के उपयोगी जीवन काल के लिए अनुमानित है और एक अंतिम खुरचन (स्क्रेप) का मान ₹40,000 है। छठे साल के अंत में मशीन का पुस्त (बुक) मान है-

1. ₹1,36,000

2. ₹1,04,000

3. ₹1,20,000

4. ₹88,000

Options :

63238628085. 1

63238628086. 2

63238628087. 3

63238628088. 4

Question Number : 128 Question Id : 6323867023 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The maximum value of $Z = 3x + y$ subject to the constraints $x + y \leq 30$, $2x + y \leq 40$, $x, y \geq 0$ is

1. 50
2. 30
3. 25
4. 60

Options :

63238628089. 1
63238628090. 2
63238628091. 3
63238628092. 4

Question Number : 128 Question Id : 6323867023 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

$Z = 3x + y$ का अधिकतम मान व्यक्तियों $x + y \leq 30$, $2x + y \leq 40$, $x, y \geq 0$ के साथ है :

1. 50
2. 30
3. 25
4. 60

Options :

63238628089. 1
63238628090. 2
63238628091. 3
63238628092. 4

Question Number : 129 Question Id : 6323867024 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

The minimum value of the objective function $Z = 30x + 10y$ subject to the constraints $x + 2y \leq 30, 3x + y \geq 30, 4x + 3y \geq 60, x, y \geq 0$ is

1. 100
2. 450
3. 300
4. 1200

Options :

63238628093. 1

63238628094. 2

63238628095. 3

63238628096. 4

Question Number : 129 Question Id : 6323867024 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

व्यवरोधों $x + 2y \leq 30$, $3x + y \geq 30$, $4x + 3y \geq 60$, $x, y \geq 0$ के साथ उद्देश्य फलन $Z = 30x + 10y$ का न्यूनतम मान है:

1. 100
2. 450
3. 300
4. 1200

Options :

63238628093. 1

63238628094. 2

63238628095. 3

63238628096. 4

Question Number : 130 Question Id : 6323867025 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

Match List I with List II

LIST I		LIST II	
A.	The set of values of decision variables which do not satisfy all the constraints and non-negativity condition of an LPP is called:	I.	Linear
B.	In a LPP, the objective function is always	II.	Convex polygon
C.	In a LPP, the linear inequalities on variables are called:	III.	Infeasible solution
D.	The feasible region for an LPP is always a	IV.	Constraints

Choose the correct answer from the options given below:

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

Options :

63238628097. 1

63238628098. 2

63238628099. 3

63238628100. 4

Question Number : 130 Question Id : 6323867025 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ3

सूची I का सूची II से मिलान कीजिए

सूची I		सूची II	
A.	निर्णायक चर के मानों का समुच्चय जो कि एक एल पी पी के व्यरोध और नकारात्मकता रहित शर्तों को संतुष्ट नहीं करता है।	I.	रेखीय
B.	एक एल पी पी में, उद्देश्य फलन हमेशा होता है	II.	अवमुख बहुभुज
C.	एक एल पी पी में चर पर रेखीय असमानता कहलाती है	III.	असुसंगत हल
D.	एक एल पी पी के लिए सुसंगत क्षेत्र हमेशा एक होता है	IV.	व्यरोध

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

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

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

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

Options :

63238628097. 1

63238628098. 2

63238628099. 3

63238628100. 4

Sub-Section Number :

2

Sub-Section Id :

632386307

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Number : 131 Question Id : 6323867026 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

In 1000 metres race, P, Q, R scored first, second and third positions respectively. If P beats Q by 100 metres and Q beats R by 200 metres, then the gap between P and R is:

1. 300 m
2. 280 m
3. 260 m
4. 240 m

Options :

63238628101. 1
63238628102. 2
63238628103. 3
63238628104. 4

Question Number : 131 Question Id : 6323867026 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

एक 1000 मीटर रेस में, P, Q, R ने क्रमशः प्रथम, द्वितीय और तृतीय स्थान पाया। अगर P, Q को 100 मीटर से हराता है और Q, R को 200 मीटर से हराता है तो P और R के बीच का अंतराल है :

1. 300 मी.
2. 280 मी.
3. 260 मी.
4. 240 मी.

Options :

63238628101. 1
63238628102. 2
63238628103. 3

63238628104.4

Question Number : 132 Question Id : 6323867027 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

If $y = \log_e \left(\frac{x^3}{e^3} \right)$, then $\frac{d^2y}{dx^2}$ is equal to

1. $\frac{3}{x^2}$

2. $-\frac{2}{x^2}$

3. $-\frac{3}{x^2}$

4. $-\frac{2}{x}$

Options :

63238628105.1

63238628106.2

63238628107.3

63238628108.4

Question Number : 132 Question Id : 6323867027 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

अगर $y = \log_e \left(\frac{x^3}{e^3} \right)$, तो $\frac{d^2y}{dx^2}$ बराबर है

1. $\frac{3}{x^2}$

2. $-\frac{2}{x^2}$

3. $-\frac{3}{x^2}$

4. $-\frac{2}{x}$

Options :

63238628105. 1

63238628106. 2

63238628107. 3

63238628108. 4

Question Number : 133 Question Id : 6323867028 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

The probability distribution of a discrete random variable X is given as :

X	0	1	2	3
P(X)	$2k^2$	k^2	$3k^2$	k

The mean of the distribution is :

1. $\frac{4}{3}$
2. $\frac{5}{3}$
3. $\frac{7}{6}$
4. $\frac{16}{9}$

Options :

63238628109. 1

63238628110. 2

63238628111. 3

63238628112. 4

Question Number : 133 Question Id : 6323867028 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

एक असंतत यादृच्छिक चर X की प्रायिकता बंटन है

X	0	1	2	3
$P(X)$	$2k^2$	k^2	$3k^2$	k

इस बंटन का माध्य है :-

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

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

3. $\frac{7}{6}$

4. $\frac{16}{9}$

Options :

63238628109. 1

63238628110. 2

63238628111. 3

63238628112. 4

Question Number : 134 Question Id : 6323867029 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

The wholesale price index of sugar in 2018 compared to 2015 is 125. If the cost of sugar was ₹20 per kg in 2015, then the cost of sugar in 2018 is:

1. ₹ 25 per kg
2. ₹ 30 per kg
3. ₹ 15 per kg
4. ₹ 45 per kg

Options :

63238628113. 1

63238628114. 2

63238628115. 3

63238628116. 4

Question Number : 134 Question Id : 6323867029 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

2018 में चीनी का थोक व्यापार मूल्य सूचकांक 2015 की तुलना में 125 है। अगर चीनी की कीमत 2015 में ₹20 प्रति किग्रा थी, तो 2018 में चीनी की कीमत है :

1. ₹ 25 किग्रा
2. ₹ 30 किग्रा
3. ₹ 15 किग्रा
4. ₹ 45 किग्रा

Options :

63238628113. 1

63238628114. 2

63238628115. 3

63238628116. 4

Question Number : 135 Question Id : 6323867030 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

The corner points of the feasible region for an L.P.P are $(0, 4)$, $(2, 3)$, $(4, 5)$, $(7, 0)$. If objective function is $Z = px + qy$; $p, q > 0$ then the condition on p and q so that the minimum of Z occurs at $(2, 3)$ and $(7, 0)$ is:

1. $7p = 4q$

2. $5p = 3q$

3. $4p = q$

4. $3p = 5q$

Options :

63238628117. 1

63238628118. 2

63238628119. 3

63238628120. 4

Question Number : 135 Question Id : 6323867030 Question Type : MCQ Option Shuffling : No

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

Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	Comp2

एक एल पी पी के लिए एक सुसंगत क्षेत्र के कोन बिन्दु $(0, 4)$, $(2, 3)$, $(4, 5)$, $(7, 0)$ है। अगर उद्देश्य फलन $Z = px + qy$; $p, q > 0$ तो न्यूनतम Z $(2, 3)$ और $(7, 0)$ पर होने के लिए p और q की शर्त होगी:

1. $7p = 4q$

2. $5p = 3q$

3. $4p = q$

4. $3p = 5q$

Options :

63238628117. 1

63238628118. 2

63238628119. 3

63238628120. 4