

Q.1 Match List - I with List - II. Match the integrating factors :

List - I (Differential Equation)	List - II (Integrating factor)
(A) $\frac{dy}{dx} + 3y = e^{-2x}$	(I) $\frac{1}{x}$
(B) $x \frac{dy}{dx} + y = 3x^2$	(II) e^{-x}
(C) $x \frac{dy}{dx} - y = 3x^2$	(III) x
(D) $\frac{dy}{dx} - y = x$	(IV) e^{3x}

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

- (1) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
- (2) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (3) (A)-(II), (B)-(III), (C)-(IV), (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 : 21280710606

Option 1 ID : 21280742421

Option 2 ID : 21280742422

Option 3 ID : 21280742423

Option 4 ID : 21280742424

Status : Answered

Chosen Option : 1

Q.2 The area enclosed between $y^2 = 4x$, $x = 1$, $x = 4$ in first quadrant is :

(1) $\frac{28}{3}$ sq. unit

(2) $\frac{27}{2}$ sq. unit

(3) $\frac{25}{2}$ sq. unit

(4) $\frac{27}{5}$ sq. unit

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710604

Option 1 ID : 21280742413

Option 2 ID : 21280742414

Option 3 ID : 21280742415

Option 4 ID : 21280742416

Status : Answered

Chosen Option : 1

Q.3 If the probability distribution of a random variable X is as given below :

X	-1	0	1	2	3
P(X)	K	$\frac{1}{5}$	2K	$\frac{3}{10}$	K

Then the value of K is :

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

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

(3) $\frac{5}{8}$

(4) $\frac{1}{8}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710608

Option 1 ID : 21280742429

Option 2 ID : 21280742430

Option 3 ID : 21280742431

Option 4 ID : 21280742432

Status : Answered

Chosen Option : 4

Q.4 The sum of the products of elements of any row with the cofactors of corresponding elements is equal to :

(1) the value of the determinant

(2) 0

(3) sum of cofactors

(4) adjoint of matrix

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710598

Option 1 ID : 21280742389

Option 2 ID : 21280742390

Option 3 ID : 21280742391

Option 4 ID : 21280742392

Status : Answered

Chosen Option : 1

Q.5

If $\begin{vmatrix} 3x & 4 \\ 7 & x \end{vmatrix} = \begin{vmatrix} 6 & 3 \\ 2 & 1 \end{vmatrix}$ then :

(1) $x^2 = \frac{26}{3}$

(2) $x^2 = \frac{25}{3}$

(3) $x^2 = \frac{23}{3}$

(4) $x^2 = \frac{28}{3}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710599

Option 1 ID : 21280742393

Option 2 ID : 21280742394

Option 3 ID : 21280742395

Option 4 ID : 21280742396

Status : Answered

Chosen Option : 4

Q.6 If order of matrix A is $m \times p$ and order of matrix B is $p \times n$, then what is the order of matrix AB ?

(1) $m \times p$

(2) $m \times n$

(3) $p \times n$

(4) $m \times 2$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710597

Option 1 ID : 21280742385

Option 2 ID : 21280742386

Option 3 ID : 21280742387

Option 4 ID : 21280742388

Status : Answered

Chosen Option : 2

Q.7 If m and n are respectively the order and degree of the differential equation :

$$\left(\frac{d^2y}{dx^2}\right)^5 + 6 \frac{\left(\frac{d^2y}{dx^2}\right)^3}{\frac{d^3y}{dx^3}} + \frac{d^3y}{dx^3} = x^2 + 5, \text{ then :}$$

- (1) m = 3, n = 3
- (2) m = 2, n = 3
- (3) m = 3, n = 2
- (4) m = 3, n = 5

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710605**

Option 1 ID : **21280742417**

Option 2 ID : **21280742418**

Option 3 ID : **21280742419**

Option 4 ID : **21280742420**

Status : **Answered**

Chosen Option : **3**

Q.8 In a Linear Programming problem, the objective function is always :

- (1) Linear
- (2) Quadratic
- (3) Cubic
- (4) Biquadratic

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710609**

Option 1 ID : **21280742433**

Option 2 ID : **21280742434**

Option 3 ID : **21280742435**

Option 4 ID : **21280742436**

Status : **Marked For Review**

Chosen Option : **1**

Q.9

If $x = a\left(t - \frac{1}{t}\right)$, $y = b\left(t + \frac{1}{t}\right)$, then $\frac{dy}{dx} =$

(1) $\frac{x}{y}$

(2) $\frac{b^2x}{a^2y}$

(3) $\frac{bx}{ay}$

(4) $\frac{a^2y}{b^2x}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710600

Option 1 ID : 21280742397

Option 2 ID : 21280742398

Option 3 ID : 21280742399

Option 4 ID : 21280742400

Status : Marked For Review

Chosen Option : 3

Q.10

$\int \left(x + \frac{1}{x}\right)^2 dx$ equals :

(1) $\frac{x^3}{3} + \frac{1}{x} - 2x + c$

(2) $\frac{x^3}{3} - \frac{1}{x} + 2x + c$

(3) $\frac{x^3}{3} - \frac{1}{x} - 2x + c$

(4) $\frac{x^3}{3} + \frac{1}{x} + 2x + c$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710603

Option 1 ID : 21280742409

Option 2 ID : 21280742410

Option 3 ID : 21280742411

Option 4 ID : 21280742412

Status : Answered

Chosen Option : 2

Q.11 If the function $f(x) = x^4 - 62x^2 + ax + 9$ attains its local maximum value at $x=1$, then a is equal to :

(1) 120

(2) 110

(3) 100

(4) 90

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710602

Option 1 ID : 21280742405

Option 2 ID : 21280742406

Option 3 ID : 21280742407

Option 4 ID : 21280742408

Status : Answered

Chosen Option : 1

Q.12

Given $A = \begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} x & y \\ 1 & 4 \end{bmatrix}$, If $A = B$, then x and y are :

- (1) $x = 2$
 $y = 3$
- (2) $x = 1$
 $y = 2$
- (3) $x = 3$
 $y = 2$
- (4) $x = -2$
 $y = -3$

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710596

Option 1 ID : 21280742381

Option 2 ID : 21280742382

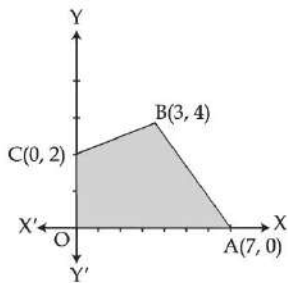
Option 3 ID : 21280742383

Option 4 ID : 21280742384

Status : Answered

Chosen Option : 1

Q.13 The feasible region for a LPP is shown in the given figure. The maximum value of $z = 2x + 5y$ is :



- (1) 14
- (2) 10
- (3) 36
- (4) 26

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710610

Option 1 ID : 21280742437

Option 2 ID : 21280742438

Option 3 ID : 21280742439

Option 4 ID : 21280742440

Status : Answered

Chosen Option : 4

Q.14 The mean number of heads in two tosses of a coin is :

(1) 2

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

(3) 1

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710607

Option 1 ID : 21280742425

Option 2 ID : 21280742426

Option 3 ID : 21280742427

Option 4 ID : 21280742428

Status : Answered

Chosen Option : 3

Q.15 The slope of the tangent to the curve $x = at^2$, $y = 2at$ at 't' is :

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

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

(3) $-\frac{1}{t}$

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710601

Option 1 ID : 21280742401

Option 2 ID : 21280742402

Option 3 ID : 21280742403

Option 4 ID : 21280742404

Status : Answered

Chosen Option : 1

Q.1 The area enclosed between the curve $y = x^2 + 2$ and x -axis between $x=0$ and $x=3$ is :

- (1) 14 sq. units
- (2) 15 sq. units
- (3) 16 sq. units
- (4) 18 sq. units

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710629**

Option 1 ID : **21280742513**

Option 2 ID : **21280742514**

Option 3 ID : **21280742515**

Option 4 ID : **21280742516**

Status : **Not Answered**

Chosen Option : --

Q.2 Let $a \leq \tan^{-1}x + \cot^{-1}x + \sin^{-1}x \leq b$. If α and β denote the minimum and maximum possible values of a and b respectively, then :

- (1) $\alpha = 0, \beta = \pi$
- (2) $\alpha = 0, \beta = \frac{\pi}{2}$
- (3) $\alpha = \frac{\pi}{2}, \beta = \pi$
- (4) $\alpha = -\frac{\pi}{2}, \beta = \frac{\pi}{2}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710614**

Option 1 ID : **21280742453**

Option 2 ID : **21280742454**

Option 3 ID : **21280742455**

Option 4 ID : **21280742456**

Status : **Answered**

Chosen Option : 1

Q.3 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 $p, q > 0$
condition on p and q so that 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 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710637

Option 1 ID : 21280742545

Option 2 ID : 21280742546

Option 3 ID : 21280742547

Option 4 ID : 21280742548

Status : Answered

Chosen Option : 4

Q.4 The two curves $x^3 - 3xy^2 + 15 = 0$ and $3x^2y - y^3 + 17 = 0$:

- (1) cut at right angles
- (2) touch each other
- (3) cut at an angle $\frac{\pi}{4}$
- (4) cut at an angle $\frac{\pi}{3}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710626

Option 1 ID : 21280742501

Option 2 ID : 21280742502

Option 3 ID : 21280742503

Option 4 ID : 21280742504

Status : Not Answered

Chosen Option : --

Q.5 The angle between the two planes $x + y - z = 3$ and $3x + 2y + z = 5$ is :

- (1) $\cos^{-1} 4$
- (2) $\cos^{-1} \frac{2\sqrt{42}}{21}$
- (3) $\cos^{-1} \frac{1}{4}$
- (4) $\cos^{-1} \frac{1}{\sqrt{42}}$

Options

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

Question Type : **MCQ**

Question ID : **21280710635**

Option 1 ID : **21280742537**

Option 2 ID : **21280742538**

Option 3 ID : **21280742539**

Option 4 ID : **21280742540**

Status : **Not Answered**

Chosen Option : --

Q.6 Area of the region bounded by the curve $y = \cos x$ and x -axis between $x = 0$ and $x = \pi$ is :

- (1) 2 sq. units
- (2) 3 sq. units
- (3) 4 sq. units
- (4) 1 sq. unit

Options

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

Question Type : **MCQ**

Question ID : **21280710630**

Option 1 ID : **21280742517**

Option 2 ID : **21280742518**

Option 3 ID : **21280742519**

Option 4 ID : **21280742520**

Status : **Not Answered**

Chosen Option : --

Q.7

If $f(x) = \begin{cases} \frac{k \cos x}{\pi - 2x}, & x \neq \frac{\pi}{2} \\ 3, & x = \frac{\pi}{2} \end{cases}$ is continuous at $x = \frac{\pi}{2}$, then k is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710621

Option 1 ID : 21280742481

Option 2 ID : 21280742482

Option 3 ID : 21280742483

Option 4 ID : 21280742484

Status : Answered

Chosen Option : 3

Q.8

Let $A = \begin{bmatrix} 1 & -2 & 3 \\ 1 & 2 & 1 \\ \lambda & 2 & -3 \end{bmatrix}$. If A^{-1} does not exist, then $\lambda =$

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710619

Option 1 ID : 21280742473

Option 2 ID : 21280742474

Option 3 ID : 21280742475

Option 4 ID : 21280742476

Status : Answered

Chosen Option : 3

Q.9 The maximum value of $(\sin x)(\cos x)$ is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710624

Option 1 ID : 21280742493

Option 2 ID : 21280742494

Option 3 ID : 21280742495

Option 4 ID : 21280742496

Status : Answered

Chosen Option : 2

Q.10

If matrix $A = \begin{bmatrix} 3 & x \\ y & 0 \end{bmatrix}$ and $A' = A$, then :

- (1) $x = y$
- (2) $x = 0, y = 3$
- (3) $x = 3, y = 0$
- (4) $x + y = 3$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710615

Option 1 ID : 21280742457

Option 2 ID : 21280742458

Option 3 ID : 21280742459

Option 4 ID : 21280742460

Status : Answered

Chosen Option : 1

Q.11

If $\sin^{-1}x + \sin^{-1}y = \frac{2\pi}{3}$, then the value of $\cos^{-1}x + \cos^{-1}y$ is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710613

Option 1 ID : 21280742449

Option 2 ID : 21280742450

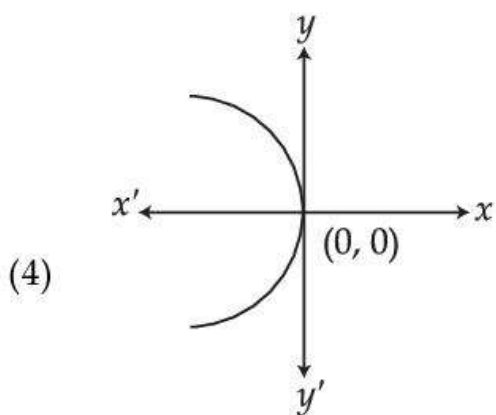
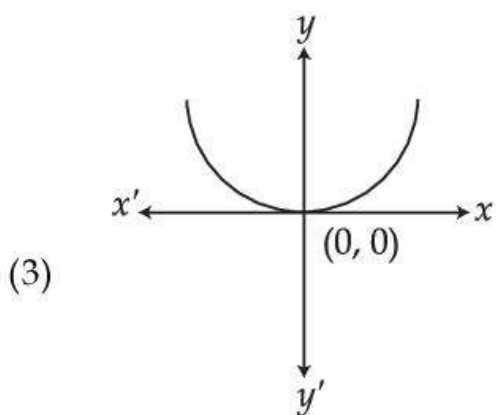
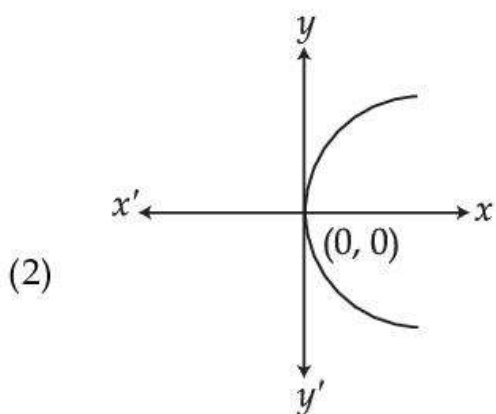
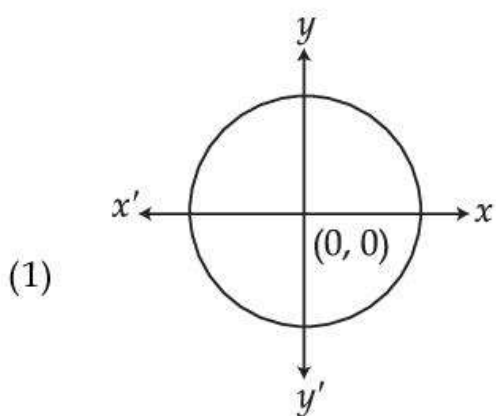
Option 3 ID : 21280742451

Option 4 ID : 21280742452

Status : Not Answered

Chosen Option : --

Q.12 Which of the following graphs represent a function ?



3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710611**

Option 1 ID : **21280742441**

Option 2 ID : **21280742442**

Option 3 ID : **21280742443**

Option 4 ID : **21280742444**

Status : **Answered**

Chosen Option : **1**

Q.13 The degree of the differential equation

$$\left[1 + \left(\frac{dy}{dx}\right)\right]^3 = \left(\frac{d^2y}{dx^2}\right)^2 \text{ is :}$$

(1) 1

(2) 2

(3) 3

(4) 4

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710631**

Option 1 ID : **21280742521**

Option 2 ID : **21280742522**

Option 3 ID : **21280742523**

Option 4 ID : **21280742524**

Status : **Answered**

Chosen Option : **2**

Q.14 The vector equation of the line joining the points $(-2, -3, -4)$ and $(1, -2, 4)$ is :

(1) $\vec{r} = (-2\hat{i} - 3\hat{j} - 4\hat{k}) + \lambda (\hat{i} - 2\hat{j} + 4\hat{k})$

(2) $\vec{r} = (2\hat{i} + 3\hat{j} + 4\hat{k}) + \lambda (3\hat{i} - \hat{j} + 8\hat{k})$

(3) $\vec{r} = (-2\hat{i} - 3\hat{j} - 4\hat{k}) + \lambda (3\hat{i} + \hat{j} + 8\hat{k})$

(4) $\vec{r} = (2\hat{i} + 3\hat{j} + 4\hat{k}) + \lambda (3\hat{i} + \hat{j} + 8\hat{k})$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710636

Option 1 ID : 21280742541

Option 2 ID : 21280742542

Option 3 ID : 21280742543

Option 4 ID : 21280742544

Status : Answered

Chosen Option : 3

Q.15

If a, b and c are all different from zero and $\begin{vmatrix} 1+a & 1 & 1 \\ 1 & 1+b & 1 \\ 1 & 1 & 1+c \end{vmatrix} = 0$, then the value of $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$

is :

(1) 0

(2) abc

(3) -1

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710620

Option 1 ID : 21280742477

Option 2 ID : 21280742478

Option 3 ID : 21280742479

Option 4 ID : 21280742480

Status : Not Answered

Chosen Option : --

Q.16

If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, then $A^2 - 5A + 7I =$

- (1) O
- (2) I
- (3) $2I$
- (4) $3I$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710617

Option 1 ID : 21280742465

Option 2 ID : 21280742466

Option 3 ID : 21280742467

Option 4 ID : 21280742468

Status : Answered

Chosen Option : 1

Q.17 Solution of differential equation $xdy - ydx = 0$ represents :

- (1) family of straight lines passing through origin
- (2) family of parabolas whose vertex is at origin
- (3) family of circles whose centre is at origin
- (4) family of straight lines passing through (1, 1)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710632

Option 1 ID : 21280742525

Option 2 ID : 21280742526

Option 3 ID : 21280742527

Option 4 ID : 21280742528

Status : Answered

Chosen Option : 1

Q.18

If $A = \begin{bmatrix} 1 & -2 & 3 \\ -4 & 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -2 \\ 3 & -4 \\ 2 & 4 \end{bmatrix}$ then product AB is :

(1) Not possible

(2) $\begin{bmatrix} 1 & -6 & 6 \\ 8 & -8 & 16 \end{bmatrix}$

(3) $\begin{bmatrix} 9 \\ 19 \\ 15 \end{bmatrix}$

(4) $\begin{bmatrix} 1 & 18 \\ 10 & 16 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710616

Option 1 ID : 21280742461

Option 2 ID : 21280742462

Option 3 ID : 21280742463

Option 4 ID : 21280742464

Status : Answered

Chosen Option : 4

Q.19

If $|\vec{a}| = 3$ and $|\vec{b}| = 4$, then a value of λ for which $\vec{a} + \lambda\vec{b}$ and $\vec{a} - \lambda\vec{b}$ are perpendicular is :

- (1) $\frac{9}{16}$
- (2) $\frac{3}{4}$
- (3) $\frac{3}{2}$
- (4) $\frac{4}{3}$

Options 1. 1

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

Question Type : **MCQ**

Question ID : **21280710634**

Option 1 ID : **21280742533**

Option 2 ID : **21280742534**

Option 3 ID : **21280742535**

Option 4 ID : **21280742536**

Status : **Answered**

Chosen Option : **2**

Q.20

The variance of number of heads in three tosses of a coin is :

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

Options 1. 1

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

Question Type : **MCQ**

Question ID : **21280710640**

Option 1 ID : **21280742557**

Option 2 ID : **21280742558**

Option 3 ID : **21280742559**

Option 4 ID : **21280742560**

Status : **Not Answered**

Chosen Option : **--**

Q.21 Relation R on Real Numbers is defined as $R = \{(a, b) : a \leq b\}$.

The relation is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710612

Option 1 ID : 21280742445

Option 2 ID : 21280742446

Option 3 ID : 21280742447

Option 4 ID : 21280742448

Status : Answered

Chosen Option : 3

Q.22 If A and B are invertible matrices of order 3, $|A|=2$ and $|(AB)^{-1}| = -\frac{1}{6}$, then the value of $|B|$ is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710618

Option 1 ID : 21280742469

Option 2 ID : 21280742470

Option 3 ID : 21280742471

Option 4 ID : 21280742472

Status : Answered

Chosen Option : 2

Q.23

The derivative of $\sec(\tan\sqrt{x})$ with respect to x is :

(1) $\frac{\sec(\tan\sqrt{x})\tan(\tan\sqrt{x})\sec^2\sqrt{x}}{2\sqrt{x}}$

(2) $\sec^2(\tan\sqrt{x})$

(3) $\frac{\sec(\tan\sqrt{x})\tan(\tan\sqrt{x})\sec^2\sqrt{x}}{x}$

(4) $\sec^2(\tan x^{1/3})$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710623

Option 1 ID : 21280742489

Option 2 ID : 21280742490

Option 3 ID : 21280742491

Option 4 ID : 21280742492

Status : Answered

Chosen Option : 1

Q.24

The corner points of the feasible region determined by the system of linear constraints are $(0, 0)$, $(0, 40)$, $(20, 40)$, $(60, 20)$, $(60, 0)$. The objective function is $z = 4x + 3y$.

Compare the quantity in Column - A and Column - B.

Column - A
Maximum value of z

Column - B
350

- (1) The quantity in column A is greater
- (2) The quantity in column B is greater
- (3) The two quantities are equal
- (4) The quantity in column B is greater than twice the quantity in column A

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710638

Option 1 ID : 21280742549

Option 2 ID : 21280742550

Option 3 ID : 21280742551

Option 4 ID : 21280742552

Status : Answered

Chosen Option : 2

Q.25 The interval in which the function $f(x) = 2x^3 - 3x^2 - 36x + 7$ is strictly decreasing is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710625**

Option 1 ID : **21280742497**

Option 2 ID : **21280742498**

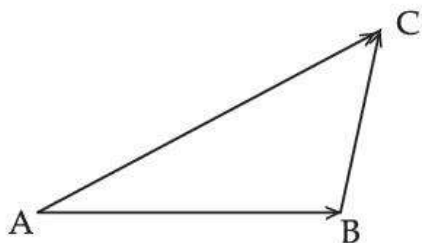
Option 3 ID : **21280742499**

Option 4 ID : **21280742500**

Status : **Answered**

Chosen Option : **2**

Q.26 In $\triangle ABC$:



(A) $\vec{AB} + \vec{BC} + \vec{CA} = \vec{O}$

(B) $\vec{AB} + \vec{BC} - \vec{AC} = \vec{O}$

(C) $\vec{AB} + \vec{BC} - \vec{CA} = \vec{O}$

(D) $\vec{AB} - \vec{CB} + \vec{CA} = \vec{O}$

(E) $\vec{AB} - \vec{CB} - \vec{CA} = \vec{O}$

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

- (1) (A), (B), (D) only
- (2) (A), (B), (E) only
- (3) (B), (E) only
- (4) (A), (D), (E) only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710633

Option 1 ID : 21280742529

Option 2 ID : 21280742530

Option 3 ID : 21280742531

Option 4 ID : 21280742532

Status : Answered

Chosen Option : 1

Q.27 Which of the following statements are correct ?

- (A) If $f: \mathbb{R} \rightarrow \mathbb{R}$ then $f(x) = |x|$ is continuous everywhere.
- (B) If $f: \mathbb{R} \rightarrow \mathbb{R}$ then $f(x) = |x|$ is continuous everywhere but not differentiable at $x = 0$.
- (C) Let $f: \mathbb{R} - \{0\} \rightarrow \mathbb{R}$ then $f(x) = \frac{1}{x}$ is continuous everywhere.
- (D) Let $f: \mathbb{R} \rightarrow \mathbb{R}$ then $f(x) = |x - 1| + |x - 2|$ is continuous everywhere but not differentiable at exactly 2 points.
- (E) If $f: \mathbb{R} \rightarrow \mathbb{R}$ then $f(x) = \cot x$ is continuous everywhere.

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710622

Option 1 ID : 21280742485

Option 2 ID : 21280742486

Option 3 ID : 21280742487

Option 4 ID : 21280742488

Status : Answered

Chosen Option : 3

Q.28

$\int \frac{\sqrt{\tan x}}{\sin x \cos x} dx$ equals :

(1) $2\sqrt{\tan x} + c$

(2) $2\sqrt{\cot x} + c$

(3) $\sqrt{\tan x} + c$

(4) $\frac{2}{\sqrt{\tan x}} + c$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710628

Option 1 ID : 21280742509

Option 2 ID : 21280742510

Option 3 ID : 21280742511

Option 4 ID : 21280742512

Status : Not Answered

Chosen Option : --

Q.29 Match List - I with List - II.

List - I

- (A) If A and B are mutually exclusive events,
then $P(A \cup B) =$
- (B) If A and B are independent events, then $P(A \cap B) =$
- (C) If A and B are two events of a sample space
of an experiment, then $P(A/B) =$
- (D) If A and B are two events of a sample space
of an experiment, then $P(B/A) =$

List - II

- (I) $\frac{P(A \cap B)}{P(B)}, P(B) \neq 0$
- (II) $\frac{P(A \cap B)}{P(A)}, P(A) \neq 0$
- (III) $P(A) \cdot P(B)$
- (IV) $P(A) + P(B)$

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

- (1) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
- (2) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (3) (A)-(II), (B)-(III), (C)-(IV), (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 : **21280710639**

Option 1 ID : **21280742553**

Option 2 ID : **21280742554**

Option 3 ID : **21280742555**

Option 4 ID : **21280742556**

Status : **Answered**

Chosen Option : **1**

Q.30 $\int e^x \sec x(1 + \tan x) dx$ equals :

- (1) $e^x \sec x + c$
- (2) $e^x \tan x + c$
- (3) $e^x \sin x + c$
- (4) $e^x \cos x + c$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710627**

Option 1 ID : **21280742505**

Option 2 ID : **21280742506**

Option 3 ID : **21280742507**

Option 4 ID : **21280742508**

Status : **Answered**

Chosen Option : **1**

Q.31 If a set P contains 5 elements and the set Q contains 8 elements, then the number of one-one functions from A to B is :

- (1) 8C_5
- (2) ${}^8C_5 \times 5!$
- (3) 5^8
- (4) 8^5

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710641**

Option 1 ID : **21280742561**

Option 2 ID : **21280742562**

Option 3 ID : **21280742563**

Option 4 ID : **21280742564**

Status : **Answered**

Chosen Option : **2**

Q.32 The equation of tangent to the curve given by $x = a \sin^3 t$, $y = b \cos^3 t$ at a point where $t = \frac{\pi}{2}$ is :

- (1) $x = 0$
- (2) $y = 0$
- (3) $y = \frac{\pi}{2}$
- (4) $x = \frac{\pi}{2}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710642**

Option 1 ID : **21280742565**

Option 2 ID : **21280742566**

Option 3 ID : **21280742567**

Option 4 ID : **21280742568**

Status : **Answered**

Chosen Option : **2**

Q.33 The rate of change in area of a triangle having sides 10 cm and 12 cm when the variable angle between them is $\theta = 60^\circ$, is :

- (1) $30 \text{ cm}^2/\text{radian}$
- (2) $120 \text{ cm}^2/\text{radian}$
- (3) $30\sqrt{3} \text{ cm}^2/\text{radian}$
- (4) $60\sqrt{3} \text{ cm}^2/\text{radian}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 21280710643

Option 1 ID : 21280742569

Option 2 ID : 21280742570

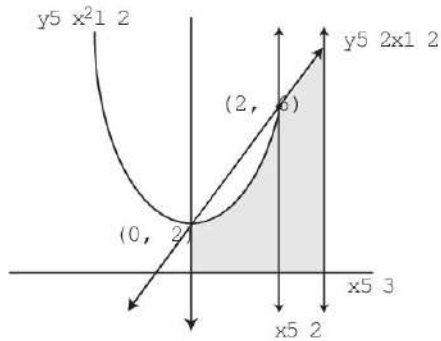
Option 3 ID : 21280742571

Option 4 ID : 21280742572

Status : Not Answered

Chosen Option : --

Q.34 Which of the following regions will represent the shaded area in the given figure ?



- (1) $\{(x, y) : 0 \leq y \leq x^2 + 2, 0 \leq y \leq 2x + 2, 0 \leq x \leq 3\}$
- (2) $\{(x, y) : 0 \leq y \leq x^2 + 2, y \geq 2x + 2, x \leq 3\}$
- (3) $\{(x, y) : y \geq x^2 + 2, x \leq 2, x \geq 0\}$
- (4) $\{(x, y) : y \geq x^2 + 2, x \geq 0, x \geq 3\}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 21280710644

Option 1 ID : 21280742573

Option 2 ID : 21280742574

Option 3 ID : 21280742575

Option 4 ID : 21280742576

Status : Answered

Chosen Option : 1

Q.35 If the equation of a floor of a room is given by $x + y - z + 4 = 0$ and the equation of roof is given by $x + y - z + 5 = 0$. Then, the height of the room is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710645

Option 1 ID : 21280742577

Option 2 ID : 21280742578

Option 3 ID : 21280742579

Option 4 ID : 21280742580

Status : Not Answered

Chosen Option : --

Section : Applied Mathematics

Q.1 A container contains 50 litres of milk. From this container 10 litres of milk was taken out and replaced by water. This process is repeated two more times. How much milk is now left in the container ?

- (1) 25.6 litres
- (2) 25 litres
- (3) 26.5 litres
- (4) 20.6 litres

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710646

Option 1 ID : 21280742581

Option 2 ID : 21280742582

Option 3 ID : 21280742583

Option 4 ID : 21280742584

Status : Not Answered

Chosen Option : --

Q.2 Which of the following statements are correct ?

(A) $\text{var}(aX + b) = a^2 \text{var}(X)$

(B) $\text{var}(X) = E(X^2) - \{E(X)\}^2$

(C) $E(aX + b) = aE(X) + b$

(D) $E(X) = \sum_{i=1}^n p_i x_i^2$

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

(1) (A), (C) Only

(2) (A), (B) Only

(3) (A), (B), (C) Only

(4) (A), (C), (D) Only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710664

Option 1 ID : 21280742653

Option 2 ID : 21280742654

Option 3 ID : 21280742655

Option 4 ID : 21280742656

Status : Not Answered

Chosen Option : --

Q.3 Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined such that

$$f(x) = 16x^2 - 16x + 12$$

- (A) Maximum value of $f(x)$ is 8
- (B) Minimum value of $f(x)$ is 8
- (C) Minimum value of $f(x)$ is 16
- (D) No maximum value of $f(x)$

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710663

Option 1 ID : 21280742649

Option 2 ID : 21280742650

Option 3 ID : 21280742651

Option 4 ID : 21280742652

Status : Not Answered

Chosen Option : --

Q.4 The objective function $z = 4x + 3y$ can be maximised subject to the constraints $3x + 4y \leq 24$, $8x + 6y \leq 48$, $x \leq 5$, $y \leq 6$, $x \geq 0$, $y \geq 0$:

- (1) at one point only
- (2) at two points only
- (3) at an infinite number of points
- (4) no point exists

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710674

Option 1 ID : 21280742693

Option 2 ID : 21280742694

Option 3 ID : 21280742695

Option 4 ID : 21280742696

Status : Not Answered

Chosen Option : --

Q.5 The effective rate that is equivalent to a nominal rate of 12% compounded quarterly is :

- (1) 10.55%
- (2) 12.55%
- (3) 12.25%
- (4) 11.55%

Options 1. 1

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

Question Type : **MCQ**

Question ID : **21280710669**

Option 1 ID : **21280742673**

Option 2 ID : **21280742674**

Option 3 ID : **21280742675**

Option 4 ID : **21280742676**

Status : **Not Answered**

Chosen Option : --

Q.6 Using simple average of relatives method, the price index for 2011, taking 2001 as base year, was found to be 127. If $\sum p_0 = 263$, then x and y from the following data are :

Commodities	A	B	C	D	E	F
Prices (in ₹) in 2001	80	70	x	20	18	25
Prices (in ₹) in 2011	100	87.50	61	22	y	32.50

- (1) $x = 50, y = 27$
- (2) $x = 50, y = 50$
- (3) $x = 27, y = 50$
- (4) $x = 27, y = 27$

Options 1. 1

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

Question Type : **MCQ**

Question ID : **21280710665**

Option 1 ID : **21280742657**

Option 2 ID : **21280742658**

Option 3 ID : **21280742659**

Option 4 ID : **21280742660**

Status : **Not Answered**

Chosen Option : --

Q.7

If $x^3 + y^3 = xy$, then $\frac{dy}{dx}$ is equal to :

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

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

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710654

Option 1 ID : 21280742613

Option 2 ID : 21280742614

Option 3 ID : 21280742615

Option 4 ID : 21280742616

Status : Not Answered

Chosen Option : --

Q.8 The set of positive integers less than 50 forming the equivalence class of 6 modulo 9 is given by :

- (1) $[6] = \{6, 15, 24, 33, 42, 50\}$
- (2) $[6] = \{6, 15, 24, 33, 42\}$
- (3) $[6] = \{6, 15, 24, 33\}$
- (4) $[6] = \{6, 15, 24\}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710647

Option 1 ID : 21280742585

Option 2 ID : 21280742586

Option 3 ID : 21280742587

Option 4 ID : 21280742588

Status : Not Answered

Chosen Option : --

Q.9 A company has issued a bond having a face value of ₹ 10,000 paying annual dividends at 8.5%. The bond will be redeemed at par at the end of 10 years, then the purchase price of this bond if the investor wishes a yield rate of 8% is : [Given $(1.08)^{-10} = 0.46319349$]

- (1) ₹ 10,555.50
- (2) ₹ 10,535.50
- (3) ₹ 10,333.33
- (4) ₹ 10,335.50

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710670

Option 1 ID : 21280742677

Option 2 ID : 21280742678

Option 3 ID : 21280742679

Option 4 ID : 21280742680

Status : Not Answered

Chosen Option : --

Q.10 $5^{100} \pmod{9} =$

(1) 4

(2) 2

(3) 1

(4) 0

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710649

Option 1 ID : 21280742593

Option 2 ID : 21280742594

Option 3 ID : 21280742595

Option 4 ID : 21280742596

Status : Not Answered

Chosen Option : --

Q.11

If $-\frac{1}{3x-5} \leq 0$, then :

(1) $x > \frac{5}{3}$

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

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

(4) $x \leq \frac{5}{3}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710648

Option 1 ID : 21280742589

Option 2 ID : 21280742590

Option 3 ID : 21280742591

Option 4 ID : 21280742592

Status : Not Answered

Chosen Option : --

Q.12 The minimum value of $ax + by$, where $xy = c^2$ and a, b, c are positive, is :

(1) $2b\sqrt{ac}$

(2) $2a\sqrt{bc}$

(3) $2c\sqrt{ab}$

(4) $2\sqrt{abc}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710651

Option 1 ID : 21280742601

Option 2 ID : 21280742602

Option 3 ID : 21280742603

Option 4 ID : 21280742604

Status : Not Answered

Chosen Option : --

Q.13 The present value of a perpetuity of ₹ 6,240 payable at the beginning of each year, if money is worth 10% effective, is :

- (1) ₹ 66,640
- (2) ₹ 68,640
- (3) ₹ 69,640
- (4) ₹ 67,640

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710672

Option 1 ID : 21280742685

Option 2 ID : 21280742686

Option 3 ID : 21280742687

Option 4 ID : 21280742688

Status : Not Answered

Chosen Option : --

Q.14 An asset costing ₹ 50,000 has a useful life of 4 years. The estimated scrap value is ₹ 10,000. By using linear depreciation method, the book value at the end of the second year is :

- (1) ₹ 30,000
- (2) ₹ 40,000
- (3) ₹ 20,000
- (4) ₹ 10,000

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710668

Option 1 ID : 21280742669

Option 2 ID : 21280742670

Option 3 ID : 21280742671

Option 4 ID : 21280742672

Status : Not Answered

Chosen Option : --

Q.15 Mr. Ram took a loan of ₹ 4,00,000 at 10% annual interest rate and paid ₹ 20,000 as monthly instalment under flat rate system. What is the term of the loan ?

- (1) 5 years
- (2) 4 years
- (3) 3 years
- (4) 2 years

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710666

Option 1 ID : 21280742661

Option 2 ID : 21280742662

Option 3 ID : 21280742663

Option 4 ID : 21280742664

Status : Not Answered

Chosen Option : --

Q.16 Pipes A and B can fill a tank in 5 hours and 6 hours respectively. Another Pipe can empty the full tank in 30 hours. If all three pipes are opened together, then the tank will be filled in :

- (1) 160 minutes
- (2) 180 minutes
- (3) 150 minutes
- (4) 140 minutes

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710661

Option 1 ID : 21280742641

Option 2 ID : 21280742642

Option 3 ID : 21280742643

Option 4 ID : 21280742644

Status : Not Answered

Chosen Option : --

Q.17 The demand function of a monopolist is given by $p = 1500 - 2x - x^2$, then value of marginal revenue when $x = 20$ is :

- (1) 220
- (2) 200
- (3) 240
- (4) 280

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710655

Option 1 ID : 21280742617

Option 2 ID : 21280742618

Option 3 ID : 21280742619

Option 4 ID : 21280742620

Status : Not Answered

Chosen Option : --

Q.18 Match List - I with List - II.

Given that $\sum p_0 q_0 = 150$, $\sum p_0 q_1 = 80$, $\sum p_1 q_0 = 240$, $\sum p_1 q_1 = 200$.

List - I

List - II

- | | |
|--------------------------|-----------|
| (A) Laspeyre's index | (I) 160 |
| (B) Paasche's index | (II) 200 |
| (C) Fesher's index | (III) 205 |
| (D) Dorbish and Bowley's | (IV) 250 |

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

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

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710662

Option 1 ID : 21280742645

Option 2 ID : 21280742646

Option 3 ID : 21280742647

Option 4 ID : 21280742648

Status : Not Answered

Chosen Option : --

Q.19 Match List - I with List - II.

List - I

(Functions)

(A) $f(x) = -x^2, x \in (-\infty, \infty)$

(B) $f(x) = -x^2 + 1, x \in (-\infty, \infty)$

(C) $f(x) = x + 1, x \in [0, 6]$

(D) $f(x) = x^3, x \in [0, 2]$

List - II

(Maximum value)

(I) 8

(II) 7

(III) 1

(IV) 0

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

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

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

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710650**

Option 1 ID : **21280742597**

Option 2 ID : **21280742598**

Option 3 ID : **21280742599**

Option 4 ID : **21280742600**

Status : **Not Answered**

Chosen Option : --

Q.20 Rahul can run 34.4 m in the given time as Amit runs 50 m. By how much distance Rahul is away from Amit at the winning point, in a two km race ?

(1) 602 m

(2) 620 m

(3) 642 m

(4) 624 m

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710660**

Option 1 ID : **21280742637**

Option 2 ID : **21280742638**

Option 3 ID : **21280742639**

Option 4 ID : **21280742640**

Status : **Not Answered**

Chosen Option : --

Q.21 The present value of a perpetuity of ₹ 2,500 payable at the end of each year, if money is worth 10% compounded annually, is :

- (1) ₹ 25,000
- (2) ₹ 50,000
- (3) ₹ 1,00,000
- (4) ₹ 2,50,000

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710673

Option 1 ID : 21280742689

Option 2 ID : 21280742690

Option 3 ID : 21280742691

Option 4 ID : 21280742692

Status : Not Answered

Chosen Option : --

Q.22

If the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies the equation $A^T A = I_3$, then $x^2 + y^2 + z^2$ is :

- (1) 0
- (2) 1
- (3) 2
- (4) 6

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710652

Option 1 ID : 21280742605

Option 2 ID : 21280742606

Option 3 ID : 21280742607

Option 4 ID : 21280742608

Status : Not Answered

Chosen Option : --

Q.23 Corner points of the feasible region for an LPP are : (0, 2), (3, 0), (6, 0), (6, 8) and (0, 5). Let $z = 4x + 6y$ be the objective function. Then, Max z – Min z is equal to :

- (1) 70
- (2) 72
- (3) 60
- (4) 62

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710675

Option 1 ID : 21280742697

Option 2 ID : 21280742698

Option 3 ID : 21280742699

Option 4 ID : 21280742700

Status : Not Answered

Chosen Option : --

Q.24 The EMI (in ₹) under the flat rate on a loan of ₹ 6,00,000 with 20% annual interest for 5 years is :

- (1) ₹ 5,000
- (2) ₹ 10,000
- (3) ₹ 20,000
- (4) ₹ 30,000

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710667

Option 1 ID : 21280742665

Option 2 ID : 21280742666

Option 3 ID : 21280742667

Option 4 ID : 21280742668

Status : Not Answered

Chosen Option : --

Q.25 The probability distribution of a random variable X is given below :

X	0	1	2	3	4
P(X)	0.1	0.25	0.3	0.2	0.15

Then, $\text{Var}\left(\frac{X}{2}\right)$ is :

- (1) 0.368751
- (2) 0.361875
- (3) 0.36758
- (4) 0.369822

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710657**

Option 1 ID : **21280742625**

Option 2 ID : **21280742626**

Option 3 ID : **21280742627**

Option 4 ID : **21280742628**

Status : **Not Answered**

Chosen Option : --

Q.26 In binomial distribution with $n=10$ and $P = \frac{1}{3}$, the probability of the event that unequal number of failures and successes occur is :

- (1) $\frac{5665}{6561}$
- (2) $\frac{6905}{6912}$
- (3) $\frac{5556}{6561}$
- (4) $\frac{5665}{6912}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710658**

Option 1 ID : **21280742629**

Option 2 ID : **21280742630**

Option 3 ID : **21280742631**

Option 4 ID : **21280742632**

Status : **Not Answered**

Chosen Option : --

Q.27 The standard deviation of a sampling distribution of a statistic is also known as :

- (1) sample size
- (2) parameter
- (3) standard error
- (4) standard measure

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710659**

Option 1 ID : **21280742633**

Option 2 ID : **21280742634**

Option 3 ID : **21280742635**

Option 4 ID : **21280742636**

Status : **Not Answered**

Chosen Option : --

Q.28 If $C(x) = ax^2 - bx - c$ represents the total cost function then the slope of the tangent to the marginal cost curve at the point (x, y) is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710656**

Option 1 ID : **21280742621**

Option 2 ID : **21280742622**

Option 3 ID : **21280742623**

Option 4 ID : **21280742624**

Status : **Not Answered**

Chosen Option : --

- Q.29 Let A be a square matrix. Then,
- (A) $A + A^T$ is a symmetric matrix
 - (B) $A - A^T$ is a skew-symmetric matrix
 - (C) AA^T is a skew-symmetric matrix
 - (D) $A^T A$ is a symmetric matrix

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

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

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710653

Option 1 ID : 21280742609

Option 2 ID : 21280742610

Option 3 ID : 21280742611

Option 4 ID : 21280742612

Status : Not Answered

Chosen Option : --

- Q.30 A company intends to create a sinking fund to replace at the end of 20th year assets costing ₹ 2,50,000. Then the value of the amount to be retained out of profits every year if the interest rate is 5% is : (Given $(1.05)^{20} = 2.6532$)

- (1) ₹ 7,156.09
- (2) ₹ 7,599.09
- (3) ₹ 7,561.09
- (4) ₹ 7,651.09

Options 1. 1

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

Question Type : MCQ

Question ID : 21280710671

Option 1 ID : 21280742681

Option 2 ID : 21280742682

Option 3 ID : 21280742683

Option 4 ID : 21280742684

Status : Not Answered

Chosen Option : --

Q.31 A motor boat goes 20 km downstream and comes back to the starting point in 6 hours. If the speed of the boat in still water is 12 km/h, then the speed of the stream is :

- (1) 10 km/h
- (2) 15 km/h
- (3) 8 km/h
- (4) 6 km/h

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710676

Option 1 ID : 21280742701

Option 2 ID : 21280742702

Option 3 ID : 21280742703

Option 4 ID : 21280742704

Status : Not Answered

Chosen Option : --

Q.32

If $x = 6t^2$, $y = \frac{6}{t^2}$, then $\frac{d^2y}{dx^2}$ is equal to :

(1) $-12 t^4$

(2) $\frac{1}{3 t^6}$

(3) $\frac{1}{12 t^5}$

(4) $-\frac{1}{t^4}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 21280710677

Option 1 ID : 21280742705

Option 2 ID : 21280742706

Option 3 ID : 21280742707

Option 4 ID : 21280742708

Status : Not Answered

Chosen Option : --

Q.33 If X has a Poisson distribution such that $P(X=1) = P(X=2)$ then $P(X=3)$ is :

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710678**

Option 1 ID : **21280742709**

Option 2 ID : **21280742710**

Option 3 ID : **21280742711**

Option 4 ID : **21280742712**

Status : **Not Answered**

Chosen Option : --

Q.34 Consider the following hypothesis test :

$$\mu_o : \mu \leq 26$$

$$\mu_a : \mu > 26$$

A sample of 36 is provided with a sample mean of 25.75. The population standard deviation is 3.

The value of the test statistic is :

- (1) 1.5
- (2) -0.5
- (3) 0.75
- (4) -0.25

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **21280710679**

Option 1 ID : **21280742713**

Option 2 ID : **21280742714**

Option 3 ID : **21280742715**

Option 4 ID : **21280742716**

Status : **Not Answered**

Chosen Option : --

Q.35 The maximum value of $Z=3x+4y$ subjected to the constraints $3x+7y \leq 21$, $5x+2y \leq 10$; $x, y \geq 0$ is :

- (1) $\frac{275}{29}$
- (2) $\frac{237}{19}$
- (3) $\frac{107}{29}$
- (4) $\frac{384}{29}$

Options 1. 1

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

Question Type : **MCQ**

Question ID : **21280710680**

Option 1 ID : **21280742717**

Option 2 ID : **21280742718**

Option 3 ID : **21280742719**

Option 4 ID : **21280742720**

Status : **Not Answered**

Chosen Option : --