गद्यांश को ध्यानपूर्वक पढ़े और प्रश्नों के उत्तर दें :

पिछले कुछ दशकों में सबसे महत्वपूर्ण घटना भारतीय भाषा के समाचार पत्रों में क्रांति की रही हैं। हिंदी, तेलुगू और कन्नड़ में उच्चतम वृद्धि दर्ज की गई। चार मुख्य भौगोलिक क्षेत्रों में उत्तरी क्षेत्र में अधिकतम संचलन 7.83 प्रतिशत रहा हैं। दक्षिण, पश्चिम और पूर्वीय क्षेत्रों में वृद्धि दर क्रमश: 4.95 प्रतिशत, 2.81 प्रतिशत और 2.63 प्रतिशत रहा है। भारत में शीर्ष दैनिक समाचार पत्रों के वर्ग में दैनिक जागरण और दैनिक भास्कर को औसतन 3.92 मिलियन और 3.81 मिलियन की बिक्री की दर से सम्मिलित किया गया है। क्रमश: (जुलाई – दिसंबर 2016) में

'ईनाडु' तेलुगु समाचारपत्र की कहानी भी भारतीय भाषाओं के समाचारपत्रों (प्रेस) की सफलता का एक उदाहरण है। 'ईनाडु' के संस्थापक रामोजी राव ने 1974 में इस समाचारपत्र को प्रारंभ करने से पहले एक चिड-फंड सफलतापूर्वक चलाया था। 1980 के दशक के मध्य भाग में ग्रामीण क्षेत्रों में अरक-विरोधी आंदोलन जैसे उपयुक्त मुद्दों से जुड़कर यह तेलुगु समाचारपत्र देहातों में पहुँचने में सफल हो गया। अपनी इस सफलता से प्रेरित होकर उसने 1989 में 'ज़िला दैनिक' निकालने शुरू किए। ये छोटे-छोटे पत्रक होते थे जिनमें ज़िला-विशेष के सनसनीखेज़ समाचार और उसी ज़िले के गाँवों और छोटे कस्बों से प्राप्त वर्गीकृत विज्ञापन छापे जाते थे।

निम्नलिखित में से किस समाचारपत्र ने 1989 में अपने ज़िला दैनिक की शुरुआत की?

(1) दैनिक भास्कर

(2) दैनिक जागरण

(3) ईनाडु

(4) पंजाब केसरी

Options :

212807115757. 1

212807115758. 2

212807115759. 3

212807115760. 4

Mathematics

Group Number :	8
Group Id :	212807629
Group Maximum Duration :	60
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Common

Section Id :	212807735
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	75
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1

Sub-Section Id : 2128072106
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 386 Question Id : 21280728941 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	MCQ1

$$\begin{bmatrix} 2x+1 & 4x \\ y+3 & 2y-5 \end{bmatrix} = \begin{bmatrix} x+2 & 4 \\ 7 & 3 \end{bmatrix}$$

(1) $x=2,\ y=2$

(2) $x=4,\ y=1$

(3) $x=1,\ y=4$

(4) $x=3,\ y=1$

Options :

212807115761. 1

212807115762. 2

212807115763. 3

212807115764. 4

Question Number : 386 Question Id : 21280728941 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	MCQ1

$\begin{bmatrix} 2x+1 & 4x \\ y+3 & 2y-5 \end{bmatrix} = \begin{bmatrix} x+2 & 4 \\ 7 & 3 \end{bmatrix}$ तो x तथा y का मान ज्ञात करें।

(1) $x=2,\ y=2$

(2) $x=4,\ y=1$

(3) $x=1,\ y=4$

(4) $x=3,\ y=1$

Options :

212807115761. 1

212807115762. 2

212807115763. 3

212807115764. 4

Question Number : 387 Question Id : 21280728942 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	MCQ1

If A is a square matrix of order 3 and $|A| = -2$, then the value of $|-A^{-1}|$ is :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) 2

(4) -2

Options :

212807115765. 1

212807115766. 2

212807115767. 3

212807115768. 4

Question Number : 387 Question Id : 21280728942 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	MCQ1

यदि A एक वर्ग आव्यूह है जिसका कोटि 3 और $|A| = -2$ तब $|-A^{-1}|$ का मान है :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) 2

(4) -2

Options :

212807115765. 1

212807115766. 2

212807115767. 3

212807115768. 4

Question Number : 388 Question Id : 21280728943 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	MCQ1

If the order of matrix A is 4×3, order of matrix B is 4×5 and order of matrix C is 5×3, then the order of matrix $(B \cdot C)A'$ is :

(1) 4×3

(2) 4×4

(3) 3×4

(4) 5×3

Options :

212807115769. 1

212807115770. 2

212807115771. 3
212807115772. 4

Question Number : 388 Question Id : 21280728943 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	MCQ1

यदि आव्यूह A का कोटि 4×3, आव्यूह B का कोटि 4×5 और आव्यूह C का क्रम 5×3 है तब आव्यूह $(B\cdot C)A'$ की कोटि है :

(1) 4×3

(2) 4×4

(3) 3×4

(4) 5×3

Options :

212807115769. 1
212807115770. 2
212807115771. 3
212807115772. 4

Question Number : 389 Question Id : 21280728944 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	MCQ1

If the matrix $\begin{bmatrix}1 & 2\\ 3 & x\end{bmatrix}$ is a singular matrix, then the value of x is :

(1) -6

(2) 0

(3) 6

(4) 2

Options :

212807115773. 1
212807115774. 2
212807115775. 3
212807115776. 4

Question Number : 389 Question Id : 21280728944 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	MCQ1

यदि आव्यूह $\begin{bmatrix} 1 & 2 \\ 3 & x \end{bmatrix}$ अव्युत्क्रमणीय आव्यूह है तब x का मान है :

(1) -6

(2) 0

(3) 6

(4) 2

Options :

212807115773. 1

212807115774. 2

212807115775. 3

212807115776. 4

Question Number : 390 Question Id : 21280728945 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	MCQ1

If $y = \log x^5$, then $\frac{d^2y}{dx^2}$ is given by :

(1) $\frac{1}{x^5}$

(2) $\frac{1}{5x^4}$

(3) $-\frac{20}{x^2}$

(4) $-\frac{5}{x^2}$

Options :

212807115777. 1

212807115778. 2

212807115779. 3

212807115780. 4

Question Number : 390 Question Id : 21280728945 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	MCQ1

यदि $y=\log x^5$, तब $\frac{d^2y}{dx^2}$ है :

(1) $\frac{1}{x^5}$

(2) $\frac{1}{5x^4}$

(3) $-\frac{20}{x^2}$

(4) $-\frac{5}{x^2}$

Options :

212807115777. 1

212807115778. 2

212807115779. 3

212807115780. 4

Question Number : 391 Question Id : 21280728946 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	MCQ1

The slope of the normal to the curve $y^2=16x$ at the point (1, 4) is :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) 1

(4) -1

Options :

212807115781. 1

212807115782. 2

212807115783. 3

212807115784. 4

Question Number : 391 Question Id : 21280728946 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	MCQ1

वक्र $y^2=16x$ पर बिन्दु $(1, 4)$ के अभिलम्ब की प्रवणता है :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) 1

(4) -1

Options :

212807115781. 1

212807115782. 2

212807115783. 3

212807115784. 4

Question Number : 392 Question Id : 21280728947 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	MCQ1

The function $f(x)=|x-1|$ is strictly increasing in the interval.

(1) $(0, 1)$

(2) $(-\infty, 0)$

(3) $(-\infty, -1)$

(4) $(1, \infty)$

Options :

212807115785. 1

212807115786. 2

212807115787. 3

212807115788. 4

Question Number : 392 Question Id : 21280728947 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	MCQ1

फलन $f(x)=|x-1|$ किस अंतराल में निरंतर वर्धमान है।

(1) $(0, 1)$

(2) $(-\infty, 0)$

(3) $(-\infty, -1)$

(4) $(1, \infty)$

Options :

212807115785. 1

212807115786. 2

212807115787. 3

212807115788. 4

Question Number : 393 Question Id : 21280728948 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	MCQ1

The value of the integral $\int \frac{\log x^3}{x} dx$ is :

(1) $\frac{2}{3}(\log x)^2 + C$, where C is a constant

(2) $\frac{3}{2}(\log x)^2 + C$, where C is a constant

(3) $\log x^2 + C$, where C is a constant

(4) $\log x^3 + C$, where C is a constant

Options :

212807115789. 1

212807115790. 2

212807115791. 3

212807115792. 4

Question Number : 393 Question Id : 21280728948 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	MCQ1

समाकलन $\int \frac{\log x^3}{x} dx$ का मान होगा :

(1) $\frac{2}{3}(\log x)^2 + C$, जहाँ C एक अचर है

(2) $\frac{3}{2}(\log x)^2 + C$, जहाँ C एक अचर है

(3) $\log x^2 + C$, जहाँ C एक अचर है

(4) $\log x^3 + C$, जहाँ C एक अचर है

Options :

212807115789. 1

212807115790. 2

212807115791. 3

212807115792. 4

Question Number : 394 Question Id : 21280728949 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	MCQ1

The area of the region bounded by $y=|x-5|$, $x=0$ and $x=1$ is :

(1) 16

(2) 8

(3) $\frac{9}{2}$

(4) $\frac{25}{2}$

Options :

212807115793. 1

212807115794. 2

212807115795. 3

212807115796. 4

Question Number : 394 Question Id : 21280728949 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	MCQ1

$y=|x-5|$, $x=0$ और $x=1$ से परिबद्ध क्षेत्र का क्षेत्रफल है

(1) 16

(2) 8

(3) $\frac{9}{2}$

(4) $\frac{25}{2}$

Options :

212807115793. 1

212807115794. 2

212807115795. 3

212807115796. 4

Question Number : 395 Question Id : 21280728950 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	MCQ1

Match List - I with List - II.

List - I	List - II
(A) $\left[1+\left(\frac{dy}{dx}\right)^2\right]=\left(\frac{d^2y}{dx^2}\right)^2$	(I) order = 2, degree = 2
(B) $\frac{d^3y}{dx^3}-3\frac{d^2y}{dx^2}+2\left(\frac{dy}{dx}\right)^4=y^4$	(II) order = 3, degree = 2
(C) $\left(1+\frac{dy}{dx}\right)^3=\left(\frac{d^3y}{dx^3}\right)^2$	(III) order = 2, degree = 1
(D) $\left[1+\left(\frac{dy}{dx}\right)^2\right]^2=\frac{d^2y}{dx^2}$	(IV) order = 3, degree = 1

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

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

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

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

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

Options :

212807115797. 1

212807115798. 2

212807115799. 3

212807115800. 4

Question Number : 395 Question Id : 21280728950 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	MCQ1

सूची-I से सूची-II का मिलान कीजिए:

सूची-I		सूची-II	
(A)	$\left[1+\left(\frac{dy}{dx}\right)^2\right]=\left(\frac{d^2y}{dx^2}\right)^2$	(I)	कोटि = 2, घात = 2
(B)	$\frac{d^3y}{dx^3}-3\frac{d^2y}{dx^2}+2\left(\frac{dy}{dx}\right)^4=y^4$	(II)	कोटि = 3, घात = 2
(C)	$\left(1+\frac{dy}{dx}\right)^3=\left(\frac{d^3y}{dx^3}\right)^2$	(III)	कोटि = 2, घात = 1
(D)	$\left[1+\left(\frac{dy}{dx}\right)^2\right]^2=\frac{d^2y}{dx^2}$	(IV)	कोटि = 3, घात = 1

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

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

Options :

212807115797. 1
212807115798. 2
212807115799. 3
212807115800. 4

Question Number : 396 Question Id : 21280728951 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	MCQ1

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

List - I Differential equation		**List - II** Integrating Factor (I.F.)	
(A)	$\frac{dy}{dx}-\frac{y}{x}=2x$	(I)	x^2-1
(B)	$\frac{dy}{dx}+\left(\frac{2x}{x^2-1}\right)y=\frac{2}{\left(x^2-1\right)^2}$	(II)	$\sqrt{1-x^2}$
(C)	$\frac{dy}{dx}-\left(\frac{x}{1-x^2}\right)y=\frac{1}{1-x^2}$	(III)	$\frac{1}{x}$
(D)	$\frac{dy}{dx}+\frac{2xy}{1+x^2}=\frac{\cot x}{1+x^2}$	(IV)	$1+x^2$

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

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

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

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

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

Options :

212807115801. 1

212807115802. 2

212807115803. 3

212807115804. 4

Question Number : 396 Question Id : 21280728951 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	MCQ1

सूची-I से सूची-II का मिलान कीजिए:

सूची-I अवकलन समीकरण		सूची-II समाकलन गुणक	
(A)	$\frac{dy}{dx}-\frac{y}{x}=2x$	(I)	x^2-1
(B)	$\frac{dy}{dx}+\left(\frac{2x}{x^2-1}\right)y=\frac{2}{\left(x^2-1\right)^2}$	(II)	$\sqrt{1-x^2}$
(C)	$\frac{dy}{dx}-\left(\frac{x}{1-x^2}\right)y=\frac{1}{1-x^2}$	(III)	$\frac{1}{x}$
(D)	$\frac{dy}{dx}+\frac{2xy}{1+x^2}=\frac{\cot x}{1+x^2}$	(IV)	$1+x^2$

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

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

Options :
212807115801. 1
212807115802. 2
212807115803. 3
212807115804. 4

Question Number : 397 Question Id : 21280728952 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	MCQ1

Corner points of the feasible region for a linear programming program are (0, 2), (3, 0), (4, 1), (2, 3) and (0, 3).

Let $F=4x+6y$ be the objective function.

The minimum value of F occurs at :

(1) (0, 2) only
(2) (3, 0) only
(3) mid point of the line segment joining the points (0, 2) and (3, 0) only
(4) every point on the line segment joining the points (0, 2) and (3, 0)

Options :
212807115805. 1
212807115806. 2
212807115807. 3
212807115808. 4

Question Number : 397 Question Id : 21280728952 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	MCQ1

किसी LPP के सुसंगत क्षेत्र के कोनीय बिंदु (0, 2), (3, 0), (4, 1), (2, 3) तथा (0, 3) हैं।

यदि $F = 4x + 6y$ एक उद्देश्य फलन है।

तो F का न्यूनतम मान है :

(1) केवल (0, 2) पर

(2) केवल (3, 0) पर

(3) (0, 2) तथा (3, 0) को मिलाने वाली रेखाखंड के मध्य बिंदु पर

(4) (0, 2) and (3, 0) को मिलाने वाली रेखाखंड के प्रत्येक बिंदु पर

Options :

212807115805. 1

212807115806. 2

212807115807. 3

212807115808. 4

Question Number : 398 Question Id : 21280728953 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	MCQ1

For the objective function $z = px + qy$, where p, q > 0 the corner points of the feasible region determined by the system of linear constraints are - (0, 10), (5, 5), (15, 15) and (0, 20), condition on p and q so that maximum of z occurs at both the points (15, 15) and (0, 20) is :

(1) $p = q$

(2) $p = 2q$

(3) $q = 2p$

(4) $q = 3p$

Options :

212807115809. 1

212807115810. 2

212807115811. 3

212807115812. 4

Question Number : 398 Question Id : 21280728953 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	MCQ1

उद्देश्य फलन $z = px + qy$, जहाँ $p, q > 0$ के लिए सुसंगत क्षेत्र के कोनीय बिंदु - (0, 10), (5, 5), (15, 15) तथा (0, 20) हैं, जिनका निर्धारण रैखिक व्यवरोधों के निकाय द्वारा होता है। p एवं q के बीच वह शर्त जहाँ दो बिंदु (15, 15) तथा (0, 20) पर z अधिकतम हो _____ :

(1) $p = q$

(2) $p = 2q$

(3) $q = 2p$

(4) $q = 3p$

Options :

212807115809. 1

212807115810. 2

212807115811. 3

212807115812. 4

Question Number : 399 Question Id : 21280728954 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	MCQ1

A random variable X has the following probability distribution :

X	1	2	3	4	5	6	7
P(X)	C	2C	2C	3C	C^2	$2C^2$	$7C^2+C$

Then the value of C is :

(1) $\frac{1}{10}$

(2) $\frac{1}{5}$

(3) $\frac{3}{10}$

(4) -1

Options :

212807115813. 1

212807115814. 2

212807115815. 3

212807115816. 4

Question Number : 399 Question Id : 21280728954 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	MCQ1

एक यादृच्छिक चर X का प्रायिकता बंटन है :

X	1	2	3	4	5	6	7
P(X)	C	2C	2C	3C	C^2	$2C^2$	$7C^2+C$

तब C का मान है :

(1) $\frac{1}{10}$

(2) $\frac{1}{5}$

(3) $\frac{3}{10}$

(4) -1

Options :

212807115813. 1

212807115814. 2

212807115815. 3

212807115816. 4

Question Number : 400 Question Id : 21280728955 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	MCQ1

If the mean of Binomial distribution is 5 and Variance is 3 then the value of p (probability of success) is :

(1) $\frac{1}{5}$

(2) $\frac{2}{5}$

(3) $\frac{3}{5}$

(4) $\frac{4}{5}$

Options :

212807115817. 1

212807115818. 2

212807115819. 3

212807115820. 4

Question Number : 400 Question Id : 21280728955 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	MCQ1

यदि द्विपद बंटन का माध्य 5 और प्रसरण 3 है तब p (सफलता की प्रायिकता) है _____ :

(1) $\frac{1}{5}$

(2) $\frac{2}{5}$

(3) $\frac{3}{5}$

(4) $\frac{4}{5}$

Options :

212807115817. 1

212807115818. 2

212807115819. 3

212807115820. 4

Core Mathematics

Section Id :	212807736
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 :	2128072107
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 401 Question Id : 21280728956 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 $f(x) = |x|$ and $g(x) = [x]$, then the value of $fog\left(-\frac{9}{2}\right) - gof\left(-\frac{9}{2}\right)$ is :

(1) -1

(2) 1

(3) -9

(4) 9

Options :

212807115821. 1

212807115822. 2

212807115823. 3

212807115824. 4

Question Number : 401 Question Id : 21280728956 Question Type : MCQ Option Shuffling : No Is Question Mandatory : culator : 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

माना $f(x)=|x|$ तथा $g(x)=[x]$ तब $fog\left(-\frac{9}{2}\right)-gof\left(-\frac{9}{2}\right)$ का मान है :

(1) -1
(2) 1
(3) -9
(4) 9

Options :
212807115821. 1
212807115822. 2
212807115823. 3
212807115824. 4

Question Number : 402 Question Id : 21280728957 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 R be a relation on the set of integers Z such that $R=\{(a, b), a=2^k b, a, b, k\epsilon Z\}$, then R is :

(1) Reflexive but not Symmetric and Transitive
(2) Symmetric and Reflexive but not Transitive
(3) Equivalence relation
(4) Reflexive and Transitive but not Symmetric

Options :
212807115825. 1
212807115826. 2
212807115827. 3
212807115828. 4

Question Number : 402 Question Id : 21280728957 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

माना R पूर्णांकों के समुच्चय Z पर संबंध इस प्रकार है कि $R=\{(a, b), a=2^k b, a, b, k\epsilon Z\}$ तो R होगा :

(1) स्वतुल्य परंतु संक्रामक व सममित नहीं
(2) सममित एवं स्वतुल्य पर संक्रामक नहीं
(3) तुल्यता संबंध
(4) स्वतुल्य एवं संक्रामक परंतु सममित नहीं

Options :
212807115825. 1
212807115826. 2
212807115827. 3

212807115828. 4

Question Number : 403 Question Id : 21280728958 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 value of $\sin\left(2\sin^{-1}\frac{4}{5}\right)$ is given by :

(1) $\frac{16}{25}$

(2) $\frac{24}{25}$

(3) $\frac{9}{25}$

(4) $\frac{12}{25}$

Options :

212807115829. 1

212807115830. 2

212807115831. 3

212807115832. 4

Question Number : 403 Question Id : 21280728958 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

दिये गये $\sin\left(2\sin^{-1}\frac{4}{5}\right)$ का मान होगा :

(1) $\frac{16}{25}$

(2) $\frac{24}{25}$

(3) $\frac{9}{25}$

(4) $\frac{12}{25}$

Options :

212807115829. 1

212807115830. 2

212807115831. 3

212807115832. 4

Question Number : 404 Question Id : 21280728959 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 $\cos^{-1}\sqrt{3}x+\cos^{-1}x=\frac{\pi}{2}$, then the value of x is :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) $\frac{1}{\sqrt{2}}$

(4) $-\frac{1}{\sqrt{2}}$

Options :

212807115833. 1

212807115834. 2

212807115835. 3

212807115836. 4

Question Number : 404 Question Id : 21280728959 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 $\cos^{-1}\sqrt{3}x+\cos^{-1}x=\frac{\pi}{2}$ तब x का मान है :

(1) $\frac{1}{2}$

(2) $-\frac{1}{2}$

(3) $\frac{1}{\sqrt{2}}$

(4) $-\frac{1}{\sqrt{2}}$

Options :

212807115833. 1

212807115834. 2

212807115835. 3

212807115836. 4

Question Number : 405 Question Id : 21280728960 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 $A=\begin{bmatrix} 1 & 0 \\ \frac{1}{25} & 1 \end{bmatrix}$, then the value of A^{125} is :

(1) $\begin{bmatrix} 1 & 5 \\ 0 & 1 \end{bmatrix}$

(2) $\begin{bmatrix} 0 & 1 \\ 1 & 5 \end{bmatrix}$

(3) $\begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$

(4) $\begin{bmatrix} 5 & 1 \\ 1 & 0 \end{bmatrix}$

Options :

212807115837. 1

212807115838. 2

212807115839. 3

212807115840. 4

Question Number : 405 Question Id : 21280728960 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 $A=\begin{bmatrix} 1 & 0 \\ \frac{1}{25} & 1 \end{bmatrix}$, तब A^{125} का मान है :

(1) $\begin{bmatrix} 1 & 5 \\ 0 & 1 \end{bmatrix}$

(2) $\begin{bmatrix} 0 & 1 \\ 1 & 5 \end{bmatrix}$

(3) $\begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$

(4) $\begin{bmatrix} 5 & 1 \\ 1 & 0 \end{bmatrix}$

Options :

212807115837. 1

212807115838. 2
212807115839. 3
212807115840. 4

Question Number : 406 Question Id : 21280728961 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 $\begin{pmatrix} 2 & 4 & 5 \\ 4 & 2 & 3 \\ K & 3 & 2 \end{pmatrix}$ is a symmetric matrix, then the value of K is :

(1) -5

(2) 0

(3) 5

(4) 1

Options :

212807115841. 1
212807115842. 2
212807115843. 3
212807115844. 4

Question Number : 406 Question Id : 21280728961 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 $\begin{pmatrix} 2 & 4 & 5 \\ 4 & 2 & 3 \\ K & 3 & 2 \end{pmatrix}$ एक सममित आव्यूह है, तब K का मान बतायें है :

(1) -5

(2) 0

(3) 5

(4) 1

Options :

212807115841. 1
212807115842. 2
212807115843. 3
212807115844. 4

Question Number : 407 Question Id : 21280728962 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 x, y, z are all distinct and $\begin{vmatrix} x & x^2 & 1+x^3 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0$, then the value of xyz is :

(1) -2

(2) -1

(3) -3

(4) 2

Options :

212807115845. 1

212807115846. 2

212807115847. 3

212807115848. 4

Question Number : 407 Question Id : 21280728962 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, y, z विभिन्न हो और $\begin{vmatrix} x & x^2 & 1+x^3 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0$, तब xyz का मान है :

(1) -2

(2) -1

(3) -3

(4) 2

Options :

212807115845. 1

212807115846. 2

212807115847. 3

212807115848. 4

Question Number : 408 Question Id : 21280728963 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

By using the determinants the area of the triangle with vertices (0, 0), (0, 1) and (1, 0) is :

(1) 1

(2) 2

(3) $\frac{1}{2}$

(4) $\frac{1}{4}$

Options :

212807115849. 1

212807115850. 2

212807115851. 3

212807115852. 4

Question Number : 408 Question Id : 21280728963 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 त्रिभुज जिसके शीर्ष (0, 0), (0, 1) और (1, 0) हैं, सारणिक विधि द्वारा इसका क्षेत्रफल है :

(1) 1

(2) 2

(3) $\frac{1}{2}$

(4) $\frac{1}{4}$

Options :

212807115849. 1

212807115850. 2

212807115851. 3

212807115852. 4

Question Number : 409 Question Id : 21280728964 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 skew-symmetric matrix of order $n \times n$ and a_{ij} is the $(i, j)^{th}$ elements, then :

(1) $a_{ij} = \frac{1}{a_{ji}}$ for all values of i and j

(2) $a_{ij} = 0$ when $i = j$

(3) $a_{ij} \neq 0$ for all values of i and j

(4) $a_{ij} \neq 0$ when $i = j$ only

Options :

212807115853. 1

212807115854. 2
212807115855. 3
212807115856. 4

Question Number : 409 Question Id : 21280728964 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 विषम सममित आव्यूह की कोटि $n \times n$ और a_{ij} $(i, j)^{th}$ अवयव है तब :

(1) $a_{ij} = \frac{1}{a_{ji}}$ i और j के सभी मानों के लिए

(2) $a_{ij} = 0$ जब $i = j$

(3) $a_{ij} \neq 0$ i और j के सभी मानों के लिए

(4) $a_{ij} \neq 0$ जब केवल $i = j$

Options :

212807115853. 1
212807115854. 2
212807115855. 3
212807115856. 4

Question Number : 410 Question Id : 21280728965 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 value of the determinant $\begin{vmatrix} a+b & b+c & c+a \\ c & a & b \\ 1 & 1 & 1 \end{vmatrix}$ is :

(1) 0

(2) -1

(3) 1

(4) 2

Options :

212807115857. 1
212807115858. 2
212807115859. 3
212807115860. 4

Question Number : 410 Question Id : 21280728965 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

सारणिक $\begin{vmatrix} a+b & b+c & c+a \\ c & a & b \\ 1 & 1 & 1 \end{vmatrix}$ का मान है :

(1) 0

(2) -1

(3) 1

(4) 2

Options :

212807115857. 1

212807115858. 2

212807115859. 3

212807115860. 4

Question Number : 411 Question Id : 21280728966 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 $f(x)=\begin{cases} \dfrac{\tan\left(\frac{\pi}{4}-x\right)}{\cot 2x}, & x\neq\dfrac{\pi}{4} \\ K, & x=\dfrac{\pi}{4} \end{cases}$ is continuous at $x=\dfrac{\pi}{4}$, then the value of K is :

(1) 1

(2) 2

(3) $\frac{1}{2}$

(4) $\frac{1}{4}$

Options :

212807115861. 1

212807115862. 2

212807115863. 3

212807115864. 4

Question Number : 411 Question Id : 21280728966 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 फलन $f(x)=\begin{cases}\dfrac{\tan\left(\frac{\pi}{4}-x\right)}{\cot 2x}, & x\neq\dfrac{\pi}{4}\\ K, & x=\dfrac{\pi}{4}\end{cases}$ $x=\dfrac{\pi}{4}$ पर संतत है तब K का मान है :

(1) 1

(2) 2

(3) $\frac{1}{2}$

(4) $\frac{1}{4}$

Options :

212807115861. 1

212807115862. 2

212807115863. 3

212807115864. 4

Question Number : 412 Question Id : 21280728967 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 $f(x)=\begin{cases}\dfrac{x^2+2x-3}{x-1} & x\neq 1\\ 2 & x=1\end{cases}$ is :

(1) continuous at $x=1$ only

(2) discontinuous at $x=1$

(3) continuous at every real number

(4) discontinuous at every real number

Options :

212807115865. 1

212807115866. 2

212807115867. 3

212807115868. 4

Question Number : 412 Question Id : 21280728967 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 फलन $f(x)=\begin{cases}\frac{x^2+2x-3}{x-1} & x\neq 1\\ 2 & x=1\end{cases}$ है :

(1) संतत, केवल $x=1$ पर

(2) असंतत, $x=1$ पर

(3) संतत, प्रत्येक वास्तविक संख्या पर

(4) असंतत, प्रत्येक वास्तविक संख्या पर

Options :

212807115865. 1

212807115866. 2

212807115867. 3

212807115868. 4

Question Number : 413 Question Id : 21280728968 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 $y=5\cos x-3\sin x$, then $\frac{d^2y}{dx^2}$ is equal to :

(1) y

(2) $-y$

(3) $2y$

(4) $-2y$

Options :

212807115869. 1

212807115870. 2

212807115871. 3

212807115872. 4

Question Number : 413 Question Id : 21280728968 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 $y=5\cos x-3\sin x$, तब $\frac{d^2y}{dx^2}$ बराबर है _____ :

(1) y

(2) $-y$

(3) $2y$

(4) $-2y$

Options :

212807115869. 1

212807115870. 2
212807115871. 3
212807115872. 4

Question Number : 414 Question Id : 21280728969 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

For which values of a, $f(x) = a(x + \sin x)$ is an increasing function ?

(1) $a \leq 0$

(2) $a \in (0, \infty)$

(3) $a \in [0, \infty)$

(4) $a \in R$ (set of real numbers)

Options :

212807115873. 1
212807115874. 2
212807115875. 3
212807115876. 4

Question Number : 414 Question Id : 21280728969 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

$f(x) = a(x + \sin x)$ एक वर्धमान फलन है, a के मान हैं _____ :

(1) $a \leq 0$

(2) $a \in (0, \infty)$

(3) $a \in [0, \infty)$

(4) $a \in R$ (वास्तविक संख्याओं का समुच्चय)

Options :

212807115873. 1
212807115874. 2
212807115875. 3
212807115876. 4

Question Number : 415 Question Id : 21280728970 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 $f(x) = \tan x - x$ for $x \in \left(0, \frac{\pi}{2}\right)$ is :

(1) increasing function

(2) decreasing function

(3) neither increasing nor decreasing function

(4) strictly decreasing function

Options :

212807115877. 1

212807115878. 2

212807115879. 3

212807115880. 4

Question Number : 415 Question Id : 21280728970 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

$x \in \left(0, \frac{\pi}{2}\right)$ के लिए फलन $f(x) = \tan x - x$ है

(1) वर्धमान फलन

(2) ह्रासमान फलन

(3) ना वर्धमान, ना ह्रासमान

(4) निरंतर ह्रासमान फलन

Options :

212807115877. 1

212807115878. 2

212807115879. 3

212807115880. 4

Question Number : 416 Question Id : 21280728971 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 length of a simple pendulum is decreased by 3%, the percentage change in its period T is :

[Note : $T = 2\pi\sqrt{\frac{L}{g}}$ where L is the length of pendulum and g is constant]

(1) 1.5% decrease

(2) 1.8% decrease

(3) 2% increase

(4) 2.5% decrease

Options :

212807115881. 1

212807115882. 2

212807115883. 3

212807115884. 4

Question Number : 416 Question Id : 21280728971 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 एक सरल लोलक की लम्बाई में 3% कमी की गयी, तो उसके समय T में कितने प्रतिशत बदलाव होगा :

[नोट : $T = 2\pi\sqrt{\frac{L}{g}}$ जहाँ L सरल लोलक की लम्बाई और g एक नियतांक है]

(1) 1.5% कमी

(2) 1.8% कमी

(3) 2% वृद्धी

(4) 2.5% कमी

Options :

212807115881. 1
212807115882. 2
212807115883. 3
212807115884. 4

Question Number : 417 Question Id : 21280728972 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 value of $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\sin|x| - \cos|x|)\,dx$ is :

(1) -1

(2) 2

(3) 0

(4) 1

Options :

212807115885. 1
212807115886. 2
212807115887. 3
212807115888. 4

Question Number : 417 Question Id : 21280728972 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

$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (\sin|x| - \cos|x|)\,dx$ का मान है :

(1) -1

(2) 2

(3) 0

(4) 1

Options :

212807115885. 1

212807115886. 2

212807115887. 3

212807115888. 4

Question Number : 418 Question Id : 21280728973 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 value of $\int \frac{\cos x\,dx}{(1+\sin x)(2+\sin x)}$ is :

(1) $\log\left|\frac{1}{(1+\sin x)(2+\sin x)}\right| + C$, where C is a constant

(2) $\log\left|\frac{2+\cos x}{1+\cos x}\right| + C$, where C is a constant

(3) $\log\left|\frac{2+\sin x}{1+\sin x}\right| + C$, where C is a constant

(4) $\log\left|\frac{1+\sin x}{2+\sin x}\right| + C$, where C is a constant

Options :

212807115889. 1

212807115890. 2

212807115891. 3

212807115892. 4

Question Number : 418 Question Id : 21280728973 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

$\int \frac{\cos x\, dx}{(1+\sin x)(2+\sin x)}$ का मान है :

(1) $\log\left|\frac{1}{(1+\sin x)(2+\sin x)}\right| + C$, जहाँ C एक अचर है

(2) $\log\left|\frac{2+\cos x}{1+\cos x}\right| + C$, जहाँ C एक अचर है

(3) $\log\left|\frac{2+\sin x}{1+\sin x}\right| + C$, जहाँ C एक अचर है

(4) $\log\left|\frac{1+\sin x}{2+\sin x}\right| + C$, जहाँ C एक अचर है

Options :

212807115889. 1

212807115890. 2

212807115891. 3

212807115892. 4

Question Number : 419 Question Id : 21280728974 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

Using integration the area enclosed by the ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ is equal to :

(1) πab

(2) $\pi a^2 b$

(3) $\pi^2 ab$

(4) πab^2

Options :

212807115893. 1

212807115894. 2

212807115895. 3

212807115896. 4

Question Number : 419 Question Id : 21280728974 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

समाकलन विधि से दीर्घ वृत $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ द्वारा घिरे क्षेत्र का क्षेत्रफल है :

(1) πab

(2) $\pi a^2 b$

(3) $\pi^2 ab$

(4) πab^2

Options :

212807115893. 1

212807115894. 2

212807115895. 3

212807115896. 4

Question Number : 420 Question Id : 21280728975 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 enclosed between $y^2=4x$ and $x=1$ and $x=3$ in the first quadrant is :

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

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

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

(4) $\frac{8}{3}\left(3\sqrt{3}-1\right)$

Options :

212807115897. 1

212807115898. 2

212807115899. 3

212807115900. 4

Question Number : 420 Question Id : 21280728975 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

$y^2=4x$ तथा $x=1$ और $x=3$ प्रथम चतुर्थांश से परिबद्ध क्षेत्र का क्षेत्रफल है :

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

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

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

(4) $\frac{8}{3}\left(3\sqrt{3}-1\right)$

Options :

212807115897. 1

212807115898. 2

212807115899. 3

212807115900. 4

Question Number : 421 Question Id : 21280728976 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 general solution of the differential equation $\frac{dy}{dx}-\frac{y}{x}=x^2$ is :

(1) $y=\frac{x^3}{2}+C$, where C is a constant

(2) $y=\frac{x^3}{2}+Cx$, where C is a constant

(3) $y=\frac{x}{2}+Cx$, where C is a constant

(4) $y=\frac{x^3}{2}+Cx^2$, where C is a constant

Options :

212807115901. 1

212807115902. 2

212807115903. 3

212807115904. 4

Question Number : 421 Question Id : 21280728976 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

अवकलन समीकरण $\frac{dy}{dx}-\frac{y}{x}=x^2$ का व्यापक हल है :

(1) $y=\frac{x^3}{2}+C$, जहाँ C एक अचर है

(2) $y=\frac{x^3}{2}+Cx$, जहाँ C एक अचर है

(3) $y=\frac{x}{2}+Cx$, जहाँ C एक अचर है

(4) $y=\frac{x^3}{2}+Cx^2$, जहाँ C एक अचर है

Options :

212807115901. 1

212807115902. 2

212807115903. 3

212807115904. 4

Question Number : 422 Question Id : 21280728977 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 order and degree of the differential equation $\left(\frac{d^2y}{dx^2}\right)^2+x^2\left(\frac{dy}{dx}\right)^3+y=\sin x$ respectively are :

(1) 2, 2

(2) 2, 3

(3) 2, 1

(4) 1, 2

Options :

212807115905. 1

212807115906. 2

212807115907. 3

212807115908. 4

Question Number : 422 Question Id : 21280728977 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

अवकलन समीकरण $\left(\frac{d^2y}{dx^2}\right)^2 + x^2\left(\frac{dy}{dx}\right)^3 + y = \sin x$ की कोटि और घात क्रमशः हैं :

(1) 2, 2

(2) 2, 3

(3) 2, 1

(4) 1, 2

Options :

212807115905. 1

212807115906. 2

212807115907. 3

212807115908. 4

Question Number : 423 Question Id : 21280728978 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 two vectors $\vec{a}$ and $\vec{b}$ are such that $|\vec{a}| = 2, |\vec{b}| = 3$ and $\vec{a} \cdot \vec{b} = 4$, then $|\vec{a} - 2\vec{b}|$ is :

(1) 24

(2) $2\sqrt{2}$

(3) $2\sqrt{6}$

(4) 40

Options :

212807115909. 1

212807115910. 2

212807115911. 3

212807115912. 4

Question Number : 423 Question Id : 21280728978 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 दो सदिशों $\vec{a}$ और $\vec{b}$ इस प्रकार हे कि $|\vec{a}| = 2, |\vec{b}| = 3$ और $\vec{a} \cdot \vec{b} = 4$, तब $|\vec{a} - 2\vec{b}|$ है :

(1) 24

(2) $2\sqrt{2}$

(3) $2\sqrt{6}$

(4) 40

Options :

212807115909. 1

212807115910. 2
212807115911. 3
212807115912. 4

Question Number : 424 Question Id : 21280728979 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)	$\left(\hat{i}\times\hat{j}\right)+\left(\hat{j}\times\hat{i}\right)$	(I)	1
(B)	$\hat{i}\cdot\hat{i}+\hat{j}\cdot\hat{j}+\hat{k}\cdot\hat{k}$	(II)	$\hat{k}-\hat{j}$
(C)	$\hat{i}\times\left(\hat{i}+\hat{j}+\hat{k}\right)$	(III)	$\vec{0}$
(D)	$\hat{i}\cdot\left(\hat{i}+\hat{j}+\hat{k}\right)$	(IV)	3

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

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

Options :

212807115913. 1
212807115914. 2
212807115915. 3
212807115916. 4

Question Number : 424 Question Id : 21280728979 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 से सूची-II का मिलान कीजिए:

सूची-I		सूची-II	
(A)	$\left(\hat{i}\times\hat{j}\right)+\left(\hat{j}\times\hat{i}\right)$	(I)	1
(B)	$\hat{i}\cdot\hat{i}+\hat{j}\cdot\hat{j}+\hat{k}\cdot\hat{k}$	(II)	$\hat{k}-\hat{j}$
(C)	$\hat{i}\times\left(\hat{i}+\hat{j}+\hat{k}\right)$	(III)	$\vec{0}$
(D)	$\hat{i}\cdot\left(\hat{i}+\hat{j}+\hat{k}\right)$	(IV)	3

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

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

Options :

212807115913. 1
212807115914. 2
212807115915. 3
212807115916. 4

Question Number : 425 Question Id : 21280728980 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 intercept made by the plane $2x-3y+5z+4=0$ on z-axis is :

(1) $-\frac{4}{5}$
(2) -2
(3) $\frac{4}{3}$
(4) 2

Options :

212807115917. 1
212807115918. 2
212807115919. 3
212807115920. 4

Question Number : 425 Question Id : 21280728980 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

समतल $2x-3y+5z+4=0$ द्वारा z-अक्ष पर काटा गया अन्तः खण्ड है :

(1) $-\frac{4}{5}$

(2) -2

(3) $\frac{4}{3}$

(4) 2

Options :

212807115917. 1

212807115918. 2

212807115919. 3

212807115920. 4

Question Number : 426 Question Id : 21280728981 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 lines $\frac{x}{1}=\frac{y}{2}=\frac{z}{3}$ and $\frac{x-3}{-3}=\frac{y-4}{-6}=\frac{z-5}{-9}$ are :

(1) coincident

(2) skew

(3) intersecting

(4) parallel

Options :

212807115921. 1

212807115922. 2

212807115923. 3

212807115924. 4

Question Number : 426 Question Id : 21280728981 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 $\frac{x}{1}=\frac{y}{2}=\frac{z}{3}$ और $\frac{x-3}{-3}=\frac{y-4}{-6}=\frac{z-5}{-9}$ हैं :

(1) समपाती

(2) विषम

(3) प्रतिच्छेदी

(4) समान्तर

Options :

212807115921. 1

212807115922. 2
212807115923. 3
212807115924. 4

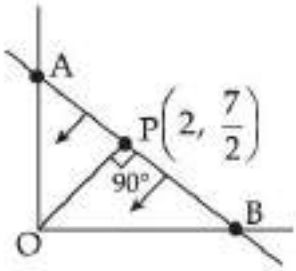
Question Number : 427 Question Id : 21280728982 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

In the adjoining figure, the inequality representing AB is :



(1) $14x+8y\leq 65$

(2) $x+2y\leq 9$

(3) $8x+14y\leq 65$

(4) $4x+6y\leq 29$

Options :

212807115925. 1
212807115926. 2
212807115927. 3
212807115928. 4

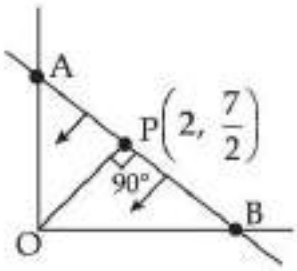
Question Number : 427 Question Id : 21280728982 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Wrong Marks : 1

Question Key Details :

Key	Value
Comprehension	MCQ2

दिये गये चित्र में एक असमीका AB को निरूपित करती है :



(1) $14x+8y\leq 65$

(2) $x+2y\leq 9$

(3) $8x+14y\leq 65$

(4) $4x+6y\leq 29$

Options :

212807115925. 1
212807115926. 2
212807115927. 3

212807115928. 4

Question Number : 428 Question Id : 21280728983 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 corner points of the feasible region determined by the following system of linear inequalities $2x+y\leq 10$, $x+3y\leq 15$, $x, y\geq 0$ are (0, 0), (5, 0), (3, 4) and (0, 5). Let $z=px+qy$ where p and q > 0. The condition on p and q so that the maximum of z occurs at both (3, 4) and (0, 5) is :

(1) $p=q$

(2) $p=2q$

(3) $p=3q$

(4) $q=3p$

Options :

212807115929. 1

212807115930. 2

212807115931. 3

212807115932. 4

Question Number : 428 Question Id : 21280728983 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

किसी सुसंगत क्षेत्र के कोनीय बिंदु (0, 0), (5, 0), (3, 4) तथा (0, 5) का निर्धारण रैखीय व्यवरोध $2x+y\leq 10$, $x+3y\leq 15$, $x, y\geq 0$ के निकायों द्वारा होता है। माना $z=px+qy$ जहाँ p एवं q > 0 तो p एवं q में वह शर्त स्थापित करें कि दो बिंदु (3, 4) तथा (0, 5) पर z अधिकतम हो :

(1) $p=q$

(2) $p=2q$

(3) $p=3q$

(4) $q=3p$

Options :

212807115929. 1

212807115930. 2

212807115931. 3

212807115932. 4

Question Number : 429 Question Id : 21280728984 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**. Given $P(A)=\frac{1}{3}$ and $P(B)=\frac{1}{5}$ where A and B are independent.

List - I		List - II	
(A)	$P(A \cap B)$	(I)	$\frac{7}{15}$
(B)	$P(A' \cap B')$	(II)	$\frac{2}{5}$
(C)	P(at least one of the two events takes place)	(III)	$\frac{1}{15}$
(D)	P(only one event takes place)	(IV)	$\frac{8}{15}$

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

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

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

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

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

Options :

212807115933. 1

212807115934. 2

212807115935. 3

212807115936. 4

Question Number : 429 Question Id : 21280728984 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 से **सूची-II** का मिलान कीजिए। दिया है $P(A)=\frac{1}{3}$ और $P(B)=\frac{1}{5}$ जहाँ A और B स्वतंत्र है।

	सूची - I		**सूची - II**
(A)	$P(A \cap B)$	(I)	$\frac{7}{15}$
(B)	$P(A' \cap B')$	(II)	$\frac{2}{5}$
(C)	P (दो घटनाओं में से कम से कम एक स्थान लेती है)	(III)	$\frac{1}{15}$
(D)	P (केवल एक घटना स्थान लेती है)	(IV)	$\frac{8}{15}$

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

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

Options :
212807115933. 1
212807115934. 2
212807115935. 3
212807115936. 4

Question Number : 430 Question Id : 21280728985 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 $P(A)=\frac{2}{5}, P(B)=\frac{3}{10}$ and $P(A \cap B)=\frac{1}{5}$, then $P(A'/B')-P(B'/A')$ is equal to :

(1) $\frac{5}{6}$

(2) $\frac{5}{7}$

(3) $\frac{25}{42}$

(4) $\frac{27}{42}$

Options :
212807115937. 1
212807115938. 2
212807115939. 3
212807115940. 4

Question Number : 430 Question Id : 21280728985 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 $P(A)=\frac{2}{5}, P(B)=\frac{3}{10}$ और $P(A \cap B)=\frac{1}{5}$, तब $P(A'/B') \cdot P(B'/A')$ के बराबर है :

(1) $\frac{5}{6}$

(2) $\frac{5}{7}$

(3) $\frac{25}{42}$

(4) $\frac{27}{42}$

Options :

212807115937. 1

212807115938. 2

212807115939. 3

212807115940. 4

Sub-Section Number : 2

Sub-Section Id : 2128072108

Question Shuffling Allowed : No

Is Section Default? : null

Question Number : 431 Question Id : 21280728986 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 function $f : \mathbf{R} \to \mathbf{R}, f(x)=x^2$ is :

(1) injective but not surjective

(2) surjective but not injective

(3) injective as well as surjective

(4) neither injective nor surjective

Options :

212807115941. 1

212807115942. 2

212807115943. 3

212807115944. 4

Question Number : 431 Question Id : 21280728986 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 $f: \mathbf{R} \to \mathbf{R}, f(x) = x^2$ है :

(1) एकैक लेकिन आच्छादी नहीं

(2) आच्छादी लेकिन एकैक नहीं

(3) एकैक तथा आच्छादी

(4) ना एकैक, ना आच्छादी

Options :

212807115941. 1

212807115942. 2

212807115943. 3

212807115944. 4

Question Number : 432 Question Id : 21280728987 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

If $y = 3\cos(\log x) + 4\sin(\log x)$, then choose correct option :

(1) $x^2y'' - xy' + y = 0$

(2) $x^2y'' + xy' - y = 0$

(3) $x^2y'' + xy' + y = 0$

(4) $x^2y'' - xy' - y = 0$

Options :

212807115945. 1

212807115946. 2

212807115947. 3

212807115948. 4

Question Number : 432 Question Id : 21280728987 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 $y = 3\cos(\log x) + 4\sin(\log x)$, तब सही विकल्प है :

(1) $x^2y'' - xy' + y = 0$

(2) $x^2y'' + xy' - y = 0$

(3) $x^2y'' + xy' + y = 0$

(4) $x^2y'' - xy' - y = 0$

Options :

212807115945. 1

212807115946. 2

212807115947. 3

212807115948. 4

Question Number : 433 Question Id : 21280728988 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 normal to the curve $y=4x^3+2\sin x$ at $(0, 3)$ is :

(1) $x-3y=3$

(2) $x+2y=6$

(3) $2x-y=-3$

(4) $2x+y=3$

Options :

212807115949. 1

212807115950. 2

212807115951. 3

212807115952. 4

Question Number : 433 Question Id : 21280728988 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

वक्र $y=4x^3+2\sin x$ का $(0, 3)$ पर अभिलम्ब का समीकरण है :

(1) $x-3y=3$

(2) $x+2y=6$

(3) $2x-y=-3$

(4) $2x+y=3$

Options :

212807115949. 1

212807115950. 2

212807115951. 3

212807115952. 4

Question Number : 434 Question Id : 21280728989 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 angle between the line $\frac{x+1}{2}=\frac{y}{3}=\frac{z-3}{6}$ and the plane $10x+2y-11z=3$ is :

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

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

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

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

Options :

212807115953. 1

212807115954. 2

212807115955. 3
212807115956. 4

Question Number : 434 Question Id : 21280728989 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 $\frac{x+1}{2}=\frac{y}{3}=\frac{z-3}{6}$ तथा समतल $10x+2y-11z=3$ के बीच का कोण है :

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

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

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

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

Options :

212807115953. 1
212807115954. 2
212807115955. 3
212807115956. 4

Question Number : 435 Question Id : 21280728990 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 area of a triangle having the points A(1, 1, 1), B(1, 2, 3) and C(2, 3, 1) as its vertices is :

(1) $\sqrt{21}$

(2) $2\sqrt{21}$

(3) $\frac{1}{4}\sqrt{21}$

(4) $\frac{1}{2}\sqrt{21}$

Options :

212807115957. 1
212807115958. 2
212807115959. 3
212807115960. 4

Question Number : 435 Question Id : 21280728990 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

त्रिभुज का क्षेत्रफल होगा यदि शीर्ष बिंदु A(1, 1, 1), B(1, 2, 3) और C(2, 3, 1) है _____ :

(1) $\sqrt{21}$

(2) $2\sqrt{21}$

(3) $\frac{1}{4}\sqrt{21}$

(4) $\frac{1}{2}\sqrt{21}$

Options :

212807115957. 1

212807115958. 2

212807115959. 3

212807115960. 4

Applied Mathematics

Section Id :	212807737
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 :	2128072109
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 436 Question Id : 21280728991 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 value of 6^{10} mod 5 is :

(1) 5

(2) 2

(3) 1

(4) 3

Options :

212807115961. 1

212807115962. 2

212807115963. 3

212807115964. 4

Question Number : 436 Question Id : 21280728991 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

6^{10} (मापांक 5) का मान है :

(1) 5

(2) 2

(3) 1

(4) 3

Options :

212807115961. 1

212807115962. 2

212807115963. 3

212807115964. 4

Question Number : 437 Question Id : 21280728992 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

Riya and Priya complete a 200 metres race in 1 minute 12 seconds and 1 minute 36 seconds respectively. By how many metres will Riya defeat Priya ?

(1) 25 metres

(2) 50 metres

(3) $\frac{25}{3}$ metres

(4) $\frac{50}{3}$ metres

Options :

212807115965. 1

212807115966. 2

212807115967. 3

212807115968. 4

Question Number : 437 Question Id : 21280728992 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

रीया और प्रिया 200 मीटर की दौड़ क्रमशः 1 मिनट 12 सेकेण्ड में और 1 मिनट 36 सेकेण्ड में पूरी करती हैं। रीया द्वारा प्रिया को कितने मीटर से हराया गया?

(1) 25 मीटर

(2) 50 मीटर

(3) $\frac{25}{3}$ मीटर

(4) $\frac{50}{3}$ मीटर

Options :

212807115965. 1

212807115966. 2

212807115967. 3

212807115968. 4

Question Number : 438 Question Id : 21280728993 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 set of values of 'x' for which $37-(3x+5) \geq 9x-8(x-3)$ holds true is :

(1) $(-\infty, 2]$

(2) $[2, \infty)$

(3) $(-\infty, 2)$

(4) $(2, \infty)$

Options :

212807115969. 1

212807115970. 2

212807115971. 3

212807115972. 4

Question Number : 438 Question Id : 21280728993 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

'x' के मानों का समुच्चय जिसके लिए $37-(3x+5) \geq 9x-8(x-3)$ सत्यापित होता है, है :

(1) $(-\infty, 2]$

(2) $[2, \infty)$

(3) $(-\infty, 2)$

(4) $(2, \infty)$

Options :

212807115969. 1

212807115970. 2

212807115971. 3

212807115972. 4

Question Number : 439 Question Id : 21280728994 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 ratio in which a shopkeeper mixes two goods 'A' and 'B' is 3 : 2. If the price of good 'A' is ₹ 20 and that of good 'B' is ₹ 15. Then the price of mixed goods is (₹) :

(1) 19

(2) 18

(3) 16

(4) 17

Options :

212807115973. 1

212807115974. 2

212807115975. 3
212807115976. 4

Question Number : 439 Question Id : 21280728994 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 दुकानदार ने दो वस्तुओं 'A' और 'B' को 3 : 2 अनुपात में मिश्रण करता है। यदि वस्तु 'A' का मूल्य ₹ 20 और वस्तु 'B' का मूल्य ₹ 15 है। मिश्रित उत्पाद का मूल्य है (₹) :

(1) 19

(2) 18

(3) 16

(4) 17

Options :

212807115973. 1
212807115974. 2
212807115975. 3
212807115976. 4

Question Number : 440 Question Id : 21280728995 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

There are three business partners A, B and C such that capital investment of A is ₹ 20,000 more than twice the investment of B and C invests ₹ 60,000 less than A. If they jointly invest ₹ 4,80,000, their capital ratio is :

(1) 4 : 1 : 2

(2) 15 : 9 : 11

(3) 11 : 5 : 8

(4) 27 : 21 : 16

Options :

212807115977. 1
212807115978. 2
212807115979. 3
212807115980. 4

Question Number : 440 Question Id : 21280728995 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 साझेदार A, B और C द्वारा व्यवसाय में निवेश इस प्रकार है कि A द्वारा निवेश की गयी पूंजी B द्वारा निवेश पूंजी की दुगुनी से ₹ 20,000 अधिक है तथा C द्वारा A से ₹ 60,000 कम राशि का निवेश किया गया है। यदि उन सबने मिलकर ₹ 4,80,000 का निवेश किया तो उनके निवेश की राशि का अनुपात है :

(1) 4 : 1 : 2

(2) 15 : 9 : 11

(3) 11 : 5 : 8

(4) 27 : 21 : 16

Options :

212807115977. 1

212807115978. 2

212807115979. 3

212807115980. 4

Question Number : 441 Question Id : 21280728996 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 boat in still water is 10 km/h. If its speed downstream is 18 km/h, the distance travelled by the boat upstream in 5 hours is :

(1) 8 km

(2) 10 km

(3) 20 km

(4) 16 km

Options :

212807115981. 1

212807115982. 2

212807115983. 3

212807115984. 4

Question Number : 441 Question Id : 21280728996 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

शांत जल में नाव की चाल 10 किमी/घं. है। यदि अनुप्रवाह में चाल 18 किमी./घं. है तो नाव द्वारा ऊर्ध्वप्रवाह में 5 घंटे में तय दूरी है :

(1) 8 किमी

(2) 10 किमी

(3) 20 किमी

(4) 16 किमी

Options :

212807115981. 1

212807115982. 2

212807115983. 3

212807115984. 4

Question Number : 442 Question Id : 21280728997 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 matrix $A=\begin{bmatrix}1&0&0\\0&1&0\\0&1&1\end{bmatrix}, B=\begin{bmatrix}0&0&2\\0&2&0\\2&0&0\end{bmatrix}, C=\begin{bmatrix}1&0&1\\0&0&1\\1&1&0\end{bmatrix}, D=\begin{bmatrix}0&0\\0&0\\0&0\end{bmatrix}$ then which of the following is true ?

(1) A is an identity matrix

(2) B is a scalar matrix

(3) C is a symmetric matrix

(4) D is a skew-symmetric matrix

Options :

212807115985. 1

212807115986. 2

212807115987. 3

212807115988. 4

Question Number : 442 Question Id : 21280728997 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 आव्यूह $A=\begin{bmatrix}1&0&0\\0&1&0\\0&1&1\end{bmatrix}, B=\begin{bmatrix}0&0&2\\0&2&0\\2&0&0\end{bmatrix}, C=\begin{bmatrix}1&0&1\\0&0&1\\1&1&0\end{bmatrix}, D=\begin{bmatrix}0&0\\0&0\\0&0\end{bmatrix}$ तब निम्न में से कौन-सा सत्य है ?

(1) A एक तत्समक आव्यूह है

(2) B एक अदिश आव्यूह है

(3) C एक सममित आव्यूह है

(4) D एक विषम सममित आव्यूह है

Options :

212807115985. 1

212807115986. 2

212807115987. 3

212807115988. 4

Question Number : 443 Question Id : 21280728998 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 $A=\begin{bmatrix}1 & 5\\ 7 & 12\end{bmatrix}$ and $B=\begin{bmatrix}9 & 1\\ 7 & 8\end{bmatrix}$, then the matrix C for which $3A+5B+2C$ is a null matrix is :

(1) $\begin{bmatrix}-24 & 5\\ 20 & 6\end{bmatrix}$

(2) $\begin{bmatrix}3 & 10\\ -28 & 37\end{bmatrix}$

(3) $\begin{bmatrix}-24 & -10\\ -28 & -38\end{bmatrix}$

(4) $\begin{bmatrix}-29 & 15\\ -36 & -27\end{bmatrix}$

Options :

212807115989. 1

212807115990. 2

212807115991. 3

212807115992. 4

Question Number : 443 Question Id : 21280728998 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 $A=\begin{bmatrix}1 & 5\\ 7 & 12\end{bmatrix}$ और $B=\begin{bmatrix}9 & 1\\ 7 & 8\end{bmatrix}$, तब आव्यूह C, जिसके लिए $3A+5B+2C$ शून्य आव्यूह होगा, है :

(1) $\begin{bmatrix}-24 & 5\\ 20 & 6\end{bmatrix}$

(2) $\begin{bmatrix}3 & 10\\ -28 & 37\end{bmatrix}$

(3) $\begin{bmatrix}-24 & -10\\ -28 & -38\end{bmatrix}$

(4) $\begin{bmatrix}-29 & 15\\ -36 & -27\end{bmatrix}$

Options :

212807115989. 1

212807115990. 2

212807115991. 3

212807115992. 4

Question Number : 444 Question Id : 21280728999 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 shopkeepers A, B, C go to store to buy stationary. A purchases 10 dozen pens, 6 dozen pencils. B purchases 10 dozen notebooks, 5 dozen pens and 7 dozen pencils. C purchases 11 dozen notebooks and 13 dozen pens. A notebook costs 40 paise, a pen costs 1.25 rupees and pencil costs 35 paise. Identify correct statements :

(A) If P is quantity matrix (stationary purchased by A, B, C) then order of P is 2×3

(B) If Q is a price matrix then order of matrix Q is (3×1), to get individual bills

(C) P is $\begin{bmatrix} 0 & 10 & 6 \\ 10 & 5 & 7 \\ 11 & 13 & 0 \end{bmatrix}$

(D) Q is $\begin{bmatrix} 0.40 & 1.25 & 0.35 \end{bmatrix}$

(E) Matrix P is $\begin{pmatrix} 0 & 120 & 72 \\ 120 & 60 & 84 \\ 132 & 156 & 0 \end{pmatrix}$

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

(1) (A), (D) Only

(2) (B), (D) Only

(3) (C), (A) Only

(4) (B), (E) Only

Options :

212807115993. 1

212807115994. 2

212807115995. 3

212807115996. 4

Question Number : 444 Question Id : 21280728999 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 दुकानदार A, B, C स्टेशनरी खरीदने दुकान पर गये। A ने 10 दर्जन पेन, 6 दर्जन पेंसिल। B ने 10 दर्जन नोटबुक, 5 दर्जन पेन और 7 दर्जन पेंसिल व C ने 11 दर्जन नोटबुक और 13 दर्जन पेन खरीदे। एक नोटबुक का मूल्य 40 पैसा, एक पेन का मूल्य 1.25 रुपये और पेंसिल का मूल्य 35 पैसा है। सही कथन चुनें :

(A) यदि P मात्रा आव्यूह है (स्टेशनरी खरीदी गयी A, B, C द्वारा) तब P का कोटि 2×3

(B) यदि Q एक कीमत आव्यूह है तब Q आव्यूह का कोटि (3×1) है (व्यक्तिगत बिलों के प्राप्त करने के लिए)

(C) P, $\begin{bmatrix} 0 & 10 & 6 \\ 10 & 5 & 7 \\ 11 & 13 & 0 \end{bmatrix}$ है

(D) Q, $[0.40 \quad 1.25 \quad 0.35]$ है

(E) P आव्यूह $\begin{pmatrix} 0 & 120 & 72 \\ 120 & 60 & 84 \\ 132 & 156 & 0 \end{pmatrix}$ है

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

(1) केवल (A), (D)

(2) केवल (B), (D)

(3) केवल (C), (A)

(4) केवल (B), (E)

Options :

212807115993. 1

212807115994. 2

212807115995. 3

212807115996. 4

Question Number : 445 Question Id : 21280729000 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)	If $f(x)=\log(\log x)$, then $f'(x)=$	(I)	$\frac{1}{x\log 2}$
(B)	If $g(x)=e^{x^2}$, then $g'(x)=$	(II)	$\frac{1}{x\log x}$
(C)	If $h(x)=\frac{2}{\sqrt{x}}$, then $h'(x)=$	(III)	$e^{x^2}\cdot 2x$
(D)	If $m(x)=\log_2 x$, then $m'(x)=$	(IV)	$-x^{-3/2}$

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

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

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

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

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

Options :

212807115997. 1

212807115998. 2

212807115999. 3

212807116000. 4

Question Number : 445 Question Id : 21280729000 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 से **सूची-II** का मिलान कीजिए:

सूची-I		सूची-II	
(A)	यदि $f(x)=\log(\log x)$, तब $f'(x)=$	(I)	$\frac{1}{x\log 2}$
(B)	यदि $g(x)=e^{x^2}$, तब $g'(x)=$	(II)	$\frac{1}{x\log x}$
(C)	यदि $h(x)=\frac{2}{\sqrt{x}}$, तब $h'(x)=$	(III)	$e^{x^2}\cdot 2x$
(D)	यदि $m(x)=\log_2 x$, तब $m'(x)=$	(IV)	$-x^{-3/2}$

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

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

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

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

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

Options :

212807115997. 1

212807115998. 2

212807115999. 3

212807116000. 4

Question Number : 446 Question Id : 21280729001 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 demand for a certain product is represented by the function $p = 20 + 2x - \frac{x^2}{30}$ where x is the number of units demanded and p is the price per unit, then the value of marginal revenue when 10 units are sold is :

(1) 100

(2) 150

(3) 50

(4) 250

Options :

212807116001. 1

212807116002. 2

212807116003. 3

212807116004. 4

Question Number : 446 Question Id : 21280729001 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

किसी विशेष उत्पाद की मांग को $p = 20 + 2x - \frac{x^2}{30}$ फलन द्वारा निरूपित किया जाता है, जहाँ x मांग की गयी इकाई तथा p प्रत्येक इकाई की कीमत है तो सीमांत आय का मान ज्ञात करें जब 10 इकाई बेची गयी हों :

(1) 100

(2) 150

(3) 50

(4) 250

Options :

212807116001. 1

212807116002. 2

212807116003. 3

212807116004. 4

Question Number : 447 Question Id : 21280729002 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 $f(x)=\frac{x^{10}}{10}+\frac{x^9}{9}+\ldots+\frac{x^2}{2}+x+1$ then the value of $f'(0)$ is :

(1) 0

(2) 1

(3) 100

(4) 101

Options :

212807116005. 1

212807116006. 2

212807116007. 3

212807116008. 4

Question Number : 447 Question Id : 21280729002 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 $f(x)=\frac{x^{10}}{10}+\frac{x^9}{9}+\ldots+\frac{x^2}{2}+x+1$ तब $f'(0)$ का मान है :

(1) 0

(2) 1

(3) 100

(4) 101

Options :

212807116005. 1

212807116006. 2

212807116007. 3

212807116008. 4

Question Number : 448 Question Id : 21280729003 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

Maximum and minimum value, if any of $f(x)=K$; $x\in[0, 2]$, where K is a constant is :

(1) Maximum value = K and minimum value = K

(2) Maximum value = 2 and minimum value = 0

(3) Maximum and minimum value does not exist

(4) Maximum value = 1 and minimum value = 0

Options :

212807116009. 1

212807116010. 2

212807116011. 3

212807116012. 4

Question Number : 448 Question Id : 21280729003 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 $f(x) = K$; $x \in [0, 2]$, जहाँ K एक अचर है, का अधिकतम एवं न्यूनतम मान हैं :

(1) अधिकतम मान = K एवं न्यूनतम मान = K

(2) अधिकतम मान = 2 एवं न्यूनतम मान = 0

(3) अधिकतम एवं न्यूनतम मान अस्तित्व में नहीं है

(4) अधिकतम मान = 1 एवं न्यूनतम मान = 0

Options :

212807116009. 1

212807116010. 2

212807116011. 3

212807116012. 4

Question Number : 449 Question Id : 21280729004 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

Differential coefficient of $\log_{10} x$ with respect to $\log_x 10$ is :

(1) $-(x \log_{10} x)^2$

(2) $-\frac{(\log_{10} x)^2}{x^2}$

(3) $-\frac{1}{(\log_x 10)^2}$

(4) $-\frac{x^2}{(\log_{10} x)^2}$

Options :

212807116013. 1

212807116014. 2

212807116015. 3

212807116016. 4

Question Number : 449 Question Id : 21280729004 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

$\log_{10} x$ का $\log_x 10$ के सापेक्ष अवकल गुणांक है :

(1) $-(x \log_{10} x)^2$

(2) $-\frac{(\log_{10} x)^2}{x^2}$

(3) $-\frac{1}{(\log_x 10)^2}$

(4) $-\frac{x^2}{(\log_{10} x)^2}$

Options :

212807116013. 1

212807116014. 2

212807116015. 3

212807116016. 4

Question Number : 450 Question Id : 21280729005 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 mean and variance of a binomial distribution are $\frac{5}{6}$ and $\frac{25}{36}$ respectively. Then value of P(X=2) is :

(1) ${}^5C_3\left(\frac{1}{6}\right)^3\left(\frac{5}{6}\right)^2$

(2) ${}^5C_1\left(\frac{5}{6}\right)^3\left(\frac{1}{6}\right)^2$

(3) ${}^5C_2\left(\frac{5}{6}\right)^2\left(\frac{1}{6}\right)^3$

(4) ${}^5C_2\left(\frac{1}{6}\right)^2\left(\frac{5}{6}\right)^3$

Options :

212807116017. 1

212807116018. 2

212807116019. 3

212807116020. 4

Question Number : 450 Question Id : 21280729005 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 द्विपद बंटन का माध्य एवं प्रसरण क्रमशः $\frac{5}{6}$ एवं $\frac{25}{36}$ हो तो $P(X=2)$ का मान है :

(1) ${}^5C_3\left(\frac{1}{6}\right)^3\left(\frac{5}{6}\right)^2$

(2) ${}^5C_1\left(\frac{5}{6}\right)^3\left(\frac{1}{6}\right)^2$

(3) ${}^5C_2\left(\frac{5}{6}\right)^2\left(\frac{1}{6}\right)^3$

(4) ${}^5C_2\left(\frac{1}{6}\right)^2\left(\frac{5}{6}\right)^3$

Options :

212807116017. 1

212807116018. 2

212807116019. 3

212807116020. 4

Question Number : 451 Question Id : 21280729006 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**. The probability distribution of number of sixes (X) is when an unbiased die is thrown twice is :

X	0	1	2
P(X)	25/36	5/18	1/36

List - I		List - II	
(A)	The value of E(X)	(I)	$\frac{5}{72}$
(B)	Value of Var(X)	(II)	$\frac{1}{8}$
(C)	Value of Var $\left(\frac{X}{2}\right)$	(III)	$\frac{1}{3}$
(D)	Value of $E\left(\frac{3}{8}X\right)$	(IV)	$\frac{5}{18}$

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

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

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

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

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

Options :

212807116021. 1

212807116022. 2
212807116023. 3
212807116024. 4

Question Number : 451 Question Id : 21280729006 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 से **सूची-II** का मिलान कीजिए। जब एक पाशे को दो बार फेंका जाय तो संख्या छः के (X) बार आने की प्रायिकता बंटन नीचे दी गई है :

X	0	1	2
P(X)	25/36	5/18	1/36

सूची-I		सूची-II	
(A)	E(X) का मान	(I)	$\frac{5}{72}$
(B)	Var(X) का मान	(II)	$\frac{1}{8}$
(C)	Var $\left(\frac{X}{2}\right)$ का मान	(III)	$\frac{1}{3}$
(D)	$E\left(\frac{3}{8}X\right)$ का मान	(IV)	$\frac{5}{18}$

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

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

Options :

212807116021. 1
212807116022. 2
212807116023. 3
212807116024. 4

Question Number : 452 Question Id : 21280729007 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 coin is biased so that the head is 3 times likely to occur as tail. If the coin is tossed twice, then the probability distribution of number of tails is :

(1)

x	0	1	2
$P(x)$	9/16	6/16	1/16

(2)

x	0	1	2
$P(x)$	9/16	1/16	6/16

(3)

x	0	1	2
$P(x)$	1/16	6/16	9/16

(4)

x	0	1	2
$P(x)$	1/16	9/16	6/16

Options :

212807116025. 1

212807116026. 2

212807116027. 3

212807116028. 4

Question Number : 452 Question Id : 21280729007 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 दोषपूर्ण सिक्के में चित आने की संभावना पट से तिगुनी है। यदि सिक्के को दो बार उछाला गया तो पट x बार आने की प्रायिकता बंटन है :

(1)

x	0	1	2
$P(x)$	9/16	6/16	1/16

(2)

x	0	1	2
$P(x)$	9/16	1/16	6/16

(3)

x	0	1	2
$P(x)$	1/16	6/16	9/16

(4)

x	0	1	2
$P(x)$	1/16	9/16	6/16

Options :

212807116025. 1

212807116026. 2

212807116027. 3

212807116028. 4

Question Number : 453 Question Id : 21280729008 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 statements with reference to probability and non probability sampling and select the correct statements :

(A) In purposive sampling the members are selected which are most convenient for researches

(B) Cluster sampling divides the population into subgroups and each subgroup has similar characteristics

(C) In voluntary response sampling people are themselves ready to conduct the survey

(D) Selection of a cricket team for world cup is an example of judgement sampling

(E) Stratified sampling is a sampling in which every member of population is assigned a number and those numbers are chosen at regular intervals

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

(1) (B), (D) and (C) Only

(2) (A), (B) and (C) Only

(3) (A), (C) and (D) Only

(4) (D) and (E) Only

Options :

212807116029. 1

212807116030. 2

212807116031. 3

212807116032. 4

Question Number : 453 Question Id : 21280729008 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

प्रायिकता और अप्रायिकता प्रतिचयन के संबंध में निम्न कथनों पर विचार करें और सही कथनों का चयन करें :

(A) उद्देश्यपूर्ण प्रतिचयन में उन्हीं अवयवों को शोध के लिए चुना जाता है जो सबसे आसान हैं।

(B) गुच्छ प्रतिचयन समष्टि को उपसमूहों में बांटता है और प्रत्येक उपसमूह की समान विशेषताएं होती हैं।

(C) स्वैच्छ उत्तर प्रतिचयन में व्यक्ति खुद सर्वेक्षण के लिए तैयार होता है।

(D) विश्व कप के लिए क्रिकेट टीम का चयन न्यायिक प्रतिचयन का एक उदाहरण है।

(E) स्तंभित प्रतिचयन में समष्टि के प्रत्येक सदस्यों को एक संख्या प्रदान की जाती है तथा वे संख्याएं निश्चित अंतराल में चुनी जाती हैं।

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

(1) केवल (B), (D) और (C)

(2) केवल (A), (B) और (C)

(3) केवल (A), (C) और (D)

(4) केवल (D) और (E)

Options :

212807116029. 1

212807116030. 2

212807116031. 3

212807116032. 4

Question Number : 454 Question Id : 21280729009 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 statements given below and select the correct statements :

(A) A list of indexes is called a index series

(B) By time reversal test $p_{01} \times p_{10} = 0$

(C) If $\Sigma p_1 q_0 = 144$, $\Sigma p_1 q_1 = 192$, $\Sigma p_0 q_0 = 90$ and $\Sigma p_0 q_1 = 120$ then Fisher's ideal number is 120

(D) In Paashe's index number, current year quantities are taken as weights of commodities

(E) If $\Sigma p_0 = 120$ and $\Sigma p_1 = 150$ then $p_{01} = 125$

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

(1) (B), (C) and (E) Only

(2) (A) and (C) Only

(3) (A), (D) and (E) Only

(4) (B) and (D) Only

Options :

212807116033. 1

212807116034. 2

212807116035. 3

212807116036. 4

Question Number : 454 Question Id : 21280729009 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

नीचे दिए कथनों पर विचार करें तथा सही कथन चुनें :

(A) सूचकांकों की सूची सूचकांक श्रेणी कहलाता है

(B) काल व्युत्क्रम जाँच में $p_{01} \times p_{10} = 0$

(C) यदि $\Sigma p_1 q_0 = 144$, $\Sigma p_1 q_1 = 192$, $\Sigma p_0 q_0 = 90$ तथा $\Sigma p_0 q_1 = 120$ तो फिशर आदर्श संख्या 120 होगी

(D) पाशे सूचकांक में वर्तमान वर्ष की मात्रा को वस्तुओं के भार के रूप में लिया जाता है

(E) यदि $\Sigma p_0 = 120$ तथा $\Sigma p_1 = 150$ तो $p_{01} = 125$

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

(1) केवल (B), (C) और (E)

(2) केवल (A) और (C)

(3) केवल (A), (D) और (E)

(4) केवल (B) और (D)

Options :

212807116033. 1

212807116034. 2

212807116035. 3

212807116036. 4

Question Number : 455 Question Id : 21280729010 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 statement : During a certain period the cost of living index number goes from 110 to 200 and salary of a worker is also raised from ₹ 3,250 to ₹ 5,000.

Based on this information, check which of the following options are correct.

(A) Real wage is given by $\text{Real wage} = \frac{\text{Actual wage}}{\text{Cost of living index}} \times 100$

(B) $\text{Real wage of } ₹\ 3{,}250 = \frac{₹\ 3{,}250}{200} \times 100$

(C) $\text{Real wage of } ₹\ 3{,}250 = \frac{₹\ 3{,}250}{110} \times 100$

(D) Real wage of ₹ 5,000 = ₹ 2,600

(E) The worker actually loses ₹ 454.50 in real terms

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

(1) (A), (B), (C) Only

(2) (B), (D), (E) Only

(3) (A), (C), (E) Only

(4) (C), (D), (E) Only

Options :

212807116037. 1

212807116038. 2

212807116039. 3

212807116040. 4

Question Number : 455 Question Id : 21280729010 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

कथन पर विचार करें : एक निश्चित समय के दौरान जीवन मूल्य सूचकांक 110 से 200 हो जाता है तथा एक मजदूर का वेतन ₹ 3,250 से ₹ 5,000 बढ़ जाता है।

उपरोक्त सूचना के आधार पर दिये विकल्पों में सही उत्तर चुनें।

(A) $\text{यथार्थ मजदूरी} = \frac{\text{वास्तविक मजदूरी}}{\text{जीवन मूल्य सूचकांक}} \times 100$

(B) $₹\ 3,250 \text{ की यथार्थ मजदूरी} = \frac{₹\ 3,250}{200} \times 100$

(C) $₹\ 3,250 \text{ की यथार्थ मजदूरी} = \frac{₹\ 3,250}{110} \times 100$

(D) ₹ 5,000 की यथार्थ मजदूरी = ₹ 2,600

(E) मजदूर को वास्तविक रूप से ₹ 454.50 का नुकसान होता है

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

(1) केवल (A), (B), (C)

(2) केवल (B), (D), (E)

(3) केवल (A), (C), (E)

(4) केवल (C), (D), (E)

Options :

212807116037. 1
212807116038. 2
212807116039. 3
212807116040. 4

Question Number : 456 Question Id : 21280729011 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 straight line trend for the sales of a cosmetic item (in thousands) in a district with an origin year 2013 is $y = 5.9 + 1.3x$. The predicted sales of cosmetic items in 2023 is :

(1) 5.9 thousands

(2) 13.0 thousands

(3) 18.9 thousands

(4) 262.99 thousands

Options :

212807116041. 1
212807116042. 2
212807116043. 3
212807116044. 4

Question Number : 456 Question Id : 21280729011 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

किसी जिले में प्रसाधन वस्तुओं की बिक्री (हजार में) का सरल रेखा उपनति $y = 5.9 + 1.3x$ है, 2013 मूल वर्ष के संदर्भ में; 2023 के लिए प्रसाधन का अनुमानित बिक्री है _____।

(1) 5.9 हजार

(2) 13.0 हजार

(3) 18.9 हजार

(4) 262.99 हजार

Options :

212807116041. 1

212807116042. 2

212807116043. 3

212807116044. 4

Question Number : 457 Question Id : 21280729012 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

With reference to one sample t-Test, the test statistics is given by the expression $t = \frac{17 - 18}{\frac{4.5}{\sqrt{48}}}$ then which of the following gives the correct set of order of values $\bar{x}$, μ_0, S and n ?

(1) 48, 17, 18, 4.5

(2) 17, 4.5, 48, 18

(3) 17, 18, 4.5, 48

(4) 18, 17, 48, 4.5

Options :

212807116045. 1

212807116046. 2

212807116047. 3

212807116048. 4

Question Number : 457 Question Id : 21280729012 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

प्रतिदर्श t-जाँच के संबंध में, जाँच प्रतिदर्श को $t = \frac{17 - 18}{\frac{4.5}{\sqrt{48}}}$ द्वारा प्रदत्त है तो $\bar{x}$, μ_0, S एवं n के लिए सही क्रम कौन-सा है ?

(1) 48, 17, 18, 4.5

(2) 17, 4.5, 48, 18

(3) 17, 18, 4.5, 48

(4) 18, 17, 48, 4.5

Options :

212807116045. 1

212807116046. 2

212807116047. 3

212807116048. 4

Question Number : 458 Question Id : 21280729013 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 student wants to estimate the mean of population for some sample. The probability is 0.95 that sample mean will not differ by true mean by more than 50% of standard deviation. ($Z_{0.025} = 1.96$) The size of sample taken by student is :

(1) 17

(2) 15

(3) 14

(4) 13

Options :

212807116049. 1

212807116050. 2

212807116051. 3

212807116052. 4

Question Number : 458 Question Id : 21280729013 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 छात्र कुछ प्रतिदर्श से समष्टि माध्य का आकलन करना चाहता है। प्रतिदर्श माध्य का वास्तविक माध्य के मानक विचलन से 50% अधिकतम अन्तर होने की प्रायिकता 0.95 है। ($Z_{0.025} = 1.96$) छात्र द्वारा लिये गये प्रतिदर्श का आकार है :

(1) 17

(2) 15

(3) 14

(4) 13

Options :

212807116049. 1

212807116050. 2

212807116051. 3

212807116052. 4

Question Number : 459 Question Id : 21280729014 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 measurable characteristic of a population is called :	(I)	Degree of freedom
(B)	A collection of objects, events etc. is :	(II)	Population
(C)	A measurable characteristic of sample is called :	(III)	Parameter
(D)	The number of independent values which have freedom to vary in computing as statistic is called :	(IV)	Statistic

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

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

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

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

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

Options :

212807116053. 1

212807116054. 2

212807116055. 3

212807116056. 4

Question Number : 459 Question Id : 21280729014 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 से **सूची-II** का मिलान कीजिए :

सूची-I		सूची-II	
(A)	समष्टि का मापीय गुण कहलाता है :	(I)	स्वातंत्र्य कोटि
(B)	वस्तुओं, घटनाओं का संग्रह है :	(II)	समष्टि
(C)	प्रतिदर्श का मापीय गुण कहलाता है :	(III)	प्राचल
(D)	स्वतंत्र मानों की संख्या जो प्रतिदर्शज में स्वतंत्र रूप से विचरण करती है, कहलाती हैं	(IV)	प्रतिदर्शज

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

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

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

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

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

Options :

212807116053. 1

212807116054. 2

212807116055. 3

212807116056. 4

Question Number : 460 Question Id : 21280729015 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

Raman borrows a sum of ₹ 4,00,000 with total interest paid ₹ 2,00,000 and he is paying an EMI of ₹ 12,000 under flat rate system, then his loan tenure is :

(1) 48 months

(2) 45 months

(3) 50 months

(4) 60 months

Options :

212807116057. 1

212807116058. 2

212807116059. 3

212807116060. 4

Question Number : 460 Question Id : 21280729015 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

रमन ₹ 4,00,000 उधार लेता है तथा कुल ₹ 2,00,000 का ब्याज भुगतान करता है। यदि वह ₹ 12,000 का मासिक किस्त देता है तो ऋण की अवधि, सपाट दर से, है _____ ।

(1) 48 माह

(2) 45 माह

(3) 50 माह

(4) 60 माह

Options :

212807116057. 1

212807116058. 2

212807116059. 3

212807116060. 4

Question Number : 461 Question Id : 21280729016 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

What sum of money should be invested now so as to get ₹ 7,500 at the beginning of every month forever, if the money is worth 7.5% per annum compounded monthly ?

(1) ₹ 7,50,000

(2) ₹ 12,00,000

(3) ₹ 10,07,500

(4) ₹ 12,07,500

Options :

212807116061. 1

212807116062. 2

212807116063. 3

212807116064. 4

Question Number : 461 Question Id : 21280729016 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

7.5% प्रतिवर्ष की दर से मासिक चक्रवृद्धि ब्याज दर से कितने रुपये का निवेश किया जाय कि प्रत्येक माह के आरंभ में चिरकाल तक ₹ 7,500 का धन प्राप्त हो ?

(1) ₹ 7,50,000

(2) ₹ 12,00,000

(3) ₹ 10,07,500

(4) ₹ 12,07,500

Options :

212807116061. 1

212807116062. 2

212807116063. 3

212807116064. 4

Question Number : 462 Question Id : 21280729017 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)	Price at which bond is sold to investors	(I)	Redemption
(B)	Amount which bond issuer pays to buyer at maturity	(II)	P.V. > face value
(C)	If discount rate < coupon rate then :	(III)	Face value
(D)	If discount rate > coupon rate, then :	(IV)	P.V. < face value

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

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

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

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

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

Options :

212807116065. 1

212807116066. 2

212807116067. 3

212807116068. 4

Question Number : 462 Question Id : 21280729017 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 से **सूची-II** का मिलान कीजिए :

सूची-I		**सूची-II**	
(A)	वह कीमत जिस पर निवेशक को बांड बेचा जाता है	(I)	मोचन
(B)	वह धन जिस पर बांड जारीकर्ता खरीददार को परिपक्वता पर देता है	(II)	P.V. > अंकित मूल्य
(C)	यदि छूट दर < कूपन दर से तो :	(III)	अंकित मूल्य
(D)	यदि छूट दर > कूपन दर से तो :	(IV)	P.V. < अंकित मूल्य

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

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

Options :
212807116065. 1
212807116066. 2
212807116067. 3
212807116068. 4

Question Number : 463 Question Id : 21280729018 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

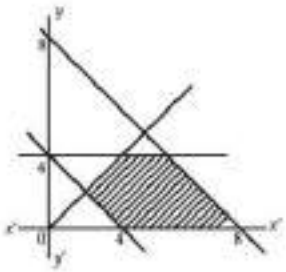
Question Key Details :

Key	Value
Comprehension	MCQ3

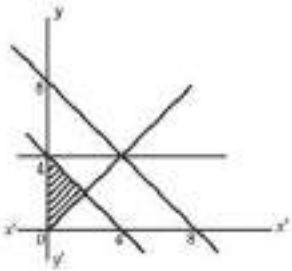
Which of the following graph represents the given constraints ?

$x+y\leq 8,\ x+y\geq 4,\ x-y\leq 0,\ y\leq 4,\ x\geq 0,\ y\geq 0$

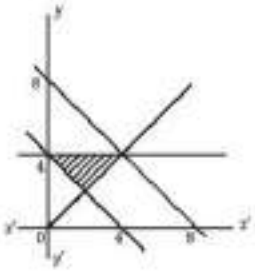
(1)



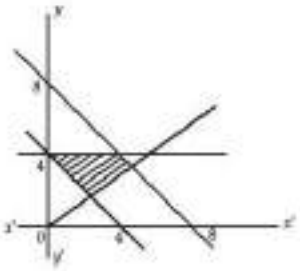
(2)



(3)



(4)



Options :

212807116069. 1

212807116070. 2

212807116071. 3

212807116072. 4

Question Number : 463 Question Id : 21280729018 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

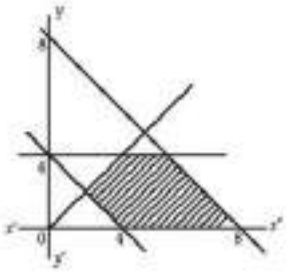
Question Key Details :

Key	Value
Comprehension	MCQ3

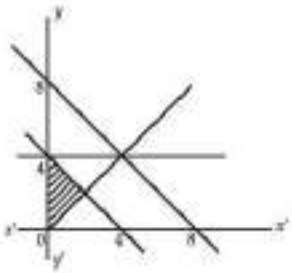
निम्न में कौन सा आरेख दिये व्यवरोधों को दर्शाता है?

$x+y\leq 8,\ x+y\geq 4,\ x-y\leq 0,\ y\leq 4,\ x\geq 0,\ y\geq 0$

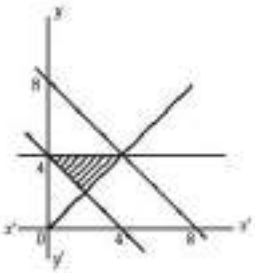
(1)



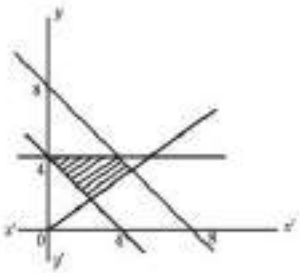
(2)



(3)



(4)



Options :

212807116069. 1

212807116070. 2

212807116071. 3

212807116072. 4

Question Number : 464 Question Id : 21280729019 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 statements regarding LPP :

(A) If R is unbounded, then maximum or minimum of the objective function Z must exist

(B) An LPP can not have more than one optimal solution for the decision variables

(C) The conditions $x \geq 0, y \geq 0$ are called non-negative restrictions on the decision variables

(D) Two different corner points of the feasible region may give same value when put in the objective function

(E) If the feasible region R is bounded then the objective function Z must have some optimal solution

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

(1) (A) and (B) Only

(2) (A), (C) and (D) Only

(3) (C), (D) and (E) Only

(4) (D) and (E) Only

Options :

212807116073. 1

212807116074. 2

212807116075. 3

212807116076. 4

Question Number : 464 Question Id : 21280729019 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

LPP से संबंधित निम्न कथनों पर विचार करें :

(A) यदि R अपरिबद्ध है तो उद्देश्य फलन Z का अधिकतम व न्यूनतम मान होगा।

(B) किसी LPP के निर्णय चरों के लिए एक से अधिक इष्टतम हल नहीं हो सकता है।

(C) किसी निर्णय चरों के लिए $x \geq 0, y \geq 0$ ऋणेत्तर व्यवरोध कहलाता है।

(D) किसी सुसंगत क्षेत्र के दो अलग-अलग कोनीय बिंदु पर उद्देश्य फलन का समान मान आता है।

(E) यदि R सुसंगत क्षेत्र आबद्ध हो तो उद्देश्य फलन Z का इष्टतम हल होगा।

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

(1) केवल (A) और (B)

(2) केवल (A), (C) और (D)

(3) केवल (C), (D) और (E)

(4) केवल (D) और (E)

Options :

212807116073. 1

212807116074. 2

212807116075. 3

212807116076. 4

Question Number : 465 Question Id : 21280729020 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 corner points of the feasible region for an LPP are (6, 0), (5, 5), (3, 6) and (0, 4) then minimum value of the objective function $z = 2x + 3y$ occurs at :

(1) (6, 0) Only

(2) (0, 4) Only

(3) the mid point of the line segment joining the points (6, 0) and (4, 0) only

(4) every point of the line segment joining the points (6, 0) and (4, 0)

Options :

212807116077. 1

212807116078. 2

212807116079. 3

212807116080. 4

Question Number : 465 Question Id : 21280729020 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

किसी LPP के सुसंगत क्षेत्र के कोनीय बिन्दु (6, 0), (5, 5), (3, 6) एवं (0, 4) हैं तो उद्देश्य फलन $z = 2x + 3y$ का न्यूनतम मान होगा _____ ।

(1) केवल (6, 0)

(2) केवल (0, 4)

(3) (6, 0) तथा (4, 0) को जोड़ने वाली रेखा खंड के मध्य बिंदु पर

(4) (6, 0) तथा (4, 0) को जोड़ने वाली रेखाखंड के सभी बिंदुओं पर

Options :

212807116077. 1

212807116078. 2

212807116079. 3

212807116080. 4

Sub-Section Number :	2
Sub-Section Id :	2128072110
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 466 Question Id : 21280729021 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

It is 9 o'clock in the morning. The travel agent informed Sheetal that she will reach her destination after 400 hours of travel. At what time of the day she reaches her destination ?

(1) 5 PM

(2) 1 PM

(3) 1 AM

(4) 5 AM

Options :

212807116081. 1

212807116082. 2
212807116083. 3
212807116084. 4

Question Number : 466 Question Id : 21280729021 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

अभी सुबह के 9 बजे हैं। ट्रेवल एजेंट ने शीतल को बताया कि 400 घंटों की यात्रा के 10 मिनट पश्चात वह अपने नियत स्थान पर पहुँच जाएगी। वह किस समय अपने स्थान पर पहुँचेगी ?

(1) 5 PM
(2) 1 PM
(3) 1 AM
(4) 5 AM

Options :

212807116081. 1
212807116082. 2
212807116083. 3
212807116084. 4

Question Number : 467 Question Id : 21280729022 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 slope of the function $f(x) = -\frac{x^3}{3} + \frac{5x^2}{2} - 6x + 12$ is maximum at $x =$ _____.

(1) 6
(2) -1
(3) $\frac{5}{2}$
(4) -2

Options :

212807116085. 1
212807116086. 2
212807116087. 3
212807116088. 4

Question Number : 467 Question Id : 21280729022 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

फलन $f(x) = -\frac{x^3}{3} + \frac{5x^2}{2} - 6x + 12$ की प्रवणता का अधिकतम मान है, x _____ पर:

(1) 6

(2) -1

(3) $\frac{5}{2}$

(4) -2

Options :

212807116085. 1

212807116086. 2

212807116087. 3

212807116088. 4

Question Number : 468 Question Id : 21280729023 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

Which of the following is not an adequacy test of index Numbers ?

(1) Unit test

(2) Time Reversal test

(3) Factor Reversal test

(4) Series test

Options :

212807116089. 1

212807116090. 2

212807116091. 3

212807116092. 4

Question Number : 468 Question Id : 21280729023 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

इनमें से कौन सूचकांक के उपयुक्त जाँच नहीं है ?

(1) इकाई जाँच

(2) काल व्युत्क्रमण जाँच

(3) गुणनखंड व्युत्क्रमण जाँच

(4) श्रेणी जाँच

Options :

212807116089. 1

212807116090. 2

212807116091. 3

212807116092. 4

Question Number : 469 Question Id : 21280729024 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 three year moving average of the production given by the table.

Year	2010	2011	2012	2013	2014	2015
Production	98	95	103	109	88	110

is least around the year :

(1) 2012
(2) 2014
(3) 2011
(4) 2013

Options :

212807116093. 1
212807116094. 2
212807116095. 3
212807116096. 4

Question Number : 469 Question Id : 21280729024 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

किसी उत्पाद के तीन वर्षीय चल औसत को निम्न तालिका में दिखाया गया है।

वर्ष	2010	2011	2012	2013	2014	2015
उत्पादन	98	95	103	109	88	110

यह किस आधार वर्ष में सबसे निम्न है :

(1) 2012
(2) 2014
(3) 2011
(4) 2013

Options :

212807116093. 1
212807116094. 2
212807116095. 3
212807116096. 4

Question Number : 470 Question Id : 21280729025 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 A is the amount of obligation, r is the rate of interest per payment period and $i = \frac{r}{100}$, then the amount of each payment can be calculated using which of the following formulae, where n is the number of payments ?

(1) $R = \left[\frac{(1+i)^n - 1}{i}\right] \times A$

(2) $R = \left[\frac{A \times i}{(1+i)^n + 1}\right]$

(3) $R = \left[\frac{A \times i}{(1+i)^n - 1}\right]$

(4) $R = \left[\frac{(1+i)^n + 1}{i}\right] \times A$

Options :

212807116097. 1

212807116098. 2

212807116099. 3

212807116100. 4

Question Number : 470 Question Id : 21280729025 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

यदि A अनिवार्य देय धन, r प्रति अवधि ब्याज पर $i = \frac{r}{100}$ तो प्रत्येक भुगतान की राशि को इनमें से किस सूत्र द्वारा निकाला जा सकता है, जहाँ n भुगतान की संख्या है ?

(1) $R = \left[\frac{(1+i)^n - 1}{i}\right] \times A$

(2) $R = \left[\frac{A \times i}{(1+i)^n + 1}\right]$

(3) $R = \left[\frac{A \times i}{(1+i)^n - 1}\right]$

(4) $R = \left[\frac{(1+i)^n + 1}{i}\right] \times A$

Options :

212807116097. 1

212807116098. 2

212807116099. 3

212807116100. 4