

Q.1 In the context of differential equation

Match List I with List II

LIST I		LIST II	
A.	$\frac{dy}{dx} = \frac{1+y^2}{1+x^2}$	I.	Not a differential equation
B.	$x^2 \frac{dy}{dx} = x^2 - 2y^2 + xy$	II.	Linear first order
C.	$\sin x + y = \cos(x+y)$	III.	Variable separable
D.	$(x+y) \frac{dy}{dx} = 1$	IV.	Homogenous

Choose the correct answer from the options given below:

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

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866650
Option 1 ID : 63238626597
Option 2 ID : 63238626598
Option 3 ID : 63238626599
Option 4 ID : 63238626600
Status : Answered
Chosen Option : 3

Q.2 The critical points of $f(x) = x^3 + x^2 + x + 1$ are

1. 2, 1
2. -2, -1
3. 2, -1
4. do not exist

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866647

Option 1 ID : 63238626585

Option 2 ID : 63238626586

Option 3 ID : 63238626587

Option 4 ID : 63238626588

Status : Answered

Chosen Option : 1

Q.3 If $y = x^x$, $\frac{dy}{dx}$ will be:

1. x^x
2. $x^x(1 + \log x)$
3. x^{x-1}
4. x^{x+1}

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866645

Option 1 ID : 63238626577

Option 2 ID : 63238626578

Option 3 ID : 63238626579

Option 4 ID : 63238626580

Status : Answered

Chosen Option : 2

Q.4

If a fair coin is tossed 10 times, then the probability of obtaining at least one head is :

1. $\frac{1}{1024}$
2. $\frac{17}{1024}$
3. $\frac{1023}{1024}$
4. $\frac{23}{1024}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866653

Option 1 ID : 63238626609

Option 2 ID : 63238626610

Option 3 ID : 63238626611

Option 4 ID : 63238626612

Status : Answered

Chosen Option : 1

Q.5

The value of $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 dx$ is:

1. $\frac{x^2}{2} + \log|x| + C$, (where C is constant of integration)
2. $\frac{x^2}{2} + \log|x| + 2x + C$, (where C is constant of integration)
3. $\frac{3}{2} \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right) + C$, (where C is constant of integration)
4. $\frac{2}{3} x^{\frac{3}{2}} + 2\sqrt{x} + C$, (where C is constant of integration)

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866648

Option 1 ID : 63238626589

Option 2 ID : 63238626590

Option 3 ID : 63238626591

Option 4 ID : 63238626592

Status : Answered

Chosen Option : 3

Q.6 Which of the following differential equation represents the family of circles touching the x-axis at the origin ?

1. $(x^2 - y^2)dy - 2xy \, dx = 0$

2. $(x^2 + y^2)dy + 2xy \, dx = 0$

3. $(x^2 - y^2)dx + 2xy \, dy = 0$

4. $(x^2 + y^2)dy - 2xy \, dx = 0$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **6323866651**

Option 1 ID : **63238626601**

Option 2 ID : **63238626602**

Option 3 ID : **63238626603**

Option 4 ID : **63238626604**

Status : **Answered**

Chosen Option : **4**

Q.7 Let $A = \begin{bmatrix} 3 & -1 \\ 2 & 4 \end{bmatrix}$, then adjoint (A) is:

1. $\begin{bmatrix} 3 & 2 \\ -1 & 4 \end{bmatrix}$

2. $\begin{bmatrix} 4 & -1 \\ 2 & 3 \end{bmatrix}$

3. $\begin{bmatrix} -4 & 1 \\ -2 & -3 \end{bmatrix}$

4. $\begin{bmatrix} 4 & 1 \\ -2 & 3 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **6323866642**

Option 1 ID : **63238626565**

Option 2 ID : **63238626566**

Option 3 ID : **63238626567**

Option 4 ID : **63238626568**

Status : **Answered**

Chosen Option : **4**

Q.8 The order of a null matrix is :

- 1. 0
- 2. 1
- 3. 2
- 4. any order

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MCQ

Question ID : 6323866641

Option 1 ID : 63238626561

Option 2 ID : 63238626562

Option 3 ID : 63238626563

Option 4 ID : 63238626564

Status : Answered

Chosen Option : 1

Q.9 If $5x + y \leq 100$, $x + y \leq 60$, $x \geq 0$, $y \geq 0$. Then one of the corner points of the feasible region is :

- 1. (60, 0)
- 2. (0, 100)
- 3. (10, 50)
- 4. (0, 20)

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MCQ

Question ID : 6323866655

Option 1 ID : 63238626617

Option 2 ID : 63238626618

Option 3 ID : 63238626619

Option 4 ID : 63238626620

Status : Answered

Chosen Option : 4

Q.10 Let A be a square matrix of order 3 then $|3A|$ is equal to

1. $3|A|$

2. $3^2|A|$

3. $|A|^3$

4. $3^3|A|$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866643

Option 1 ID : 63238626569

Option 2 ID : 63238626570

Option 3 ID : 63238626571

Option 4 ID : 63238626572

Status : Answered

Chosen Option : 1

Q.11 The inverse of the matrix $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$ is:

1. $\begin{bmatrix} -2 & 3 \\ 1 & -2 \end{bmatrix}$

2. $\begin{bmatrix} 2 & -3 \\ -1 & 2 \end{bmatrix}$

3. $\begin{bmatrix} -2 & -3 \\ -1 & 2 \end{bmatrix}$

4. $\begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866644

Option 1 ID : 63238626573

Option 2 ID : 63238626574

Option 3 ID : 63238626575

Option 4 ID : 63238626576

Status : Answered

Chosen Option : 2

Q.12

The integral $\int e^x \left(\frac{x-1}{2x^2} \right) dx$ is equal to:

1. $\frac{e^x}{x} + C$, where C is constant of integration
2. $\frac{e^x}{2x} + C$, where C is constant of integration
3. $e^x x + C$, where C is constant of integration
4. $x^2 e^x + C$, where C is constant of integration

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866649

Option 1 ID : 63238626593

Option 2 ID : 63238626594

Option 3 ID : 63238626595

Option 4 ID : 63238626596

Status : Answered

Chosen Option : 3

Q.13 The volume of a cube is increasing at the rate of $27 \text{ cm}^3/\text{s}$. How fast is the surface area increasing when the length of the cube is 12 cm.

1. $9 \text{ cm}^2/\text{s}$

2. $\frac{9}{4} \text{ cm}^2/\text{s}$

3. $\frac{4}{9} \text{ cm}^2/\text{s}$

4. $\frac{9}{2} \text{ cm}^2/\text{s}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866646

Option 1 ID : 63238626581

Option 2 ID : 63238626582

Option 3 ID : 63238626583

Option 4 ID : 63238626584

Status : Answered

Chosen Option : 1

Q.14 In a LPP, let R be the feasible region.

- A. If R is unbounded then a max./min. value of objective function may not exist.
- B. If R is bounded then a max. and min. value of objective function will always exist.
- C. If a solution exists, it must occur at a corner point.
- D. If R is bounded then max. will exist but min. may or may not exist for an objective function.

Choose the correct answer from the options given below:

- 1. A, B, C only
- 2. B only
- 3. A, C only
- 4. D, C only

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MCQ**
Question ID : **6323866654**
Option 1 ID : **63238626613**
Option 2 ID : **63238626614**
Option 3 ID : **63238626615**
Option 4 ID : **63238626616**
Status : **Answered**
Chosen Option : **4**

Q.15 Two cards are drawn simultaneously from a well shuffled pack of 52 cards. Then variance of the number of kings is

- 1. $\frac{680}{(221)^2}$
- 2. $\frac{6080}{(221)^2}$
- 3. $\frac{680}{221}$
- 4. $\frac{6800}{(221)^2}$

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MCQ**
Question ID : **6323866652**
Option 1 ID : **63238626605**
Option 2 ID : **63238626606**
Option 3 ID : **63238626607**
Option 4 ID : **63238626608**
Status : **Answered**
Chosen Option : **1**

Q.1 If a fair coin is tossed 10 times the probability of atleast 6 heads is:

1. $\frac{105}{512}$

2. $\frac{53}{128}$

3. $\frac{53}{64}$

4. $\frac{193}{512}$

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866685

Option 1 ID : 63238626737

Option 2 ID : 63238626738

Option 3 ID : 63238626739

Option 4 ID : 63238626740

Status : Answered

Chosen Option : 2

Q.2 The minimum value of $f(x) = |2x - 1|$ is

1. $-\infty$

2. 0

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

4. 1

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866671

Option 1 ID : 63238626681

Option 2 ID : 63238626682

Option 3 ID : 63238626683

Option 4 ID : 63238626684

Status : Answered

Chosen Option : 3

Q.3 The maximum value of $\sin x + \cos x$, $x \in \mathbb{R}$ is:

- 1. 2
- 2. $\sqrt{2}$
- 3. $\frac{1}{\sqrt{2}}$
- 4. Not known

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866670
Option 1 ID : 63238626677
Option 2 ID : 63238626678
Option 3 ID : 63238626679
Option 4 ID : 63238626680
Status : Answered
Chosen Option : 1

Q.4 A doctor is to visit a patient. It is known that the probabilities that he will come by train, bus, scooter or by other means of transport are respectively $\frac{3}{10}$, $\frac{1}{5}$, $\frac{1}{10}$ and $\frac{2}{5}$. The probabilities that he will be late are $\frac{1}{4}$, $\frac{1}{3}$ and $\frac{1}{12}$, if he comes by train, bus and scooter respectively, but if he comes by other means of transport, then he will not be late. When he arrives, he arrives late.

The probability that he comes by bus is:

- 1. $\frac{4}{9}$
- 2. $\frac{1}{18}$
- 3. $\frac{1}{3}$
- 4. $\frac{1}{2}$

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866684
Option 1 ID : 63238626733
Option 2 ID : 63238626734
Option 3 ID : 63238626735
Option 4 ID : 63238626736
Status : Answered
Chosen Option : 4

Q.5 If $y = x^{(x \sin x)}$ then $\frac{dy}{dx} = ?$

1. $x^{x \cos x}$

2. $x^{(x \sin x)} [\sin x + \sin \log x]$

3. $x^{(x \sin x)} [\sin (1 + \log x) + x \log x \cos x]$

4. $x^{(x \sin x)} [\sin \log x + x \log x \cos x]$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866668

Option 1 ID : 63238626669

Option 2 ID : 63238626670

Option 3 ID : 63238626671

Option 4 ID : 63238626672

Status : Answered

Chosen Option : 3

Q.6

If x, y & z are non zero real numbers, the inverse of matrix $A = \begin{bmatrix} x & 0 & 0 \\ 0 & y & 0 \\ 0 & 0 & z \end{bmatrix}$ is :

1. $\begin{bmatrix} x^{-1} & 0 & 0 \\ 0 & y^{-1} & 0 \\ 0 & 0 & z^{-1} \end{bmatrix}$

2. $xyz \begin{bmatrix} x^{-1} & 0 & 0 \\ 0 & y^{-1} & 0 \\ 0 & 0 & z^{-1} \end{bmatrix}$

3. $\frac{1}{xyz} \begin{bmatrix} x^{-1} & 0 & 0 \\ 0 & y^{-1} & 0 \\ 0 & 0 & z^{-1} \end{bmatrix}$

4. $\frac{1}{xyz} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866662

Option 1 ID : 63238626645

Option 2 ID : 63238626646

Option 3 ID : 63238626647

Option 4 ID : 63238626648

Status : Answered

Chosen Option : 4

Q.7 The principal value of $\cot^{-1}\left(-\frac{1}{\sqrt{3}}\right)$

1. $\frac{\pi}{3}$
2. $-\frac{\pi}{6}$
3. $\frac{1}{\sqrt{3}}$
4. $\frac{2\pi}{3}$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866658

Option 1 ID : 63238626629

Option 2 ID : 63238626630

Option 3 ID : 63238626631

Option 4 ID : 63238626632

Status : Answered

Chosen Option : 1

Q.8 The simplest form of $\tan^{-1}\left\{\frac{x}{\sqrt{a^2-x^2}}\right\}$ is , where $-a < x < a$.

1. $\tan^{-1}\frac{x}{a}$
2. $\tan^{-1}(ax)$
3. $a \tan^{-1}\frac{x}{a}$
4. $\sin^{-1}\frac{x}{a}$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866673

Option 1 ID : 63238626689

Option 2 ID : 63238626690

Option 3 ID : 63238626691

Option 4 ID : 63238626692

Status : Answered

Chosen Option : 3

Q.9 The relation $R = \{(a, b) : a \leq b^2\}$ on the set of real numbers is:

1. Reflexive and symmetric
2. Neither reflexive nor symmetric
3. Transitive
4. Reflexive but not symmetric

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866656

Option 1 ID : 63238626621

Option 2 ID : 63238626622

Option 3 ID : 63238626623

Option 4 ID : 63238626624

Status : Answered

Chosen Option : 2

Q.10

The value of $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$ is

1. 0
2. $(a + b + c)$
3. $(a - b)(b - c)(c - a)$
4. $a^2 + b^2 + c^2$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866664

Option 1 ID : 63238626653

Option 2 ID : 63238626654

Option 3 ID : 63238626655

Option 4 ID : 63238626656

Status : Answered

Chosen Option : 1

Q.11

If $\vec{a} = 5\hat{i} - \hat{j} - 3\hat{k}$ & $\vec{b} = \hat{i} - 3\hat{j} + 5\hat{k}$ the angle between $\vec{a} + \vec{b}$ and $\vec{a} - \vec{b}$ is :

1. 60°
2. 90°
3. 120°
4. 30°

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866678

Option 1 ID : 63238626709

Option 2 ID : 63238626710

Option 3 ID : 63238626711

Option 4 ID : 63238626712

Status : Answered

Chosen Option : 1

Q.12

If $y = \sin^{-1}\left(\frac{1-x^2}{1+x^2}\right)$ then $\frac{dy}{dx} =$

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

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866667

Option 1 ID : 63238626665

Option 2 ID : 63238626666

Option 3 ID : 63238626667

Option 4 ID : 63238626668

Status : Answered

Chosen Option : 3

Q.13 Match List I with List II

LIST I		LIST II	
A.	$lx + my + nz = d$ is	I.	Equation of plane passing through a given point and normal to given vector
B.	$\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = 1$ is	II.	Equation of plane in normal form
C.	$(\vec{r} - \vec{a}) \cdot \vec{n} = 0$	III.	Plane passing through the intersection of two planes
D.	$(a_1x + b_1y + c_1z + d_1) + \lambda(a_2x + b_2y + c_2z + d_2) = 0$	IV.	Intercept from of plane

Choose the correct answer from the options given below:

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

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866680
Option 1 ID : 63238626717
Option 2 ID : 63238626718
Option 3 ID : 63238626719
Option 4 ID : 63238626720
Status : Answered
Chosen Option : 1

Q.14 The area of the region $\{(x, y) : y \geq x^2 \text{ and } y \leq |x|\}$ is

1. 2

2. 1

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

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

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866674

Option 1 ID : 63238626693

Option 2 ID : 63238626694

Option 3 ID : 63238626695

Option 4 ID : 63238626696

Status : Answered

Chosen Option : 4

Q.15 The area enclosed between the curves $y = x^2$ and $x = y^2$ is

1. 1

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

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

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

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866675

Option 1 ID : 63238626697

Option 2 ID : 63238626698

Option 3 ID : 63238626699

Option 4 ID : 63238626700

Status : Answered

Chosen Option : 2

Q.16 If $\begin{vmatrix} 2x & 2 \\ 4 & x \end{vmatrix} = 10$, then x is:

1. ± 2

2. ± 3

3. ± 4

4. 0

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866663

Option 1 ID : 63238626649

Option 2 ID : 63238626650

Option 3 ID : 63238626651

Option 4 ID : 63238626652

Status : Answered

Chosen Option : 2

Q.17 Points of discontinuity of the greatest integer function $f(x) = [x]$, where $[x]$ denotes integer less than or equal to x , are

1. all natural numbers

2. all rational numbers

3. all integers

4. all real numbers

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866666

Option 1 ID : 63238626661

Option 2 ID : 63238626662

Option 3 ID : 63238626663

Option 4 ID : 63238626664

Status : Answered

Chosen Option : 2

Q.18 The slope of the normal to the curve $y = 2x^2 - 4$ at P (1, -2) is :

- 1. 4
- 2. -4
- 3. $-\frac{1}{4}$
- 4. 0

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MCQ

Question ID : 6323866669

Option 1 ID : 63238626673

Option 2 ID : 63238626674

Option 3 ID : 63238626675

Option 4 ID : 63238626676

Status : Answered

Chosen Option : 1

Q.19 Which one of the following options is incorrect?

For a square matrix A in the matrix equation $AX = B$.

- 1. If $|A| \neq 0$, then there exists a unique solution
- 2. If $|A| = 0$ and $(\text{adj } A)B \neq 0$ then there is no solution
- 3. If $|A| \neq 0$ and $(\text{adj } A)B \neq 0$ then there is no solution
- 4. If $|A| = 0$ and $(\text{adj } A)B = 0$ then system has infinitely many solutions

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : MCQ

Question ID : 6323866661

Option 1 ID : 63238626641

Option 2 ID : 63238626642

Option 3 ID : 63238626643

Option 4 ID : 63238626644

Status : Answered

Chosen Option : 3

Q.20 Let A be the square matrix of order 3, then $|kA|$, where k is a scalar, is equal to:

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

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866665

Option 1 ID : 63238626657

Option 2 ID : 63238626658

Option 3 ID : 63238626659

Option 4 ID : 63238626660

Status : Answered

Chosen Option : 4

Q.21 The general solution of $\frac{dy}{dx} = 1 + x^2 + y^2 + x^2y^2$ is:

(given that C is the constant of integration)

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

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866676

Option 1 ID : 63238626701

Option 2 ID : 63238626702

Option 3 ID : 63238626703

Option 4 ID : 63238626704

Status : Answered

Chosen Option : 4

Q.22 The number of all onto functions from the set $\{1, 2, \dots, n\}$ to itself is

1. 2^n
2. n^2
3. $n!$
4. $(2n)!$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866657

Option 1 ID : 63238626625

Option 2 ID : 63238626626

Option 3 ID : 63238626627

Option 4 ID : 63238626628

Status : Answered

Chosen Option : 2

Q.23

The matrix $\begin{bmatrix} 2 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ is a

1. zero matrix
2. Identity matrix
3. Scalar matrix
4. Diagonal matrix

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866660

Option 1 ID : 63238626637

Option 2 ID : 63238626638

Option 3 ID : 63238626639

Option 4 ID : 63238626640

Status : Answered

Chosen Option : 4

Q.24 The value of λ , so that the lines $\frac{1-x}{3} = \frac{7y-14}{2\lambda} = \frac{z-3}{2}$ and $\frac{7-7x}{3\lambda} = \frac{y-5}{1} = \frac{6-z}{5}$ are perpendicular is:

1. $-\frac{70}{11}$
2. $\frac{70}{11}$
3. $\frac{11}{70}$
4. $-\frac{11}{70}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **6323866681**

Option 1 ID : **63238626721**

Option 2 ID : **63238626722**

Option 3 ID : **63238626723**

Option 4 ID : **63238626724**

Status : **Answered**

Chosen Option : **3**

Q.25

The unit vector in the direction of $\vec{a} + \vec{b}$ if $\vec{a} = 2\hat{i} - \hat{j} + 2\hat{k}$ & $\vec{b} = -\hat{i} + \hat{j} - \hat{k}$ is :

1. $\hat{i} + 0\hat{j} + \hat{k}$
2. $\hat{i} - \hat{j} + \hat{k}$
3. $\hat{i} + \hat{j} + \hat{k}$
4. $\frac{1}{\sqrt{2}}\hat{i} + \frac{1}{\sqrt{2}}\hat{k}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **6323866679**

Option 1 ID : **63238626713**

Option 2 ID : **63238626714**

Option 3 ID : **63238626715**

Option 4 ID : **63238626716**

Status : **Answered**

Chosen Option : **1**

Q.26 The angle between the lines $\vec{r} = 3\hat{i} + 2\hat{j} - 4\hat{k} + \lambda(\hat{i} + 2\hat{j} + 2\hat{k})$ and $\vec{r} = 5\hat{j} - 2\hat{k} + \mu(3\hat{i} + 2\hat{j} + 6\hat{k})$ is :

1. $\sin^{-1}\left(\frac{19}{21}\right)$

2. $\cos^{-1}\left(\frac{19}{23}\right)$

3. $\cos^{-1}\left(\frac{19}{21}\right)$

4. $\sin^{-1}\left(\frac{19}{23}\right)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866682

Option 1 ID : 63238626725

Option 2 ID : 63238626726

Option 3 ID : 63238626727

Option 4 ID : 63238626728

Status : Not Answered

Chosen Option : --

Q.27 $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{dx}{1 + \sqrt{\tan x}}$ is equal to :

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

2. $\frac{\pi}{12}$

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866672

Option 1 ID : 63238626685

Option 2 ID : 63238626686

Option 3 ID : 63238626687

Option 4 ID : 63238626688

Status : Not Answered

Chosen Option : --

Q.28 The solution of $y' - y'' = 2x$ is:

A. $y = x^2 + 2x + 2$

B. $y = x^2 + 2x + 1$

C. $y = x + 2$

D. $y = x^2 - 2x + 1$

Choose the correct answer from the options given below:

1. A and B only

2. B only

3. C only

4. A and D only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866677

Option 1 ID : 63238626705

Option 2 ID : 63238626706

Option 3 ID : 63238626707

Option 4 ID : 63238626708

Status : Not Answered

Chosen Option : --

Q.29 The intervals for which $f(x) = x^4 - 2x^2$ is increasing are :

1. $(-\infty, 1)$
2. $(-1, \infty)$
3. $(-\infty, -1) \cup (0, 1)$
4. $(-1, 0) \cup (1, \infty)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866683

Option 1 ID : 63238626729

Option 2 ID : 63238626730

Option 3 ID : 63238626731

Option 4 ID : 63238626732

Status : Not Answered

Chosen Option : --

Q.30

The simplest form of $\tan^{-1} \frac{\sqrt{1+x^2}-1}{x}$, $x \neq 0$ is:

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866659

Option 1 ID : 63238626633

Option 2 ID : 63238626634

Option 3 ID : 63238626635

Option 4 ID : 63238626636

Status : Not Answered

Chosen Option : --

Q.31 The value of integral $\int \sqrt{4x^2 + 9} dx$ is

1. $\frac{x}{2}\sqrt{4x^2 + 9} + \frac{9}{2}\log|2x + \sqrt{4x^2 + 9}| + C$
2. $\frac{x}{2}\sqrt{4x^2 + 9} + \frac{3}{2}\log|2x + \sqrt{4x^2 + 9}| + C$
3. $2x\sqrt{4x^2 + 9} + \frac{9}{2}\log|2x + \sqrt{4x^2 + 9}| + C$
4. $x\sqrt{4x^2 + 9} + \frac{9}{4}\log|2x + \sqrt{4x^2 + 9}| + C$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866686

Option 1 ID : 63238626741

Option 2 ID : 63238626742

Option 3 ID : 63238626743

Option 4 ID : 63238626744

Status : Not Answered

Chosen Option : --

Q.32 Let $f(x) = x^3$ be a function with domain $\{0, 1, 2, 3\}$ then domain of f^{-1} is :

1. $\{3, 2, 1, 0\}$
2. $\{0, -1, -2, -3\}$
3. $\{0, 1, 8, 27\}$
4. $\{0, -1, -8, -27\}$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866687

Option 1 ID : 63238626745

Option 2 ID : 63238626746

Option 3 ID : 63238626747

Option 4 ID : 63238626748

Status : Not Answered

Chosen Option : --

Q.33 The area of the parallelogram determined by the vectors $\hat{i} + 2\hat{j} + 3\hat{k}$ and $3\hat{i} - 2\hat{j} + \hat{k}$ is

1. $8\sqrt{3}$
2. $4\sqrt{3}$
3. $16\sqrt{3}$
4. $2\sqrt{3}$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **6323866688**

Option 1 ID : **63238626749**

Option 2 ID : **63238626750**

Option 3 ID : **63238626751**

Option 4 ID : **63238626752**

Status : **Not Answered**

Chosen Option : --

Prepp
Your Personal Exam Guide

Q.34 A manufacturing company makes two models M_1 and M_2 of a product. Each piece of M_1 requires 9 labour hours for fabricating and one labour hour for finishing. Each piece of M_2 require 12 labour hours for fabricating and 3 labour hours for finishing. For fabricating and finishing, the maximum labour hours available are 180 and 30 respectively. The company makes a profit of Rs.800 on each piece of M_1 and Rs.1200 on each piece of M_2

The above Linear Programming Problem [LPP] is given by

1. Maximize $Z = 800x + 1200y$

Subject to constraints,

$$3x + 4y \leq 60$$

$$x + 3y \leq 30$$

$$x, y \geq 0$$

2. Maximize $Z = 800x + 1200y$

Subject to constraints,

$$3x + 4y \geq 60$$

$$x + 3y \geq 30$$

$$x, y \geq 0$$

3. Minimize $Z = 800x + 1200y$

Subject to constraints,

$$3x + 4y \leq 60$$

$$x + 3y \geq 30$$

$$x, y \geq 0$$

4. Minimize $Z = 800x + 1200y$

Subject to constraints,

$$3x + 4y \geq 60$$

$$x + 3y \leq 30$$

$$x, y \geq 0$$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866689

Option 1 ID : 63238626753

Option 2 ID : 63238626754

Option 3 ID : 63238626755

Option 4 ID : 63238626756

Status : Not Answered

Chosen Option : --

- Q.35** A manufacturing company makes two models M_1 and M_2 of a product. Each piece of M_1 requires 9 labour hours for fabricating and one labour hour for finishing. Each piece of M_2 require 12 labour hours for fabricating and 3 labour hours for finishing. For fabricating and finishing, the maximum labour hours available are 180 and 30 respectively. The company makes a profit of Rs.800 on each piece of M_1 and Rs.1200 on each piece of M_2

The maximum profit will be at the point

1. (0, 10)
2. (20, 0)
3. (12, 6)
4. (0, 0)

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866690

Option 1 ID : 63238626757

Option 2 ID : 63238626758

Option 3 ID : 63238626759

Option 4 ID : 63238626760

Status : Not Answered

Chosen Option : --

Section : Applied Mathematics

- Q.1** For a 3×3 matrix $A = [a_{ij}]$, whose element a_{ij} is given by $a_{ij} = \sqrt{i^2 + 3j}$

then what is element a_{31} ?

1. $\sqrt{6}$
2. $\sqrt{7}$
3. $2\sqrt{3}$
4. $2\sqrt{2}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866698

Option 1 ID : 63238626789

Option 2 ID : 63238626790

Option 3 ID : 63238626791

Option 4 ID : 63238626792

Status : Not Answered

Chosen Option : --

Q.2 A dishonest delivery man purchases 20 liters of pure milk and dilutes it by adding 4 liters of water. If he sells the diluted milk at Rs.50/L, then what is the cost price of pure milk?

- 1. Rs.40/L
- 2. Rs.58/L
- 3. Rs.60/L
- 4. Rs.62/L

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866692**
Option 1 ID : **63238626765**
Option 2 ID : **63238626766**
Option 3 ID : **63238626767**
Option 4 ID : **63238626768**
Status : **Not Answered**
Chosen Option : --

Q.3 For a manufacturer, total cost function is given by $C = \frac{x^2}{25} + 2x$. Which of the following are correct ?

- A. 2.6 is the marginal cost when 5 units are produced.
- B. $\frac{2x}{25} + 2$ is the marginal cost function.
- C. $\frac{x}{25} + 2$ is the average cost function.
- D. 2.4 is the marginal cost when 5 units are produced.
- E. $\frac{x}{25} + 1$ is the average cost function.

Choose the correct answer from the options given below:

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866703**
Option 1 ID : **63238626809**
Option 2 ID : **63238626810**
Option 3 ID : **63238626811**
Option 4 ID : **63238626812**
Status : **Not Answered**
Chosen Option : --

Q.4 The number of all possible matrices of order 3×3 with each entry 2 or 3 is.

- 1. 81
- 2. 27
- 3. 64
- 4. 512

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866699
Option 1 ID : 63238626793
Option 2 ID : 63238626794
Option 3 ID : 63238626795
Option 4 ID : 63238626796
Status : Not Answered
Chosen Option : --

Q.5 A book consisting of 2000 pages has 540 misprints distributed randomly throughout the book. The average number of misprints in one page of the book is:

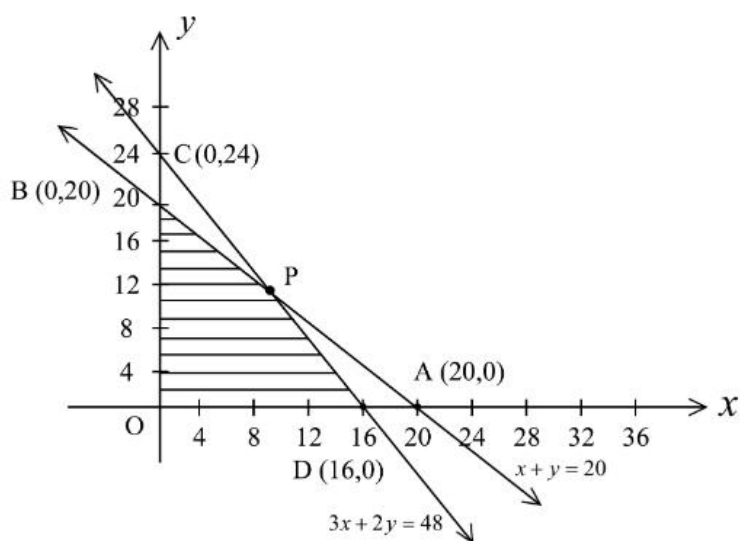
- 1. 0.0005
- 2. 0.002
- 3. 0.27
- 4. 0.027

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866706
Option 1 ID : 63238626821
Option 2 ID : 63238626822
Option 3 ID : 63238626823
Option 4 ID : 63238626824
Status : Not Answered
Chosen Option : --

Q.6

The feasible region for an LPP is shown in the figure given below: If objective is maximizing $Z = 22x + 18y$ find (x, y) for the optimal Z .



1. (0, 24)
2. (0, 20)
3. (8, 12)
4. (16, 0)

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866713

Option 1 ID : 63238626849

Option 2 ID : 63238626850

Option 3 ID : 63238626851

Option 4 ID : 63238626852

Status : Not Answered

Chosen Option : --

Q.7 Let us consider an annuity whose periodic payment is ₹ R payable at the end of each payment period for 'n' periods, interest paid r% per period or $i = \frac{r}{100}$, so the amount of obligation can be given as _____.

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

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MCQ**
Question ID : **6323866718**
Option 1 ID : **63238626869**
Option 2 ID : **63238626870**
Option 3 ID : **63238626871**
Option 4 ID : **63238626872**
Status : **Not Answered**
Chosen Option : --

Q.8 If the cash equivalent of a perpetuity of ₹1200 payable at end of each half year is ₹96,000, the annual rate of interest compounded half yearly is :

- 1. 5%
- 2. 2.5%
- 3. 3%
- 4. 4.5%

- Options**
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : **MCQ**
Question ID : **6323866717**
Option 1 ID : **63238626865**
Option 2 ID : **63238626866**
Option 3 ID : **63238626867**
Option 4 ID : **63238626868**
Status : **Not Answered**
Chosen Option : --

Q.9 The random variable X has a probability distribution P(X) of the following form where k is a scalar and

$$P(X = x) = \begin{cases} k, & \text{if } x = 0 \\ 2k, & \text{if } x = 1 \\ 3k, & \text{if } x = 2 \\ 0, & \text{otherwise} \end{cases}$$

then value of P(X < 2) = _____.

1. $\frac{5}{6}$

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

3. 1

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **6323866704**

Option 1 ID : **63238626813**

Option 2 ID : **63238626814**

Option 3 ID : **63238626815**

Option 4 ID : **63238626816**

Status : **Not Answered**

Chosen Option : --

Q.10 Mr. X takes a personal loan of ₹10,00,000 at the rate of 12% per annum for 6 years. Calculate his EMI by using flat rate method

1. ₹23,888.88

2. ₹24,000

3. ₹21,500

4. ₹21666.66

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **6323866716**

Option 1 ID : **63238626861**

Option 2 ID : **63238626862**

Option 3 ID : **63238626863**

Option 4 ID : **63238626864**

Status : **Not Answered**

Chosen Option : --

Q.11 The following data is available for two independent sample:

	SAMPLE-1	SAMPLE-2
sample size	8	10
sample mean	191	199
sample standard deviation	10	12

Then the value of t-statistic is :

1. +1.54

2. -1.54

3. -1.74

4. -1.10

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866715

Option 1 ID : 63238626857

Option 2 ID : 63238626858

Option 3 ID : 63238626859

Option 4 ID : 63238626860

Status : Not Answered

Chosen Option : --

Q.12 Three partners Ramesh, Suresh and Mahesh shared the profit in a business in the ratio 5:4:7 respectively, they invested the money for 10 months, 8 months and 6 months respectively then ratio of their investment is :

1. 5:3:3

2. 3:3:7

3. 5:4:7

4. 4:5:3

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866691

Option 1 ID : 63238626761

Option 2 ID : 63238626762

Option 3 ID : 63238626763

Option 4 ID : 63238626764

Status : Not Answered

Chosen Option : --

Q.13 The variance of the Binomial Distribution $B\left(5, \frac{1}{4}\right)$ is:

1. $\frac{4}{5}$
2. $\frac{7}{8}$
3. $\frac{15}{16}$
4. $\frac{4}{7}$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866707**
Option 1 ID : **63238626825**
Option 2 ID : **63238626826**
Option 3 ID : **63238626827**
Option 4 ID : **63238626828**
Status : **Not Answered**
Chosen Option : --

Q.14 The rise in prices before Christmas is an example of

1. Long term trend
2. Cyclical trend
3. Seasonal trend
4. Irregular trend

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866712**
Option 1 ID : **63238626845**
Option 2 ID : **63238626846**
Option 3 ID : **63238626847**
Option 4 ID : **63238626848**
Status : **Not Answered**
Chosen Option : --

Q.15 The total cost of producing x generators is given by

$$TC = x^3 - 60x^2 + 1500x + 2000.$$

The Marginal Cost (MC), when $x = 10$ units is:

1. ₹2,000
2. ₹1,200
3. ₹600
4. ₹200

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866702

Option 1 ID : 63238626805

Option 2 ID : 63238626806

Option 3 ID : 63238626807

Option 4 ID : 63238626808

Status : Not Answered

Chosen Option : --

Q.16 Given $\sum p_0q_0 = 800$, $\sum p_0q_1 = 1500$, $\sum p_1q_1 = 1300$ and $\sum p_1q_0 = 900$, where subscripts 0 and 1 are used for base year and current year respectively. The Paasche's index number is:

1. 88.9
2. 115.4
3. 144.4
4. 86.7

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866710

Option 1 ID : 63238626837

Option 2 ID : 63238626838

Option 3 ID : 63238626839

Option 4 ID : 63238626840

Status : Not Answered

Chosen Option : --

Q.17

Mr. X invested ₹20,000 in year 2022 for 5 years. If Compound annual growth rate for that investment turned out to be 12%, the end value of the investment will be : {Use $(1.12)^5 = 1.76$ }

1. ₹26,000
2. ₹30,000
3. ₹22,400
4. ₹35,200

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866720

Option 1 ID : 63238626877

Option 2 ID : 63238626878

Option 3 ID : 63238626879

Option 4 ID : 63238626880

Status : Not Answered

Chosen Option : --

Q.18 The set of values of x satisfying $26 \equiv 5 \pmod{x}$ is _____.

1. $\{3, 7\}$
2. $\{1, 3, 7\}$
3. $\{3, 21\}$
4. $\{3, 7, 21\}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866693

Option 1 ID : 63238626769

Option 2 ID : 63238626770

Option 3 ID : 63238626771

Option 4 ID : 63238626772

Status : Not Answered

Chosen Option : --

Q.19 The corner points of the feasible region determined by the system of linear constraints are $(0, 10)$, $(5, 5)$, $(15, 15)$, $(0, 20)$. Let $Z = ax + by$, where $a, b > 0$. Condition on a and b so that the maximizing value of Z occurs at both the points $(15, 15)$ and $(0, 20)$ is:

- 1. $a = b$
- 2. $a = 2b$
- 3. $b = 2a$
- 4. $b = 3a$

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866714**

Option 1 ID : **63238626853**

Option 2 ID : **63238626854**

Option 3 ID : **63238626855**

Option 4 ID : **63238626856**

Status : **Not Answered**

Chosen Option : --

Q.20 Two positive numbers x and y such that $x + y = 60$ and xy^3 is maximum are :

- 1. $x = 30, y = 30$
- 2. $x = 20, y = 40$
- 3. $x = 15, y = 45$
- 4. $x = 55, y = 5$

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866701**

Option 1 ID : **63238626801**

Option 2 ID : **63238626802**

Option 3 ID : **63238626803**

Option 4 ID : **63238626804**

Status : **Not Answered**

Chosen Option : --

Q.21

A swimmer's speed in swimming pool is 6 km/hr. He swims between two points in a river and returns back to the starting point. He took 24 minutes more to cover the distance upstream than downstream. If the speed of the stream is 4 km/hr, then the distance between two points is:

- 1. 0.5 km
- 2. 1 km
- 3. 1.5 km
- 4. 2 km

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866695**

Option 1 ID : **63238626777**

Option 2 ID : **63238626778**

Option 3 ID : **63238626779**

Option 4 ID : **63238626780**

Status : **Not Answered**

Chosen Option : --

Q.22

The price index of sugar in 2019 compared to 2016 is 120. If the cost of sugar was ₹25 per kg in 2016 then the cost in 2019 is:

- 1. ₹30 per kg
- 2. ₹35 per kg
- 3. ₹40 per kg
- 4. ₹42 per kg

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866711**

Option 1 ID : **63238626841**

Option 2 ID : **63238626842**

Option 3 ID : **63238626843**

Option 4 ID : **63238626844**

Status : **Not Answered**

Chosen Option : --

Q.23 Given that p_0 and p_1 represent base and current prices of a commodity, q_0 and q_1 refer to the base and current quantities, then the formula used to calculate price relatives is :

1. $\frac{p_1}{p_0} \times 100$
2. $\frac{p_1 q_1}{p_0 q_0} \times 100$
3. $\frac{q_0}{q_1} \times 100$
4. $\sqrt{p_0 p_1}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **6323866708**

Option 1 ID : **63238626829**

Option 2 ID : **63238626830**

Option 3 ID : **63238626831**

Option 4 ID : **63238626832**

Status : **Not Answered**

Chosen Option : --

Q.24

In the formula for Z-test statistic $Z = \frac{\bar{x} - \mu_0}{\frac{\sigma}{\sqrt{n}}}$, mark the incorrect statement.

1. $\bar{x}$ is sample mean
2. μ_0 is population mean
3. n is sample size
4. σ is variance of the population

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **6323866709**

Option 1 ID : **63238626833**

Option 2 ID : **63238626834**

Option 3 ID : **63238626835**

Option 4 ID : **63238626836**

Status : **Not Answered**

Chosen Option : --

Q.25 If the life expectancy of an asset is 10 years, scrap value ₹5,000 and annual depreciation of ₹3000 per annum, then original cost of the asset is:

- 1. ₹30,000
- 2. ₹50,000
- 3. ₹35,000
- 4. ₹40,000

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866719**
Option 1 ID : **63238626873**
Option 2 ID : **63238626874**
Option 3 ID : **63238626875**
Option 4 ID : **63238626876**
Status : **Not Answered**
Chosen Option : --

Q.26 Pipe A can independently empty a half-filled tank in 3 hours whereas pipe B can alone fill the same tank in 4 hours, when the tank is completely empty. In how much time will the empty tank be completely filled, if both the pipes are opened together?

- 1. 2 hours
- 2. 6 hours
- 3. 7 hours
- 4. 12 hours

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **6323866696**
Option 1 ID : **63238626781**
Option 2 ID : **63238626782**
Option 3 ID : **63238626783**
Option 4 ID : **63238626784**
Status : **Not Answered**
Chosen Option : --

Q.27 If $A' = \begin{bmatrix} -2 & 3 \\ 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 0 \\ 2 & 3 \end{bmatrix}$

then $(3A + 2B)'$ is :

1. $\begin{bmatrix} -2 & 5 \\ 1 & 10 \end{bmatrix}$

2. $\begin{bmatrix} 8 & 13 \\ -2 & 12 \end{bmatrix}$

3. $\begin{bmatrix} -8 & 13 \\ 3 & 12 \end{bmatrix}$

4. $\begin{bmatrix} 7 & 10 \\ -3 & 12 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866700

Option 1 ID : 63238626797

Option 2 ID : 63238626798

Option 3 ID : 63238626799

Option 4 ID : 63238626800

Status : Not Answered

Chosen Option : --

Q.28 A runs 5 times faster than B. If A gives B a start of 100 m, how far must the goal be so that A and B reach there at the same time.

1. 100 m

2. 500 m

3. 125 m

4. 120 m

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866694

Option 1 ID : 63238626773

Option 2 ID : 63238626774

Option 3 ID : 63238626775

Option 4 ID : 63238626776

Status : Not Answered

Chosen Option : --

Q.29 A shopkeeper wants to check the average number of cars sold per call. Past record of sales is shown below:

Sale of cars (Units)	0	1	2	3
Probabilities	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{3}{10}$	$\frac{1}{30}$

The expected number of cars sold is :

- 1. 0.5
- 2. 1.2
- 3. 1.6
- 4. 2.4

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866705
Option 1 ID : 63238626817
Option 2 ID : 63238626818
Option 3 ID : 63238626819
Option 4 ID : 63238626820
Status : Not Answered
Chosen Option : --

Q.30 In a game of carrom of 100 points, A can give B 20 points and C 40 points, then points B can give C is:

- 1. 35 points
- 2. 25 points
- 3. 15 points
- 4. 20 points

- Options
- 1. 1
 - 2. 2
 - 3. 3
 - 4. 4

Question Type : MCQ
Question ID : 6323866697
Option 1 ID : 63238626785
Option 2 ID : 63238626786
Option 3 ID : 63238626787
Option 4 ID : 63238626788
Status : Not Answered
Chosen Option : --

Q.31 The solution set of the inequation $\frac{7+5x}{4} \geq \frac{x}{3} - 10, x \in \mathbb{R}$ is :

1. $(-\infty, \frac{141}{11}]$

2. $(-\infty, \frac{141}{11})$

3. $[-\frac{141}{11}, \infty)$

4. $(-\frac{141}{11}, \infty)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 6323866721

Option 1 ID : 63238626881

Option 2 ID : 63238626882

Option 3 ID : 63238626883

Option 4 ID : 63238626884

Status : Not Answered

Chosen Option : --

Q.32 If $y = \frac{\log x}{x^2}$, then $\frac{d^2 y}{dx^2}$ is equal to

1. $\frac{5 \log x - 6}{x^3}$

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

3. $\frac{4 \log x - 3}{x}$

4. $\frac{6 \log x - 5}{x^4}$

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866722

Option 1 ID : 63238626885

Option 2 ID : 63238626886

Option 3 ID : 63238626887

Option 4 ID : 63238626888

Status : Not Answered

Chosen Option : --

Q.33 If the mean of a binomial distribution is 12 and its standard deviation is 2, then the number of trials is :

1. 18

2. 14

3. 24

4. 16

Options

1. 1
2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 6323866723

Option 1 ID : 63238626889

Option 2 ID : 63238626890

Option 3 ID : 63238626891

Option 4 ID : 63238626892

Status : Not Answered

Chosen Option : --

Q.34 A simple random sample consists of three observations 1, 3, 5. The point estimate of the population standard deviation is :

- 1. 2.5
- 2. 3
- 3. 2
- 4. 4.2

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866724**

Option 1 ID : **63238626893**

Option 2 ID : **63238626894**

Option 3 ID : **63238626895**

Option 4 ID : **63238626896**

Status : **Not Answered**

Chosen Option : --

Q.35 The effective rate that is equivalent to a nominal rate of 16% compounded semi-annually is :

- 1. 15.16%
- 2. 16.64%
- 3. 18.32%
- 4. 20.24%

Options 1. 1

- 2. 2
- 3. 3
- 4. 4

Question Type : **MCQ**

Question ID : **6323866725**

Option 1 ID : **63238626897**

Option 2 ID : **63238626898**

Option 3 ID : **63238626899**

Option 4 ID : **63238626900**

Status : **Not Answered**

Chosen Option : --