

Section : Common

Q.1

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015165

Option 1 ID : 54025060657

Option 2 ID : 54025060658

Option 3 ID : 54025060659

Option 4 ID : 54025060660

Status : Answered

Chosen Option : 1

Q.2 If A and B are events such that  $P(A|B) = P(B|A)$ , then :

- (1)  $A = B$
- (2)  $A \cap B = \phi$
- (3)  $A \subset B$  but  $A \neq B$
- (4)  $P(A) = P(B)$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015169

Option 1 ID : 54025060673

Option 2 ID : 54025060674

Option 3 ID : 54025060675

Option 4 ID : 54025060676

Status : Answered

Chosen Option : 4

Q.3 The feasible region for the constraints  $x \geq 0$ ,  $x + y \leq 1$  and  $x - y \leq 1$ , is situated in :

- (A) I and II Quadrant
- (B) I Quadrant
- (C) II and IV Quadrant
- (D) IV Quadrant
- (E) I, II, III and IV Quadrant

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

- (1) (A) Only
- (2) (B) and (D) Only
- (3) (B) and (C) Only
- (4) (E) Only

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015168

Option 1 ID : 54025060669

Option 2 ID : 54025060670

Option 3 ID : 54025060671

Option 4 ID : 54025060672

Status : Answered

Chosen Option : 1

**Q.4** Which constraint correctly represents the situation "Mixture of x and y must be at least 8 units" ?

- (1)  $x + y > 8$
- (2)  $x + y < 8$
- (3)  $x + y \leq 8$
- (4)  $x + y \geq 8$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015167

Option 1 ID : 54025060665

Option 2 ID : 54025060666

Option 3 ID : 54025060667

Option 4 ID : 54025060668

Status : Answered

Chosen Option : 3

**Q.5** The values of a for which, the function  $f(x) = a^x$  is increasing on  $\mathbf{R}$  are given by :

- (1)  $0 < a < \infty$
- (2)  $-\infty < a < \infty$
- (3)  $1 < a < \infty$
- (4)  $0 \leq a < \infty$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015162

Option 1 ID : 54025060645

Option 2 ID : 54025060646

Option 3 ID : 54025060647

Option 4 ID : 54025060648

Status : Answered

Chosen Option : 1

Q.6 If  $(x+1)e^y = 1$ , then :

(1)  $\frac{d^2y}{dx^2} = y^2$

(2)  $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

(3)  $\frac{d^2y}{dx^2} = -y^2$

(4)  $\frac{d^2y}{dx^2} = \frac{dy}{dx}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015161

Option 1 ID : 54025060641

Option 2 ID : 54025060642

Option 3 ID : 54025060643

Option 4 ID : 54025060644

Status : Answered

Chosen Option : 2

Q.7 Match List - I with List - II.

| List - I                                    | List - II         |
|---------------------------------------------|-------------------|
| Differential Equations                      | Degree            |
| (A) $\left(\frac{dy}{dx}\right)^3 + yx = 0$ | (I) 2             |
| (B) $e^{\frac{dy}{dx}} + y^2 + y'' = 0$     | (II) 1            |
| (C) $xyy'' + x(y')^2 - yy' = 0$             | (III) Not defined |
| (D) $(y'')^2 + y = 0$                       | (IV) 3            |

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015163

Option 1 ID : 54025060649

Option 2 ID : 54025060650

Option 3 ID : 54025060651

Option 4 ID : 54025060652

Status : Answered

Chosen Option : 1

Q.8 Match List - I with List - II.

| List - I                    | List - II                 |
|-----------------------------|---------------------------|
| Equation of curves          | Slope of tangent at $x=2$ |
| (A) $y = x^3 - x$           | (I) 8                     |
| (B) $y = (x - 2)^2$         | (II) $2/3$                |
| (C) $y = 2x^2 + 3$          | (III) 11                  |
| (D) $y = \sqrt{4x + 1} - 7$ | (IV) 0                    |

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015160

Option 1 ID : 54025060637

Option 2 ID : 54025060638

Option 3 ID : 54025060639

Option 4 ID : 54025060640

Status : Answered

Chosen Option : 3

Q.9 Any function  $f(x)$  is an increasing function in  $[a, b]$  if :

- (A)  $\forall x_1, x_2 \in [a, b], f(x_1) \geq f(x_2)$  if  $x_1 < x_2$
- (B)  $\forall x_1, x_2 \in [a, b], f(x_1) \geq f(x_2)$  if  $x_1 > x_2$
- (C)  $\forall x_1, x_2 \in [a, b], f(x_1) \leq f(x_2)$  if  $x_1 < x_2$
- (D)  $\forall x_1, x_2 \in [a, b], f(x_1) < f(x_2)$  if  $x_1 > x_2$

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

- (1) (A), (D) Only
- (2) (B), (D) Only
- (3) (B), (C) Only
- (4) (A), (C) Only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015159

Option 1 ID : 54025060633

Option 2 ID : 54025060634

Option 3 ID : 54025060635

Option 4 ID : 54025060636

Status : Answered

Chosen Option : 3

Q.10

If  $\begin{vmatrix} 2 & 4 \\ 5 & 1 \end{vmatrix} = \begin{vmatrix} 2x & 4 \\ 6 & x \end{vmatrix}$ , then x is equal to :

- (1) 1
- (2)  $2\sqrt{3}$
- (3)  $\pm\sqrt{3}$
- (4)  $\pm 2\sqrt{3}$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015157

Option 1 ID : 54025060625

Option 2 ID : 54025060626

Option 3 ID : 54025060627

Option 4 ID : 54025060628

Status : Answered

Chosen Option : 3

Q.11

The sum of the minor and the cofactor of the element 6 in the determinant  $\Delta = \begin{vmatrix} 2 & 3 & 1 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$  is :

- (1) -5
- (2) -10
- (3) 10
- (4) 0

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015158

Option 1 ID : 54025060629

Option 2 ID : 54025060630

Option 3 ID : 54025060631

Option 4 ID : 54025060632

Status : Answered

Chosen Option : 4



**Q.12** A die is thrown. If A is the event 'the number appearing is a multiple of 3 and B is the event 'the number appearing is even', then A and B are :

- (1) dependent events
- (2) independent events
- (3)  $P(A \cap B) = \frac{1}{3}$
- (4)  $P(B) = \frac{1}{3}$

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015170**

Option 1 ID : **54025060677**

Option 2 ID : **54025060678**

Option 3 ID : **54025060679**

Option 4 ID : **54025060680**

Status : **Answered**

Chosen Option : **2**

**Q.13**

The value of the integral  $I = \int_{-1}^1 (x+x^3+x^5) dx$  is :

- (1) 2
- (2) -2
- (3) 0
- (4) 1

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015166**

Option 1 ID : **54025060661**

Option 2 ID : **54025060662**

Option 3 ID : **54025060663**

Option 4 ID : **54025060664**

Status : **Answered**

Chosen Option : **3**

**Q.14** If a matrix has 24 elements, which of the following cannot be the possible order of the matrix ?

- (1)  $6 \times 4$
- (2)  $12 \times 12$
- (3)  $8 \times 3$
- (4)  $1 \times 24$

**Options**

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

Question Type : **MCQ**

Question ID : **54025015156**

Option 1 ID : **54025060621**

Option 2 ID : **54025060622**

Option 3 ID : **54025060623**

Option 4 ID : **54025060624**

Status : **Answered**

Chosen Option : **2**

**Q.15** Area of the region bounded by the curve  $x^2 = 4y$ ,  $x$ -axis and  $x=3$  is :

- (1)  $\frac{9}{2}$  sq. units
- (2)  $\frac{9}{4}$  sq. units
- (3)  $\frac{9}{5}$  sq. units
- (4)  $\frac{9}{8}$  sq. units

**Options**

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

Question Type : **MCQ**

Question ID : **54025015164**

Option 1 ID : **54025060653**

Option 2 ID : **54025060654**

Option 3 ID : **54025060655**

Option 4 ID : **54025060656**

Status : **Answered**

Chosen Option : **2**

Q.1

The area lying between the curves  $y^2 = 4x$  and  $y = 2x$  is :

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

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015191

Option 1 ID : 54025060761

Option 2 ID : 54025060762

Option 3 ID : 54025060763

Option 4 ID : 54025060764

Status : Not Answered

Chosen Option : --

Q.2

The distance of the point with position vector  $(2\hat{i} + \hat{j} - \hat{k})$  from the plane

$$\vec{r} \cdot (-2\hat{i} + \hat{j} + 3\hat{k}) = 8 \text{ is :}$$

- (1)  $\frac{7}{\sqrt{14}}$
- (2)  $2\sqrt{14}$
- (3)  $\sqrt{14}$
- (4)  $\frac{\sqrt{14}}{7}$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015194

Option 1 ID : 54025060773

Option 2 ID : 54025060774

Option 3 ID : 54025060775

Option 4 ID : 54025060776

Status : Not Answered

Chosen Option : --

Q.3

The derivative of  $\cos^{-1}\left(\frac{\sin x + \cos x}{\sqrt{2}}\right)$ ,  $-\frac{\pi}{4} < x < \frac{\pi}{4}$  with respect to  $x$  is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015183

Option 1 ID : 54025060729

Option 2 ID : 54025060730

Option 3 ID : 54025060731

Option 4 ID : 54025060732

Status : Not Answered

Chosen Option : --

Q.4

The Greatest Integer Function  $f: \mathbb{R} \rightarrow \mathbb{R}$  given by  $f(x) = [x]$ ,  $x \in \mathbb{R}$  and  $[x]$  denotes the greatest integer less than or equal to  $x$  is :

- (1) one-one
- (2) onto
- (3) both one-one and onto
- (4) neither one-one nor onto

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015173

Option 1 ID : 54025060689

Option 2 ID : 54025060690

Option 3 ID : 54025060691

Option 4 ID : 54025060692

Status : Not Answered

Chosen Option : --

Q.5

The value(s) of  $x$ , for which the matrix  $A = \begin{bmatrix} x-1 & 1 & 1 \\ 1 & x-1 & 1 \\ 1 & 1 & x-1 \end{bmatrix}$  is singular, is/are :

- (1) 1
- (2) -1, 2
- (3)  $\pm 1$
- (4) 1, 2

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015177

Option 1 ID : 54025060705

Option 2 ID : 54025060706

Option 3 ID : 54025060707

Option 4 ID : 54025060708

Status : Not Answered

Chosen Option : --

Q.6

Consider a binary operation  $*$  on  $N$  defined as  $a*b = a^3 + b^3$ , choose the correct answer :

- (1)  $*$  is both associative and commutative
- (2)  $*$  is associative but not commutative
- (3)  $*$  is commutative but not associative
- (4)  $*$  is neither commutative nor associative

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015171

Option 1 ID : 54025060681

Option 2 ID : 54025060682

Option 3 ID : 54025060683

Option 4 ID : 54025060684

Status : Not Answered

Chosen Option : --

**Q.7** The rate of change of the area of an equilateral triangle with respect to its side when its side = 2 is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015186

Option 1 ID : 54025060741

Option 2 ID : 54025060742

Option 3 ID : 54025060743

Option 4 ID : 54025060744

Status : Not Answered

Chosen Option : --

**Q.8** The linear programming problem :

minimise  $z = 3x + 2y$

subject to the constraints

$x + y \geq 8,$

$3x + 5y \leq 15, x \geq 0, y \geq 0$

has

- (1) one solution
- (2) two solutions
- (3) no feasible solution
- (4) infinitely many solutions

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015197

Option 1 ID : 54025060785

Option 2 ID : 54025060786

Option 3 ID : 54025060787

Option 4 ID : 54025060788

Status : Not Answered

Chosen Option : --

Q.9

The value of  $a + b + c + d$  if  $\begin{bmatrix} 2a+b & a+2b \\ 2c+d & c+2d \end{bmatrix} = \begin{bmatrix} 8 & 4 \\ 3 & 3 \end{bmatrix}$  is :

- (1) 4
- (2) 2
- (3) 6
- (4) 8

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015174**

Option 1 ID : **54025060693**

Option 2 ID : **54025060694**

Option 3 ID : **54025060695**

Option 4 ID : **54025060696**

Status : **Not Answered**

Chosen Option : --

Q.10

$$\text{If } A = [2 \ -3 \ 4] \quad B = \begin{bmatrix} 3 \\ 2 \\ 2 \end{bmatrix}$$

$$X = [1 \ 2 \ 3] \quad Y = \begin{bmatrix} 2 \\ 3 \\ 4 \end{bmatrix}$$

then  $AB + XY =$

- (1) [28]
- (2) [24]
- (3) 28
- (4) 24

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015179

Option 1 ID : 54025060713

Option 2 ID : 54025060714

Option 3 ID : 54025060715

Option 4 ID : 54025060716

Status : Not Answered

Chosen Option : --



Q.11

The maximum value of the  $f(x) = \frac{1}{4x^2 + 2x + 1}$  is :

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

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

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015184

Option 1 ID : 54025060733

Option 2 ID : 54025060734

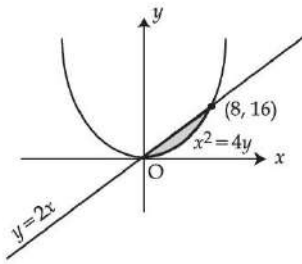
Option 3 ID : 54025060735

Option 4 ID : 54025060736

Status : Not Answered

Chosen Option : --

**Q.12** Which of the following is the correct equation to find the area of the shaded region, with reference to the figure given below ?



(1)  $A = 2 \int_0^8 (2x - x^2) dx$

(2)  $A = 2 \int_0^4 (2x - x^2) dx$

(3)  $A = 2 \int_0^4 \left( 2x - \frac{x^2}{4} \right) dx$

(4)  $A = \int_0^8 \left( 2x - \frac{x^2}{4} \right) dx$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015190

Option 1 ID : 54025060757

Option 2 ID : 54025060758

Option 3 ID : 54025060759

Option 4 ID : 54025060760

Status : Not Answered

Chosen Option : --

Q.13

The general solution of the differential equation  $\frac{dy}{dx} = \sin^{-1} x$  is :

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

Options

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

Question Type : MCQ

Question ID : 54025015192

Option 1 ID : 54025060765

Option 2 ID : 54025060766

Option 3 ID : 54025060767

Option 4 ID : 54025060768

Status : Not Answered

Chosen Option : --

**Q.14** The tangent to the curve  $y = x^3 - 11x + 5$  at  $x = 2$  is parallel to :

- (A)  $y = x + 1$
- (B)  $y = -x + 2$
- (C)  $2y = x + 3$
- (D)  $2y = 2x + 4$

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

- (1) (A), (B) Only
- (2) (B), (C) Only
- (3) (A), (D) Only
- (4) (B), (D) Only

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015185**

Option 1 ID : **54025060737**

Option 2 ID : **54025060738**

Option 3 ID : **54025060739**

Option 4 ID : **54025060740**

Status : **Not Answered**

Chosen Option : --

Q.15

Let  $A = \begin{bmatrix} 1 & \cos\theta & 1 \\ -\cos\theta & 1 & \cos\theta \\ -1 & -\cos\theta & 1 \end{bmatrix}$   $0 \leq \theta \leq 2\pi$ , then :

- (1)  $|A| = 0$
- (2)  $|A| \in [2, 4]$
- (3)  $|A| \in (2, 4)$
- (4)  $|A| \in (2, \infty)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015178

Option 1 ID : 54025060709

Option 2 ID : 54025060710

Option 3 ID : 54025060711

Option 4 ID : 54025060712

Status : Not Answered

Chosen Option : --

Q.16 Match List - I with List - II.

| List - I                         | List - II                                                 |
|----------------------------------|-----------------------------------------------------------|
| Functions                        | Range                                                     |
| (A) $\operatorname{cosec}^{-1}x$ | (I) $(0, \pi)$                                            |
| (B) $\sec^{-1}x$                 | (II) $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right] - \{0\}$ |
| (C) $\tan^{-1}x$                 | (III) $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$        |
| (D) $\cot^{-1}x$                 | (IV) $[0, \pi] - \left\{\frac{\pi}{2}\right\}$            |

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015187

Option 1 ID : 54025060745

Option 2 ID : 54025060746

Option 3 ID : 54025060747

Option 4 ID : 54025060748

Status : Not Answered

Chosen Option : --

Q.17

The value of  $\frac{9}{4} \sin^{-1} \frac{2\sqrt{2}}{3} + \frac{9}{4} \sin^{-1} \frac{1}{3}$  is :

(1)  $\frac{9}{4}$

(2)  $\frac{9\pi}{4}$

(3)  $\frac{\pi}{8}$

(4)  $\frac{9\pi}{8}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015172

Option 1 ID : 54025060685

Option 2 ID : 54025060686

Option 3 ID : 54025060687

Option 4 ID : 54025060688

Status : Not Answered

Chosen Option : --

Q.18

If A is square matrix such that  $A^2 = A$ , then  $(I + A)^3 - 8A$  is equal to :

(1) I

(2) A

(3)  $I - A$

(4)  $3A$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015175

Option 1 ID : 54025060697

Option 2 ID : 54025060698

Option 3 ID : 54025060699

Option 4 ID : 54025060700

Status : Not Answered

Chosen Option : --

Q.19

For  $A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$  if  $M_{ij}$  and  $A_{ij}$  are the minor and the cofactor of  $a_{ij}$  respectively, then  $|A|$

equals to :

- (A)  $a_{11}A_{11} + a_{12}A_{12} + a_{13}A_{13}$
- (B)  $a_{21}A_{12} + a_{22}A_{22} + a_{23}A_{32}$
- (C)  $a_{11}M_{11} - a_{12}M_{12} + a_{13}M_{13}$
- (D)  $a_{11}M_{11} + a_{12}M_{12} + a_{13}M_{13}$

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

- (1) (A), (B) Only
- (2) (A), (C) Only
- (3) (C), (D) Only
- (4) (A), (C), (D) Only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015176**

Option 1 ID : **54025060701**

Option 2 ID : **54025060702**

Option 3 ID : **54025060703**

Option 4 ID : **54025060704**

Status : **Not Answered**

Chosen Option : --



Q.20

The integral  $I = \int e^x \left( \frac{1 + \sin x}{1 + \cos x} \right) dx$  is :

- (1)  $e^x \tan x + C$ , where  $C$  is a constant
- (2)  $e^x \sec x + C$ , where  $C$  is a constant
- (3)  $e^x \tan\left(\frac{x}{2}\right) + C$ , where  $C$  is a constant
- (4)  $e^{-x} \tan\left(\frac{x}{2}\right) + C$ , where  $C$  is a constant

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015188

Option 1 ID : 54025060749

Option 2 ID : 54025060750

Option 3 ID : 54025060751

Option 4 ID : 54025060752

Status : Not Answered

Chosen Option : --

**Q.21** The direction cosines of the normal to the plane  $x - y + z = 4$  are :

(1)  $-\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}$

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

(3)  $\frac{1}{\sqrt{3}}, \frac{-1}{\sqrt{3}}, \frac{1}{\sqrt{3}}$

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015181

Option 1 ID : 54025060721

Option 2 ID : 54025060722

Option 3 ID : 54025060723

Option 4 ID : 54025060724

Status : Not Answered

Chosen Option : --

**Q.22** The two events E and F are independent. If  $P(E) = 0.3$  and  $P(E \cup F) = 0.5$ , then  $P(E/F) - P(F/E)$  is :

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

(2)  $\frac{3}{35}$

(3)  $\frac{1}{70}$

(4)  $\frac{1}{7}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015199

Option 1 ID : 54025060793

Option 2 ID : 54025060794

Option 3 ID : 54025060795

Option 4 ID : 54025060796

Status : Not Answered

Chosen Option : --

**Q.23** Corner points of the feasible region for a linear programming problem are  $(0, 2)$ ,  $(3, 0)$ ,  $(6, 0)$ ,  $(6, 8)$  and  $(0, 5)$ . Let  $F = 4x + 6y$  be the objective function. Then the minimum value of  $F$  occurs at :

- (1)  $(0, 2)$  only
- (2)  $(3, 0)$  only
- (3) The 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** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015198**

Option 1 ID : **54025060789**

Option 2 ID : **54025060790**

Option 3 ID : **54025060791**

Option 4 ID : **54025060792**

Status : **Not Answered**

Chosen Option : --

Q.24 Match List - I with List - II.

| List - I                      | List - II                                                                       |
|-------------------------------|---------------------------------------------------------------------------------|
| (Function $y$ )               | (Derivative $\frac{dy}{dx}$ )                                                   |
| (A) $y = \cos \sqrt{x}$       | (I) $\frac{\sec(\tan \sqrt{x}) \tan(\tan \sqrt{x}) \sec^2 \sqrt{x}}{2\sqrt{x}}$ |
| (B) $y = \sqrt{\sin x}$       | (II) $-3x^2 \cos(x^3) \sin(\sin(x^3))$                                          |
| (C) $y = \sec(\tan \sqrt{x})$ | (III) $\frac{\cos x}{2\sqrt{\sin x}}$                                           |
| (D) $y = \cos(\sin(x^3))$     | (IV) $\frac{-1}{2\sqrt{x}} \sin \sqrt{x}$                                       |

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015182

Option 1 ID : 54025060725

Option 2 ID : 54025060726

Option 3 ID : 54025060727

Option 4 ID : 54025060728

Status : Not Answered

Chosen Option : --

Q.25

Vector in the direction of  $\hat{i} + \hat{j} + \hat{k}$  with magnitude 5 units is :

(1)  $\frac{\hat{i} - \hat{j} + \hat{k}}{\sqrt{3}}$

(2)  $\frac{\hat{i} + \hat{j} + \hat{k}}{\sqrt{3}}$

(3)  $\frac{5(\hat{i} + \hat{j} + \hat{k})}{\sqrt{3}}$

(4)  $\frac{5}{3} (\hat{i} + \hat{j} + \hat{k})$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015196

Option 1 ID : 54025060781

Option 2 ID : 54025060782

Option 3 ID : 54025060783

Option 4 ID : 54025060784

Status : Not Answered

Chosen Option : --

Q.26

The general solution of the differential equation  $ydx - (x + 2y^2) dy = 0$  is :

(1)  $x = 2y^2 + Cy$ , C is a constant

(2)  $y = 2x^2 + Cy$ , C is a constant

(3)  $y = 2x^2 + Cx$ , C is a constant

(4)  $x = 2x^2 + Cy$ , C is a constant

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015193

Option 1 ID : 54025060769

Option 2 ID : 54025060770

Option 3 ID : 54025060771

Option 4 ID : 54025060772

Status : Not Answered

Chosen Option : --

Q.27

If  $\vec{a} + \lambda \vec{b}$  is perpendicular to  $\vec{c}$ , where  $\vec{a} = -\hat{i} + 2\hat{j} + \hat{k}$ ,  $\vec{b} = 3\hat{i} + 2\hat{j} + \hat{k}$  and  $\vec{c} = \hat{i} - \hat{j}$

then :

- (1)  $\lambda = -1$
- (2)  $\lambda = -3$
- (3)  $\lambda = 1$
- (4)  $\lambda = 3$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015195

Option 1 ID : 54025060777

Option 2 ID : 54025060778

Option 3 ID : 54025060779

Option 4 ID : 54025060780

Status : Not Answered

Chosen Option : --

Q.28

The probability that A speaks the truth is  $\frac{4}{5}$ . He throws a die and reports that it is a five. The probability that it is actually a five is :

- (1)  $\frac{4}{9}$
- (2)  $\frac{1}{2}$
- (3)  $\frac{2}{9}$
- (4)  $\frac{5}{9}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015200

Option 1 ID : 54025060797

Option 2 ID : 54025060798

Option 3 ID : 54025060799

Option 4 ID : 54025060800

Status : Not Answered

Chosen Option : --

Q.29 Which of the following statements is/are correct ?

- (A)  $|x|$  is continuous every where in its domain.
- (B)  $|x|$  is differentiable every where in its domain.
- (C)  $[x]$  is continuous at every integral point.
- (D)  $[x]$  is discontinuous at every integral point.

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

- (1) (A), (C) Only
- (2) (B), (D) Only
- (3) (B), (C) Only
- (4) (A), (D) Only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015180

Option 1 ID : 54025060717

Option 2 ID : 54025060718

Option 3 ID : 54025060719

Option 4 ID : 54025060720

Status : Not Answered

Chosen Option : --

Q.30

The value of the integral  $\int_{-1}^1 |x| dx$  is :

(1) 2

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

(3) 1

(4) 0

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015189

Option 1 ID : 54025060753

Option 2 ID : 54025060754

Option 3 ID : 54025060755

Option 4 ID : 54025060756

Status : Not Answered

Chosen Option : --

Q.31 The relation R in the set A = {1, 2, 3} given by R = {(1, 2), (2, 1)} is :

(1) Reflexive

(2) Symmetric

(3) Reflexive but not symmetric

(4) Equivalence Relation

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015201

Option 1 ID : 54025060801

Option 2 ID : 54025060802

Option 3 ID : 54025060803

Option 4 ID : 54025060804

Status : Not Answered

Chosen Option : --



Q.32 The function  $f$  is given by

$$f(x) = \begin{cases} x^3 + 3, & \text{if } x \neq 0 \\ 4, & \text{if } x = 0 \end{cases}$$

Then number of points of discontinuity for this function is :

- (1) 0
- (2) 1
- (3) 2
- (4) 3

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015202

Option 1 ID : 54025060805

Option 2 ID : 54025060806

Option 3 ID : 54025060807

Option 4 ID : 54025060808

Status : Not Answered

Chosen Option : --

Q.33 Which of the following functions satisfies Rolle's theorem ?

- (1)  $f(x) = x, x \in [1, 2]$
- (2)  $f(x) = x^2, x \in [-1, 1]$
- (3)  $f(x) = x^3, x \in [-1, 2]$
- (4)  $f(x) = x^4, x \in [0, 2]$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015203

Option 1 ID : 54025060809

Option 2 ID : 54025060810

Option 3 ID : 54025060811

Option 4 ID : 54025060812

Status : Not Answered

Chosen Option : --

**Q.34** Equation of a plane with intercept  $\sqrt{3}$  on z-axis and parallel to XOY plane is :

(1)  $x = \sqrt{3}$

(2)  $z - \sqrt{3} = 0$

(3)  $x + \sqrt{3} = 0$

(4)  $z + \sqrt{3} = 0$

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015204**

Option 1 ID : **54025060813**

Option 2 ID : **54025060814**

Option 3 ID : **54025060815**

Option 4 ID : **54025060816**

Status : **Not Answered**

Chosen Option : --

**Q.35** Two ropes are tied along the two diagonals of a cubic room. Ropes are inclined to each other at :

(1)  $45^\circ$

(2)  $30^\circ$

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

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

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015205**

Option 1 ID : **54025060817**

Option 2 ID : **54025060818**

Option 3 ID : **54025060819**

Option 4 ID : **54025060820**

Status : **Not Answered**

Chosen Option : --

Q.1

If  $A = \begin{pmatrix} -2 & 1 \\ 3 & 2 \end{pmatrix}$  and  $B' = \begin{bmatrix} -1 & 1 \\ 0 & 2 \end{bmatrix}$ , then  $(A + 2B)' =$

(1)  $\begin{bmatrix} -1 & 2 \\ 4 & 6 \end{bmatrix}$

(2)  $\begin{bmatrix} -4 & -1 \\ 5 & 6 \end{bmatrix}$

(3)  $\begin{bmatrix} -4 & 5 \\ 1 & 6 \end{bmatrix}$

(4)  $A = \begin{bmatrix} 4 & 0 \\ -5 & 4 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015213

Option 1 ID : 54025060849

Option 2 ID : 54025060850

Option 3 ID : 54025060851

Option 4 ID : 54025060852

Status : Not Answered

Chosen Option : --

Q.2 Which of the following is not a statistic ?

- (1) The mean marks of 100 students of a school of strength 2000.
- (2) The median height of 100 students in a school of strength 2000.
- (3) The mean salary of all workers of an organisation.
- (4) The mean salary of randomly selected half of all employees of an organisation.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015223

Option 1 ID : 54025060889

Option 2 ID : 54025060890

Option 3 ID : 54025060891

Option 4 ID : 54025060892

Status : Answered

Chosen Option : 3

**Q.3** If the cost function and profit function for a company is given by  $C = 10 - 0.3x^2$  and  $P = 0.3x^2 + 2x - 10$  respectively, where  $x$  represents units of output.

The revenue function is given by :

- (1)  $2x$
- (2)  $-2x$
- (3)  $20 - 0.6x^2 - 2x$
- (4) cannot be determined

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015215

Option 1 ID : 54025060857

Option 2 ID : 54025060858

Option 3 ID : 54025060859

Option 4 ID : 54025060860

Status : Answered

Chosen Option : 1

**Q.4** The maximum value of  $z = 40x + 50y$  subject to constraints

$$3x + y \leq 9$$

$$x + 2y \leq 8$$

$$x, y \geq 0$$

occurs at :

- (1) (0, 4)
- (2) (2, 3)
- (3) (3, 0)
- (4) (3, 2)

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015233

Option 1 ID : 54025060929

Option 2 ID : 54025060930

Option 3 ID : 54025060931

Option 4 ID : 54025060932

Status : Answered

Chosen Option : 1

**Q.5** The solution set of the inequality  $3x + 4y \leq 12$  is :

- (1) half plane that contains the origin excluding the points on the line  $3x + 4y = 12$
- (2) half plane that doesn't contain the origin
- (3) the entire plane excluding the points on the line  $3x + 4y = 12$
- (4) the half plane that contains the origin including the points on the line  $3x + 4y = 12$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015235

Option 1 ID : 54025060937

Option 2 ID : 54025060938

Option 3 ID : 54025060939

Option 4 ID : 54025060940

Status : Not Answered

Chosen Option : --

**Q.6** For a given data of 5 observations  $\Sigma y = 311$ ,  $\Sigma x^2 = 10$  and  $\Sigma xy = 90$ . The equation of the trend line is :

- (1)  $y_t = 62.2 + 9x$
- (2)  $y_t = 9 + 62.2x$
- (3)  $y_t = 31.1 + 18x$
- (4)  $y_t = 18 + 31.1x$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015221

Option 1 ID : 54025060881

Option 2 ID : 54025060882

Option 3 ID : 54025060883

Option 4 ID : 54025060884

Status : Answered

Chosen Option : 1

Q.7

Matrix  $A = \begin{bmatrix} 0 & a & 5 \\ 4 & b & -1 \\ c & 1 & 0 \end{bmatrix}$  is skew-symmetric, then the values of a, b, c are :

- (1)  $a = -4, b = 0, c = -5$
- (2)  $a = 4, b = 0, c = 5$
- (3)  $a = -4, b = 1, c = -5$
- (4)  $a = 4, b = 1, c = 5$

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015212

Option 1 ID : 54025060845

Option 2 ID : 54025060846

Option 3 ID : 54025060847

Option 4 ID : 54025060848

Status : Answered

Chosen Option : 1

Q.8 Jeep A and Jeep B are competing in a motor race. After starting together, Jeep B covers the target of 30 km in 30 min 04 sec. Jeep A covers the target in 30 min 01sec. By what distance will Jeep A beat Jeep B ?

- (1) 30 m
- (2) 40 m
- (3) 50 m
- (4) 60 m

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015207

Option 1 ID : 54025060825

Option 2 ID : 54025060826

Option 3 ID : 54025060827

Option 4 ID : 54025060828

Status : Marked For Review

Chosen Option : 1

**Q.9** Match List - I with List - II.

**List - I**

- (A) The probability distribution is applied for discrete random variable
- (B) A normal distribution is symmetric about :
- (C) This probability Distribution is applied for continuous random variable
- (D) The shape of normal curve depends on :

**List - II**

- (I) Normal Distribution
- (II) Standard deviation
- (III) Mean
- (IV) Poisson Distribution

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

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

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015218**

Option 1 ID : **54025060869**

Option 2 ID : **54025060870**

Option 3 ID : **54025060871**

Option 4 ID : **54025060872**

Status : **Answered**

Chosen Option : **3**

Q.10

If  $y = \log_3(\log_3 x)$ , then  $\frac{dy}{dx} =$

(1)  $\frac{1}{x \log 3x}$

(2)  $\frac{1}{x(x \log 3 + \log x)}$

(3)  $\frac{\log x}{x \log 3}$

(4)  $\frac{1}{x \log x \log 3}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015216

Option 1 ID : 54025060861

Option 2 ID : 54025060862

Option 3 ID : 54025060863

Option 4 ID : 54025060864

Status : Not Answered

Chosen Option : --



**Q.11** Out of 1000 employees, 100 have to be selected for a survey. After being arranged in the alphabetical order, each one is assigned a number from 1 to 1000. A number 4 is randomly selected and then every 10<sup>th</sup> person is selected (i.e : 4, 14, 24..)

Which form of sampling is this an example of ?

- (1) Cluster sampling
- (2) Snowball sampling
- (3) Voluntary response sampling
- (4) Systematic sampling

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015224**

Option 1 ID : **54025060893**

Option 2 ID : **54025060894**

Option 3 ID : **54025060895**

Option 4 ID : **54025060896**

Status : **Answered**

Chosen Option : **4**

**Q.12** From the following table calculate the Price Index for the year 2015, with base year 2011 :

| Year | Commodities |     |     |
|------|-------------|-----|-----|
|      | A           | B   | C   |
| 2011 | 32          | 80  | 100 |
| 2015 | 40          | 120 | 180 |

(1) 125

(2) 180

(3) 150

(4) 160

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015228**

Option 1 ID : **54025060909**

Option 2 ID : **54025060910**

Option 3 ID : **54025060911**

Option 4 ID : **54025060912**

Status : **Not Answered**

Chosen Option : **--**

**Q.13** A company produces two types of belts A and B with a Profit of ₹ 2 and ₹ 1.50 respectively. Belt Type A needs twice as much time to make as belt type B. The company can produce at the most 1000 belts of Type B per day. Material for 800 belts is available per day. At the most, 400 buckles for belt Type A, and 700 for Belt Type B, are available. Then the appropriate LPP is :

- (1)  $x + y \leq 800, x \geq 400, y \geq 700, 2x + y \leq 1000, x, y \geq 0, \max(z) = 2x + 1.5y$
- (2)  $x + y \geq 800, x \geq 400, y \geq 700, 2x + y \geq 1000, x, y \geq 0, \max(z) = 2x + 1.5y$
- (3)  $x + y \leq 800, x \leq 400, y \leq 700, 2x + y \geq 1000, x, y \geq 0, \max(z) = 2x + 1.5y$
- (4)  $x + y \leq 800, x \leq 400, y \leq 700, 2x + y \leq 1000, x, y \geq 0, \max(z) = 2x + 1.5y$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 54025015234

Option 1 ID : 54025060933

Option 2 ID : 54025060934

Option 3 ID : 54025060935

Option 4 ID : 54025060936

Status : Answered

Chosen Option : 4

**Q.14**

If  $x = at^2$  and  $y = a^3t^3$ , then  $\frac{d^2y}{dx^2}$  will be :

- (1)  $\frac{3at}{2}$
- (2)  $\frac{3}{4at}$
- (3)  $\frac{3a}{4t}$
- (4)  $\frac{3a^2t}{2}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 54025015217

Option 1 ID : 54025060865

Option 2 ID : 54025060866

Option 3 ID : 54025060867

Option 4 ID : 54025060868

Status : Answered

Chosen Option : 3

**Q.15** Match List - I with List - II. Four defective pens are mixed with 10 normal pens. Three pens are drawn one-by-one with replacement. Then the probability distribution of the number of defective pens is :

| List - I     | List - II              |
|--------------|------------------------|
| (A) $P(X=0)$ | (I) $8/343$            |
| (B) $P(X=1)$ | (II) $60/343$          |
| (C) $P(X=2)$ | (III) $125/343$        |
| (D) $P(X=3)$ | (IV) $\frac{150}{343}$ |

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015219**

Option 1 ID : **54025060873**

Option 2 ID : **54025060874**

Option 3 ID : **54025060875**

Option 4 ID : **54025060876**

Status : **Answered**

Chosen Option : **2**

**Q.16** Two inlet pipes can fill a tank in 20 minutes and 24 minutes, respectively. An outlet pipe can empty 30 litres of water per minute. If all 3 pipes working together can fill the tank in 15 minutes. The capacity of the tank is :

- (1) 120 litres
- (2) 1200 litres
- (3) 240 litres
- (4) 2400 litres

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015208**

Option 1 ID : **54025060829**

Option 2 ID : **54025060830**

Option 3 ID : **54025060831**

Option 4 ID : **54025060832**

Status : **Answered**

Chosen Option : **1**

Q.17

Evaluate :  $3^{15} \bmod (7)$

- (1) 3
- (2) 2
- (3) 6
- (4) 25

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015206

Option 1 ID : 54025060821

Option 2 ID : 54025060822

Option 3 ID : 54025060823

Option 4 ID : 54025060824

Status : Answered

Chosen Option : 3

Q.18

The increase in the sale of shawls during winters is an example of :

- (1) Trend component of time series
- (2) Cyclical component of time series
- (3) Seasonal component of time series
- (4) Irregular component of time series

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 54025015222

Option 1 ID : 54025060885

Option 2 ID : 54025060886

Option 3 ID : 54025060887

Option 4 ID : 54025060888

Status : Answered

Chosen Option : 3

**Q.19** The cost of type A cement is ₹ 100/kg and that of Type B cement is ₹ 120/kg. If both are mixed in the ratio of 2 : 3, the price of the cement mixture per kg will be :

- (1) ₹ 118
- (2) ₹ 115
- (3) ₹ 112
- (4) ₹ 110

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015209**

Option 1 ID : **54025060833**

Option 2 ID : **54025060834**

Option 3 ID : **54025060835**

Option 4 ID : **54025060836**

Status : **Answered**

Chosen Option : **3**

**Q.20** Which one of the following statements is true ?

- (1) Time reversal test is satisfied by simple aggregative method and Fisher's method
- (2) Lespeyre's method and Paasche's Methods satisfy time reversal test
- (3) Lespeyre's method and Fisher's method satisfy time reversal test
- (4) Time reversal test is satisfied by Paasche's method and simple aggregative method

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015220**

Option 1 ID : **54025060877**

Option 2 ID : **54025060878**

Option 3 ID : **54025060879**

Option 4 ID : **54025060880**

Status : **Not Answered**

Chosen Option : **--**

**Q.21** Which of the following is false about the Central Limit Theorem ?

- (1) It states that a distribution of sample Approaches a Normal Distribution.
- (2) It shows bell shaped curve.
- (3) It does not depend on the shape of population distribution.
- (4) It can be represented by using a pie-chart

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015226**

Option 1 ID : **54025060901**

Option 2 ID : **54025060902**

Option 3 ID : **54025060903**

Option 4 ID : **54025060904**

Status : **Answered**

Chosen Option : 1

**Q.22** T-Test : A t-test is a test of difference for parameter data

$$T = \frac{\bar{x}_1 - \bar{x}_2}{s_p \sqrt{\frac{1}{x_1} + \frac{1}{x_2}}}$$

Then read the following statements and choose the correct statements

- (A) The null hypothesis and the alternative hypothesis have the same view points.
- (B) In t-test; testing the significance of mean value is done, when sample size is small.
- (C) t-test for two independent groups when variance is equal
- (D) Testing is a process used by statisticians, to accept or reject the hypothesis.
- (E) If the value of test statistic is greater than the table values, we do not reject the null hypothesis

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

- (1) (B), (C) and (D) Only
- (2) (A), (B) and (D) Only
- (3) (A), (B) and (E) Only
- (4) (D), and (E) Only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015225**

Option 1 ID : **54025060897**

Option 2 ID : **54025060898**

Option 3 ID : **54025060899**

Option 4 ID : **54025060900**

Status : **Not Answered**

Chosen Option : --

**Q.23**

Let  $P = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ ,  $Q = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$  and  $R = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$ , then the matrix S such that  $QS - RP = 0$ , will be :

- (1)  $\begin{bmatrix} 16 & 8 \\ 56 & 32 \end{bmatrix}$
- (2)  $\begin{bmatrix} 3 & -14 \\ 4 & 17 \end{bmatrix}$
- (3)  $\begin{bmatrix} -1 & -13 \\ 36 & 17 \end{bmatrix}$
- (4)  $\begin{bmatrix} -191 & -110 \\ 77 & 44 \end{bmatrix}$

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015211**

Option 1 ID : **54025060841**

Option 2 ID : **54025060842**

Option 3 ID : **54025060843**

Option 4 ID : **54025060844**

Status : **Not Answered**

Chosen Option : --

**Q.24** Which of the following is NOT true ?

- (1) Sinking fund is established to set aside revenue for a future expense
- (2) Sinking funds are the same as savings account
- (3) Sinking fund is set up for a particular purpose
- (4) Sinking funds are to be used at a particular time

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015229**

Option 1 ID : **54025060913**

Option 2 ID : **54025060914**

Option 3 ID : **54025060915**

Option 4 ID : **54025060916**

Status : **Answered**

Chosen Option : 2

**Q.25** The cost of living in two different cities can be compared with the help of :

- (1) Value index
- (2) Consumer price index
- (3) Volume index
- (4) Un-weighted index

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015231**

Option 1 ID : **54025060921**

Option 2 ID : **54025060922**

Option 3 ID : **54025060923**

Option 4 ID : **54025060924**

Status : **Answered**

Chosen Option : **2**

**Q.26** Mr Jain takes a personal loan of ₹ 10,00,000 at 12% rate of interest per annum for 3 years. His EMI by flat rate method is :

- (1) ₹ 28120.77
- (2) ₹ 37777.77
- (3) ₹ 28777.77
- (4) ₹ 28888.77

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015230**

Option 1 ID : **54025060917**

Option 2 ID : **54025060918**

Option 3 ID : **54025060919**

Option 4 ID : **54025060920**

Status : **Answered**

Chosen Option : **2**



**Q.27** The corner points of the feasible region determined by a set of linear constraints are : (0, 0), (0, 4) (2, 5), (6, 3) and (6, 0), then which of the following points lie in the feasible region ?

- (1)  $(\frac{1}{2}, \frac{13}{2})$
- (2)  $(\frac{1}{2}, \frac{5}{2})$
- (3)  $(\frac{5}{2}, 5)$
- (4) (5, 5)

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015232**

Option 1 ID : **54025060925**

Option 2 ID : **54025060926**

Option 3 ID : **54025060927**

Option 4 ID : **54025060928**

Status : **Answered**

Chosen Option : **2**

**Q.28**

A monopolist's Demand Function is  $x = 70 - \frac{P}{2}$ , the revenue at  $x=5$  will be :

- (1) 650
- (2) 7000
- (3) 0
- (4) 60

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015214**

Option 1 ID : **54025060853**

Option 2 ID : **54025060854**

Option 3 ID : **54025060855**

Option 4 ID : **54025060856**

Status : **Answered**

Chosen Option : **1**

**Q.29** If a square matrix  $B$  satisfies  $B^2 = I - B$  and  $B^n = 5I - 8B$ ; then the value of  $n$  is :

- (1) 4
- (2) 6
- (3) 8
- (4) 10

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015210

Option 1 ID : 54025060837

Option 2 ID : 54025060838

Option 3 ID : 54025060839

Option 4 ID : 54025060840

Status : Not Answered

Chosen Option : --

**Q.30** A sum of ₹ 60,000 invested at  $r\%$  compounded quarterly will provide payments at ₹ 600 each at the end of every three months. Then the value of  $r$  is :

- (1) 8 %
- (2) 4 %
- (3) 2 %
- (4) 5 %

Options 1. 1

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

Question Type : MCQ

Question ID : 54025015227

Option 1 ID : 54025060905

Option 2 ID : 54025060906

Option 3 ID : 54025060907

Option 4 ID : 54025060908

Status : Answered

Chosen Option : 2

**Q.31** A motor boat can row at the speed of 12 km/h in still water. If the river is flowing at 4 km/h and it takes 12 hours for a round trip, then the distance between the two places is :

- (1) 48 km
- (2) 32 km
- (3) 64 km
- (4) 36 km

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015236**

Option 1 ID : **54025060941**

Option 2 ID : **54025060942**

Option 3 ID : **54025060943**

Option 4 ID : **54025060944**

Status : **Not Answered**

Chosen Option : --

**Q.32** The minimum value of  $f(x) = 4x^3 - 48x + 105$  in the interval  $[1, 3]$  is :

- (1) 61
- (2) 41
- (3) 32
- (4) 69

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015237**

Option 1 ID : **54025060945**

Option 2 ID : **54025060946**

Option 3 ID : **54025060947**

Option 4 ID : **54025060948**

Status : **Answered**

Chosen Option : **2**

**Q.33** If the mean of a binomial distribution is 24 and its standard deviation is 4, then the probability of getting success is :

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

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015238**

Option 1 ID : **54025060949**

Option 2 ID : **54025060950**

Option 3 ID : **54025060951**

Option 4 ID : **54025060952**

Status : **Answered**

Chosen Option : **4**

**Q.34** Consider the following hypothesis test :

$$H_0 : \mu \leq 24$$

$$H_a : \mu > 24$$

A sample of 64 provided a sample mean of 24.3. The population standard deviation is 2. The value of the test statistic is :

- (1) 1.2
- (2) 2.1
- (3) 1.3
- (4) -1.2

**Options** 1. 1

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

Question Type : **MCQ**

Question ID : **54025015239**

Option 1 ID : **54025060953**

Option 2 ID : **54025060954**

Option 3 ID : **54025060955**

Option 4 ID : **54025060956**

Status : **Not Answered**

Chosen Option : **--**

**Q.35** A vehicle has a scrap value of ₹ 7,50,000 after 6 years of its purchase. If the annual depreciation charge is ₹ 55,000, then the original cost of the vehicle is :

- (1) ₹ 12,00,000
- (2) ₹ 11,60,000
- (3) ₹ 10,80,000
- (4) ₹ 9,30,000

**Options** 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **54025015240**

Option 1 ID : **54025060957**

Option 2 ID : **54025060958**

Option 3 ID : **54025060959**

Option 4 ID : **54025060960**

Status : **Answered**

Chosen Option : **3**