

Q.1

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

List-I	List-II
Statement	Its value
(A) Degree of the differential equation $\frac{d^2y}{dx^2} = e^{dy/dx}$ is	(I) 2
(B) Order of the differential equation $\left(\frac{dy}{dx}\right)^2 + \frac{d^3y}{dx^3} = 0$ is	(II) not defined
(C) Degree of the differential equation $\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 - 5x^2 = 0$	(III) 3
(D) If p is the order and q is the degree of the differential equation $\frac{dy}{dx} + 3y = e^x$, then $p + q$ is	(IV) 1

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694688

Option 1 ID : 2268952693362

Option 2 ID : 2268952693363

Option 3 ID : 2268952693364

Option 4 ID : 2268952693365

Status : Answered

Chosen Option : 3

Q.2

The solution of the differential equation $(x + 1) \frac{dy}{dx} + 1 - 2e^{-y} = 0; y(0) = 0$ is

1. $|(x - 1)(e^y - 2)| = 1$
2. $|(x + 1)(e^y - 2)| = 1$
3. $|(x + 1)(e^y + 2)| = 1$
4. $|(x - 2)(e^y - 2)| = 1$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694687

Option 1 ID : 2268952693358

Option 2 ID : 2268952693359

Option 3 ID : 2268952693360

Option 4 ID : 2268952693361

Status : Not Answered

Chosen Option : --

Q.3

The function $f(x) = 6 - 6x - 2x^2$

1. Strictly decreasing for $x < -\frac{3}{2}$
2. Strictly increasing for $x < \frac{3}{2}$
3. Strictly decreasing for $x > -\frac{3}{2}$
4. Strictly increasing for $x > \frac{3}{2}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694683

Option 1 ID : 2268952693342

Option 2 ID : 2268952693343

Option 3 ID : 2268952693344

Option 4 ID : 2268952693345

Status : Answered

Chosen Option : 1

Q.4

The matrix X in the equation $AX = B$, such that $A = \begin{bmatrix} 1 & 3 \\ 0 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ 0 & 2 \end{bmatrix}$ is given by

1. $\frac{1}{2} \begin{bmatrix} 2 & -8 \\ 0 & 2 \end{bmatrix}$

2. $\frac{1}{2} \begin{bmatrix} 2 & -6 \\ 0 & 1 \end{bmatrix}$

3. $\frac{1}{2} \begin{bmatrix} 2 & -8 \\ 0 & 1 \end{bmatrix}$

4. $\frac{1}{2} \begin{bmatrix} 1 & -8 \\ 0 & 1 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694678

Option 1 ID : 2268952693322

Option 2 ID : 2268952693323

Option 3 ID : 2268952693324

Option 4 ID : 2268952693325

Status : Not Answered

Chosen Option : --



shiksha

Q.5

The value of $\int_1^3 \frac{x^2}{x^3+1} dx$

1. $\frac{1}{3} \log 26$

2. $\log 14$

3. $\frac{1}{3} \log 14$

4. $\log 56$

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694685

Option 1 ID : 2268952693350

Option 2 ID : 2268952693351

Option 3 ID : 2268952693352

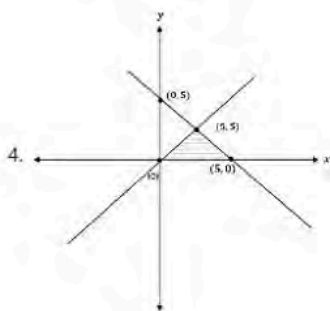
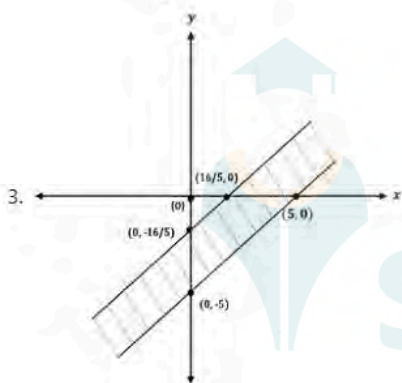
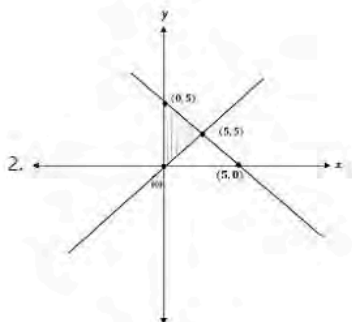
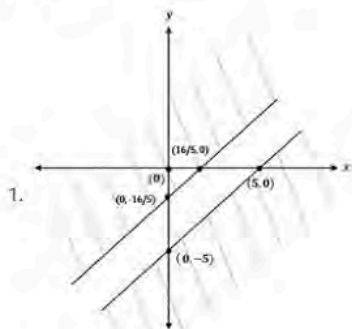
Option 4 ID : 2268952693353

Status : Answered

Chosen Option : 1

Q.6

Which one of the following represents the correct feasible region determined by the following constraints
 $x - y \geq 5$, $5x - 5y \leq 16$



Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694690

Option 1 ID : 2268952693370

Option 2 ID : 2268952693371

Option 3 ID : 2268952693372

Option 4 ID : 2268952693373

Status : Answered

Chosen Option : 1

Q.7

If $x = t^{1/2}$, $y = t^{3/2}$, then $\frac{dy}{dx} =$

1. $3t$
2. t
3. 3
4. 1

Options

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

Question Type : MCQ

Question ID : 226895694681

Option 1 ID : 2268952693334

Option 2 ID : 2268952693335

Option 3 ID : 2268952693336

Option 4 ID : 2268952693337

Status : Answered

Chosen Option : 3

Q.8

The function $f(x) = x + \frac{1}{x}$ has

1. local maxima at $x = -1$
2. local minima at $x = -1$
3. local maxima at $x = 1$.
4. neither local maxima nor local minima

Options

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

Question Type : MCQ

Question ID : 226895694682

Option 1 ID : 2268952693338

Option 2 ID : 2268952693339

Option 3 ID : 2268952693340

Option 4 ID : 2268952693341

Status : Answered

Chosen Option : 4

Q.9

The maximum value of $z = 5x + 7y$ subjected to constraints $x + y \leq 5, x \geq 0, y \geq 0$ is:

1. 35
2. 25
3. 40
4. 20

Options

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

Question Type : MCQ

Question ID : 226895694691

Option 1 ID : 2268952693374

Option 2 ID : 2268952693375

Option 3 ID : 2268952693376

Option 4 ID : 2268952693377

Status : Answered

Chosen Option : 1

Q.10

If X is a random variable which can assume values 0, 1, 2, 3 or 4 such that $P(X = 1) = P(X = 2)$ and $3P(X = 3) = 4P(X = 4)$
 $= P(X = 0) = \frac{1}{8}$, then $P(X > 0)$ is:

1. $\frac{1}{8}$
2. $\frac{5}{16}$
3. $\frac{19}{96}$
4. $\frac{7}{8}$

Options

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

Question Type : MCQ

Question ID : 226895694689

Option 1 ID : 2268952693366

Option 2 ID : 2268952693367

Option 3 ID : 2268952693368

Option 4 ID : 2268952693369

Status : Not Answered

Chosen Option : --

Q.11

Let A be any skew-symmetric matrix (where A^T is Transpose of matrix A), then which of the following statements are correct?

- (A) A^2 is a symmetric matrix
- (B) A^2 is a skew-symmetric matrix
- (C) $A^T A = -A^2$
- (D) $A^T A - A A^T = O$

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

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

Options

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

Question Type : MCQ

Question ID : 226895694679

Option 1 ID : 2268952693326

Option 2 ID : 2268952693327

Option 3 ID : 2268952693328

Option 4 ID : 2268952693329

Status : Not Answered

Chosen Option : --

Q.12

Let A be a 3×7 matrix, then each column of A contains:

- 1. 7 elements
- 2. 3 elements
- 3. 21 elements
- 4. 10 elements

Options

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

Question Type : MCQ

Question ID : 226895694680

Option 1 ID : 2268952693330

Option 2 ID : 2268952693331

Option 3 ID : 2268952693332

Option 4 ID : 2268952693333

Status : Answered

Chosen Option : 1

Q.13

Value of $\int \left(\frac{1}{\log x} - \frac{1}{(\log x)^2} \right) dx$ is

1. $\frac{x}{\log x} + c$, where c is an arbitrary constant
2. $x \log x + c$, where c is an arbitrary constant
3. $\frac{1}{\log x} + c$, where c is an arbitrary constant
4. $\frac{e^x}{\log x} + c$:where c is an arbitrary constant

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694684

Option 1 ID : 2268952693346

Option 2 ID : 2268952693347

Option 3 ID : 2268952693348

Option 4 ID : 2268952693349

Status : Not Answered

Chosen Option : --

Q.14

If A is a 3×3 matrix such that $|\text{adj } A| = 9$ and $|kA^{-1}| = 9$, then the value of k are:

1. ± 1
2. $\pm \frac{1}{3}$
3. ± 3
4. $\pm \frac{1}{9}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694677

Option 1 ID : 2268952693318

Option 2 ID : 2268952693319

Option 3 ID : 2268952693320

Option 4 ID : 2268952693321

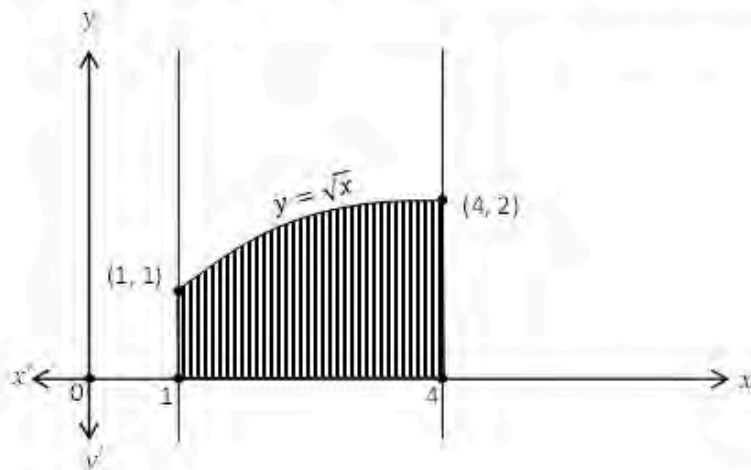
Status : Answered

Chosen Option : 2



Q.15

The nearest integral value of the shaded area shown below is :



1. 3 square units
2. $\frac{11}{3}$ square units
3. $\frac{14}{3}$ square units
4. 6 square units

Options

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

Question Type : MCQ

Question ID : 226895694686

Option 1 ID : 2268952693354

Option 2 ID : 2268952693355

Option 3 ID : 2268952693356

Option 4 ID : 2268952693357

Status : Answered

Chosen Option : 3

Section : Mathematics Section B1 Core

Q.16

Value of $\int_2^3 \frac{\sqrt{x}}{\sqrt{x} + \sqrt{5-x}} dx$ is

1. 0

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

3. 1

4. 5

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694708

Option 1 ID : 2268952693442

Option 2 ID : 2268952693443

Option 3 ID : 2268952693444

Option 4 ID : 2268952693445

Status : Not Answered

Chosen Option : --

Q.17

If x, y and z are non-zero distinct numbers, then $\begin{vmatrix} x+y & y+z & z+x \\ z & x & y \\ 1 & 1 & 1 \end{vmatrix}$ is equal to

1. $x + y + z$
2. $2(x + y + z)$
3. 1
4. 0

Options

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

Question Type : MCQ

Question ID : 226895694700

Option 1 ID : 2268952693410

Option 2 ID : 2268952693411

Option 3 ID : 2268952693412

Option 4 ID : 2268952693413

Status : Answered

Chosen Option : 4

Q.18

A relation $f: N \rightarrow N$ be defined by $f(x) = x^2, x \in N$ (Set of Natural numbers), Then $f(x)$ is

1. neither injective nor surjective
2. injective only
3. surjective only
4. bijective

Options

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

Question Type : MCQ

Question ID : 226895694693

Option 1 ID : 2268952693382

Option 2 ID : 2268952693383

Option 3 ID : 2268952693384

Option 4 ID : 2268952693385

Status : Not Answered

Chosen Option : --

Q.19

The probability that it will rain on any particular day is 50%. The probability that it rains only on the first 4 days of the week is:

1. $\frac{1}{64}$

2. $\frac{1}{128}$

3. $\frac{1}{16}$

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

Options

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

Question Type : **MCQ**

Question ID : **226895694723**

Option 1 ID : **2268952693502**

Option 2 ID : **2268952693503**

Option 3 ID : **2268952693504**

Option 4 ID : **2268952693505**

Status : **Answered**

Chosen Option : **4**



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Q.20

If $\vec{a}$ and $\vec{b}$ are two non-zero vectors such that $|\vec{a} \cdot \vec{b}| = |\vec{a} \times \vec{b}|$, then the angle θ between $\vec{a}$ and $\vec{b}$ is

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

Options

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

Question Type : MCQ

Question ID : 226895694717

Option 1 ID : 2268952693478

Option 2 ID : 2268952693479

Option 3 ID : 2268952693480

Option 4 ID : 2268952693481

Status : Not Answered

Chosen Option : --

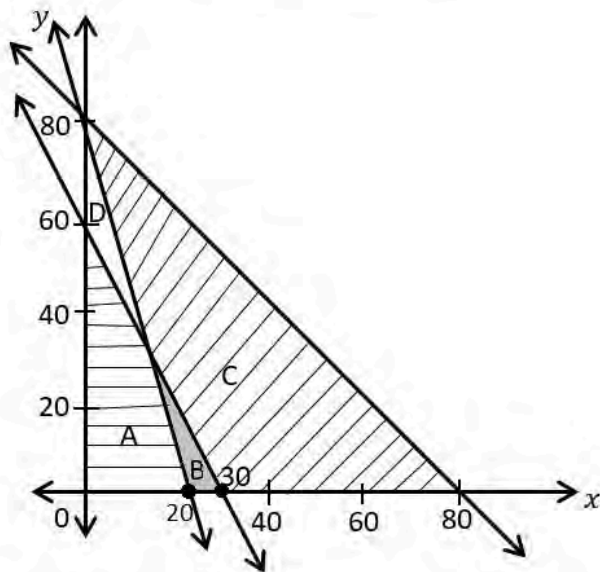


shiksha

Q.21

Which of the region shown in the given figures represents the feasible region bounded by the following constraints?

$$4x + y \geq 80, 2x + y \geq 60, x + y \leq 80, x \geq 0, y \geq 0$$



1. region A
2. region B
3. region C
4. region D

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694721

Option 1 ID : 2268952693494

Option 2 ID : 2268952693495

Option 3 ID : 2268952693496

Option 4 ID : 2268952693497

Status : Answered

Chosen Option : 3

Q.22

If $\begin{vmatrix} 1 & \cos \theta & 0 \\ \sin \theta & 1 & \cos \theta \\ \cos \theta & 1 & -\sin \theta \end{vmatrix} = A \sin \theta + B \cos \theta + C \sin \theta \cos \theta$ then:

1. $A + B = 0$
2. $B + C = 2$
3. $C + A = 1$
4. $B - A = 1$

Options

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

Question Type : MCQ

Question ID : 226895694698

Option 1 ID : 2268952693402

Option 2 ID : 2268952693403

Option 3 ID : 2268952693404

Option 4 ID : 2268952693405

Status : Answered

Chosen Option : 4

Q.23

The solution of the differential equation $\frac{dy}{dx} = \frac{ax + c}{by + d}$ represents a circle when

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

Options

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

Question Type : MCQ

Question ID : 226895694713

Option 1 ID : 2268952693462

Option 2 ID : 2268952693463

Option 3 ID : 2268952693464

Option 4 ID : 2268952693465

Status : Not Answered

Chosen Option : --

Q.24

If $f(x) = \begin{cases} mx+1, & x \geq \pi/2 \\ \sin x + n, & x \leq \pi/2 \end{cases}$ is continuous at $x = \pi/2$, where $m \in \mathbb{Z}$ (set of integers), then $\sin 2n =$

1. 0
2. 1
3. -1
4. a finite value between -1 and 0

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694703

Option 1 ID : 2268952693422

Option 2 ID : 2268952693423

Option 3 ID : 2268952693424

Option 4 ID : 2268952693425

Status : Not Answered

Chosen Option : --

Q.25

$\int \frac{\sin x - x \cos x}{x(x + \sin x)} dx =$ (where C is an arbitrary constant)

1. $\log \left| \frac{x}{x - \sin x} \right| + C$
2. $\log \left| \frac{x}{x + x \sin x} \right| + C$
3. $\log \left| \frac{x}{x + \sin x} \right| + C$
4. $\log \left| \frac{x + \sin x}{x} \right| + C$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694707

Option 1 ID : 2268952693438

Option 2 ID : 2268952693439

Option 3 ID : 2268952693440

Option 4 ID : 2268952693441

Status : Not Answered

Chosen Option : --

Q.26

The vector in the direction of the vector $2\hat{i} - \hat{j} - 2\hat{k}$ that has magnitude 9 units is:

1. $2\hat{i} - \hat{j} - 2\hat{k}$
2. $9(2\hat{i} - \hat{j} - 2\hat{k})$
3. $\frac{1}{9}(2\hat{i} - \hat{j} - 2\hat{k})$
4. $(6\hat{i} - 3\hat{j} - 6\hat{k})$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694716

Option 1 ID : 2268952693474

Option 2 ID : 2268952693475

Option 3 ID : 2268952693476

Option 4 ID : 2268952693477

Status : Answered

Chosen Option : 1



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Q.27

A letter is known to have come from either TATAPUR or from CHAKRATA. On the envelope, only two letters "TA" are visible consecutively. The probability that the letter has come from CHAKRATA is:

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

2. $\frac{3}{10}$

3. $\frac{1}{7}$

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

Options

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

Question Type : **MCQ**

Question ID : **226895694725**

Option 1 ID : **2268952693510**

Option 2 ID : **2268952693511**

Option 3 ID : **2268952693512**

Option 4 ID : **2268952693513**

Status : **Answered**

Chosen Option : **3**



Q.28

The shortest distance between the following lines:

$$\vec{r} = (\hat{i} + \hat{j} - \hat{k}) + s(2\hat{i} + \hat{j} + \hat{k})$$

$$\vec{r} = (\hat{i} + \hat{j} + 2\hat{k}) + t(4\hat{i} + 2\hat{j} + 2\hat{k}), \text{ where } s \text{ and } t \text{ are scalars, is:}$$

1. $\frac{3\sqrt{6}}{\sqrt{5}}$

2. $\sqrt{\frac{15}{2}}$

3. $\frac{\sqrt{5}}{3\sqrt{6}}$

4. $\sqrt{\frac{2}{15}}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694719

Option 1 ID : 2268952693486

Option 2 ID : 2268952693487

Option 3 ID : 2268952693488

Option 4 ID : 2268952693489

Status : Not Answered

Chosen Option : --

Q.29

The system of linear equations $kx + 5y = 5$, $2x + 3y = 5$ will be consistent if

1. $k \neq \frac{5}{3}$
2. $k \neq 5$
3. $k \neq \frac{10}{3}$
4. $k = \frac{10}{3}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694697

Option 1 ID : 2268952693398

Option 2 ID : 2268952693399

Option 3 ID : 2268952693400

Option 4 ID : 2268952693401

Status : Answered

Chosen Option : 4

Q.30

If $\int \frac{x^4}{x-2} dx = px + qx^2 + rx^3 + sx^4 + t \log|x-2| + C$, where C is an arbitrary constant and p, q, r, s, t are real numbers, then the correct arrangement of p, q, r, s, t is

1. $p > q > r > s > t$
2. $q > r > p > t > s$
3. $r > t > s > p > q$
4. $t > p > q > r > s$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694710

Option 1 ID : 2268952693450

Option 2 ID : 2268952693451

Option 3 ID : 2268952693452

Option 4 ID : 2268952693453

Status : Not Answered

Chosen Option : --

Q.31

A couple has 3 children each child is equally likely to be a boy or a girl. The probability that the eldest child is a girl given that they have atleast one boy is:

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

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

3. $\frac{4}{7}$

4. $\frac{3}{8}$

Options

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

Question Type : MCQ

Question ID : 226895694726

Option 1 ID : 2268952693514

Option 2 ID : 2268952693515

Option 3 ID : 2268952693516

Option 4 ID : 2268952693517

Status : Answered

Chosen Option : 4

Q.32

For the function $f(x) = 2x^3 - 3x^2 - 12x + 5$, the difference of maximum and minimum value of $f(x)$ is

1. 12

2. -15

3. 27

4. -3

Options

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

Question Type : MCQ

Question ID : 226895694705

Option 1 ID : 2268952693430

Option 2 ID : 2268952693431

Option 3 ID : 2268952693432

Option 4 ID : 2268952693433

Status : Answered

Chosen Option : 1

Q.33

If $A = \begin{bmatrix} 4 & 3 \\ 2 & -1 \\ 1 & 0 \end{bmatrix}$ and $B^T = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & -1 \end{bmatrix}$, then $A - B$ is equal to

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

2. $\begin{bmatrix} 3 & 1 \\ -2 & 0 \\ -2 & 1 \end{bmatrix}$

3. $\begin{bmatrix} 3 & 1 \\ 0 & -2 \\ -2 & 1 \end{bmatrix}$

4. $\begin{bmatrix} 4 & 3 \\ 2 & -1 \\ 1 & 0 \end{bmatrix}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694696

Option 1 ID : 2268952693394

Option 2 ID : 2268952693395

Option 3 ID : 2268952693396

Option 4 ID : 2268952693397

Status : Answered

Chosen Option : 3

Q.34

Differentiation of $\log[\log(\log x^5)]$ with respect to x is

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

2. $\frac{5}{x \log(\log x^5)}$

3. $\frac{5x^2}{(\log x^5) \log(\log x^5)}$

4. $\frac{5x^4}{(\log x^5) \log(\log x^5)}$

Options

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

Question Type : MCQ

Question ID : 226895694702

Option 1 ID : 2268952693418

Option 2 ID : 2268952693419

Option 3 ID : 2268952693420

Option 4 ID : 2268952693421

Status : Answered

Chosen Option : 4

Q.35

If the maximum value of the function $f(x) = \frac{2 \log_e x}{x}, x > 0$ occurs at $x = e$, then $e^3 f''(e)$ is equal to

1. -2

2. $-\frac{2}{e}$

3. $-e$

4. $-5e^3$

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694706

Option 1 ID : 2268952693434

Option 2 ID : 2268952693435

Option 3 ID : 2268952693436

Option 4 ID : 2268952693437

Status : Not Answered

Chosen Option : --



shiksha

Q.36

Interval in which the function f given by $f(x) = \tan x - 4x$, $x \in \left(0, \frac{\pi}{2}\right)$ is strictly decreasing is

1. $0 < x < \frac{\pi}{3}$
2. $\frac{\pi}{3} < x < \frac{\pi}{2}$
3. $\frac{\pi}{4} < x < \frac{\pi}{2}$
4. $\frac{\pi}{2} > x > 0$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694704

Option 1 ID : 2268952693426

Option 2 ID : 2268952693427

Option 3 ID : 2268952693428

Option 4 ID : 2268952693429

Status : Not Answered

Chosen Option : --

Q.37

The corner points of the bounded feasible region determined by the system of linear constraints are $(0, 0)$, $(5, 0)$, $(6, 5)$, $(6, 8)$, $(4, 10)$, $(0, 8)$. Let $Z = 3x - 4y$ be the objective function. The minimum value of Z occurs at

1. $(0, 0)$
2. $(5, 0)$
3. $(0, 8)$
4. $(4, 10)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694722

Option 1 ID : 2268952693498

Option 2 ID : 2268952693499

Option 3 ID : 2268952693500

Option 4 ID : 2268952693501

Status : Answered

Chosen Option : 3

Q.38

If lines $\frac{x+5}{5\lambda+2} = \frac{4-2y}{10} = \frac{1-3z}{-3}$ and $\frac{x-2}{1} = \frac{1+2y}{4\lambda} = \frac{2+z}{3}$ are perpendicular, then value of ' λ ' is

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

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694718

Option 1 ID : 2268952693482

Option 2 ID : 2268952693483

Option 3 ID : 2268952693484

Option 4 ID : 2268952693485

Status : Not Answered

Chosen Option : --

Q.39

$\sin^{-1}\left(\cos\frac{3\pi}{5}\right)$ equals

1. $\frac{3\pi}{5}$
2. $\frac{-\pi}{10}$
3. $\frac{\pi}{10}$
4. $\frac{-3\pi}{10}$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : MCQ

Question ID : 226895694694

Option 1 ID : 2268952693386

Option 2 ID : 2268952693387

Option 3 ID : 2268952693388

Option 4 ID : 2268952693389

Status : Not Answered

Chosen Option : --

Q.40

If the area of a triangle with vertices $(-3,0)$, $(3, 0)$ and $(0, k)$ is 9 sq. units, then k equals

1. 0
2. -3
3. ± 3
4. 3

Options

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

Question Type : MCQ

Question ID : 226895694695

Option 1 ID : 2268952693390

Option 2 ID : 2268952693391

Option 3 ID : 2268952693392

Option 4 ID : 2268952693393

Status : Answered

Chosen Option : 3

Q.41

If $\begin{bmatrix} x-y & 0 \\ x+y & 1 \end{bmatrix}$ is an identity matrix and $\begin{bmatrix} x & y \\ z & x \end{bmatrix}$ is a singular matrix then:

1. $x > y = z$
2. $x = y > z$
3. $x = y < z$
4. $x \neq y \neq z$

Options

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

Question Type : MCQ

Question ID : 226895694699

Option 1 ID : 2268952693406

Option 2 ID : 2268952693407

Option 3 ID : 2268952693408

Option 4 ID : 2268952693409

Status : Not Answered

Chosen Option : --

Q.42

If $\vec{a} = 2\hat{j} - \hat{k}$, $\vec{b} = 2\hat{i} - 3\hat{j} + \hat{k}$ and $\vec{c} = -\hat{i} + \hat{k}$ are three vectors, then the area (in sq. units) of the parallelogram whose diagonals are $(\vec{b} + \vec{c})$ and $(\vec{a} + \vec{c})$ is

1. $\sqrt{21}$

2. $\frac{1}{2}\sqrt{21}$

3. $\sqrt{42}$

4. 21

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694714

Option 1 ID : 2268952693466

Option 2 ID : 2268952693467

Option 3 ID : 2268952693468

Option 4 ID : 2268952693469

Status : Not Answered

Chosen Option : --



Q.43

The angle between the line $2x = 3y = z$ and x - axis is:

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

2. $\cos^{-1}\left(\frac{3}{7}\right)$

3. $\cos^{-1}\left(\frac{2}{7}\right)$

4. $\cos^{-1}\left(\frac{1}{7}\right)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694720

Option 1 ID : 2268952693490

Option 2 ID : 2268952693491

Option 3 ID : 2268952693492

Option 4 ID : 2268952693493

Status : Not Answered

Chosen Option : --

Q.44

$\int_0^{\pi/2} \sqrt{1 - \sin 2x} \, dx$ is equal to:

1. $2(\sqrt{2} - 1)$

2. $2(\sqrt{2} + 1)$

3. 2

4. $2\sqrt{2}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694709

Option 1 ID : 2268952693446

Option 2 ID : 2268952693447

Option 3 ID : 2268952693448

Option 4 ID : 2268952693449

Status : Not Answered

Chosen Option : --

Q.45

Let A and B be independent events such that $P(A) = 0.3$ and $P(B) = 0.4$, then

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

List-I	List-II
(A) $P(A \cap B)$	(I) 0.3
(B) $P(A \cup B)$	(II) 0.4
(C) $P(A B)$	(III) 0.12
(D) $P(B A)$	(IV) 0.58

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

1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
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 : 226895694724

Option 1 ID : 2268952693506

Option 2 ID : 2268952693507

Option 3 ID : 2268952693508

Option 4 ID : 2268952693509

Status : Not Answered

Chosen Option : --

Q.46

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

List-I	List-II
(A) Integrating factor of $xdy - (y + x^2)dx = 0$	(I) x^2
(B) Integrating factor of $xdy + (2y + x^2)dx = 0$	(II) x^3
(C) Integrating factor of $(3y - x^2)dx + xdy = 0$	(III) x
(D) Integrating factor of $(y + 3x^2)dx + xdy = 0$	(IV) $\frac{1}{x}$

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694712

Option 1 ID : 2268952693458

Option 2 ID : 2268952693459

Option 3 ID : 2268952693460

Option 4 ID : 2268952693461

Status : Not Answered

Chosen Option : --

Q.47

Let $R = \{(L_1, L_2) : L_1 \perp L_2 \text{ where } L_1, L_2 \in L \text{ (set of straight line in a plane)}\}$, then

1. R is reflexive but neither symmetric nor transitive
2. R is symmetric but neither reflexive nor transitive
3. R is an equivalence relation
4. R is reflexive and transitive but not symmetric

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 2268952693378

Option 1 ID : 2268952693378

Option 2 ID : 2268952693379

Option 3 ID : 2268952693380

Option 4 ID : 2268952693381

Status : Not Answered

Chosen Option : --

Q.48

The area of triangle with vertices P, Q, R is given by (where $\vec{AB}$ = position vector of point B – position vector of point A)

1. $\frac{1}{8} |\vec{PR} \times \vec{PQ}|$

2. $\frac{1}{4} |\vec{PR} \times \vec{PQ}|$

3. $\frac{1}{2} |\vec{PQ} \times \vec{PR}|$

4. $|\vec{PQ} \times \vec{PR}|$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 2268952694715

Option 1 ID : 2268952693470

Option 2 ID : 2268952693471

Option 3 ID : 2268952693472

Option 4 ID : 2268952693473

Status : Not Answered

Chosen Option : --

Q.49

If $y = \sin^{-1} \sqrt{\frac{x}{x+1}} + \sec^{-1} \sqrt{\frac{x+1}{x}}$, then $\frac{dy}{dx}$ is

1. 0

2. 1

3. $\frac{1}{\sqrt{x+1}}$

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

Options

1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694701

Option 1 ID : 2268952693414

Option 2 ID : 2268952693415

Option 3 ID : 2268952693416

Option 4 ID : 2268952693417

Status : Not Answered

Chosen Option : --

Q.50

Area (in sq. units) of the region bounded by curves $y^2 = x$ and $x = 4$ is

1. $\frac{16}{3}$

2. $\frac{32}{3}$

3. $\frac{8}{3}$

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694711

Option 1 ID : 2268952693454

Option 2 ID : 2268952693455

Option 3 ID : 2268952693456

Option 4 ID : 2268952693457

Status : Not Answered

Chosen Option : --

Section : Mathematics Section B2 Applied

Q.51

Three varieties A, B and C of rice are mixed together in the ratio 1:1:3 respectively. The price of rice A is Rs 127 per kg and that of rice B is Rs 135 per kg. If the price of the mixture is Rs. 152 per kg, then the price per kg of rice of type C is:

1. Rs. 148

2. Rs. 156

3. Rs. 174

4. Rs. 166

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694728

Option 1 ID : 2268952693522

Option 2 ID : 2268952693523

Option 3 ID : 2268952693524

Option 4 ID : 2268952693525

Status : Not Answered

Chosen Option : --

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

List-I	List-II
(Matrix A)	(Determinant of Adjoint of A)
(A) $\begin{bmatrix} 3 & 1 \\ 4 & 2 \end{bmatrix}$	(I) 9
(B) $\begin{bmatrix} 5 & -1 \\ 4 & 2 \end{bmatrix}$	(II) 8
(C) $\begin{bmatrix} 6 & -1 \\ 2 & 1 \end{bmatrix}$	(III) 14
(D) $\begin{bmatrix} 4 & 1 \\ 3 & 3 \end{bmatrix}$	(IV) 2

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694734

Option 1 ID : 2268952693546

Option 2 ID : 2268952693547

Option 3 ID : 2268952693548

Option 4 ID : 2268952693549

Status : Not Answered

Chosen Option : --

Q.53

Consider a random sample of 10 students having 116 cm as mean height and standard deviation as 9.798 cm. If the suggested mean height of the students population is 110 cm then the t-test statistic of the sample is :

$$\left[\text{given } \frac{\sqrt{10}}{9.798} = 0.3227 \right]$$

1. 1.93
2. 2.84
3. 1.54
4. 1.64

Options

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

Question Type : MCQ

Question ID : 226895694753

Option 1 ID : 2268952693622

Option 2 ID : 2268952693623

Option 3 ID : 2268952693624

Option 4 ID : 2268952693625

Status : Not Answered

Chosen Option : --

Q.54

If the following data is obtained from a simple random sample:

6, 7, 9, 10, 11, 17

Then the point estimate of population standard deviation is:

1. 15.21
2. 10
3. 3.898
4. 3.192

Options

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

Question Type : MCQ

Question ID : 226895694751

Option 1 ID : 2268952693614

Option 2 ID : 2268952693615

Option 3 ID : 2268952693616

Option 4 ID : 2268952693617

Status : Not Answered

Chosen Option : --

Q.55

If A and B are two non-singular matrices of order n, then which of the following statement/statements is/are **not** correct?

- (A) AB is non-singular.
- (B) AB is singular.
- (C) $(AB)^{-1} = A^{-1} B^{-1}$
- (D) $(AB)^{-1}$ does not exist.

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

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

Options 1. 1

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

Question Type : MCQ

Question ID : 226895694737

Option 1 ID : 2268952693558

Option 2 ID : 2268952693559

Option 3 ID : 2268952693560

Option 4 ID : 2268952693561

Status : Not Answered

Chosen Option : --

Q.56

It is known that 3% of plastic bags manufactured in a factory are defective. Using the Poisson distribution on a sample of 100 bags, the probability of at most one defective bag is:

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

Options 1. 1

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

Question Type : MCQ

Question ID : 226895694745

Option 1 ID : 2268952693590

Option 2 ID : 2268952693591

Option 3 ID : 2268952693592

Option 4 ID : 2268952693593

Status : Not Answered

Chosen Option : --

Q.57

The marginal cost (MC) and marginal revenue (MR) functions of a product are $MC = 20 + \frac{x}{20}$ and $MR = 30$ respectively. If the fixed cost is 200, then the maximum value of the profit is:

1. Rs. 750
2. Rs. 800
3. Rs. 640
4. Rs. 940

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895694742**

Option 1 ID : **2268952693578**

Option 2 ID : **2268952693579**

Option 3 ID : **2268952693580**

Option 4 ID : **2268952693581**

Status : **Not Answered**

Chosen Option : --

Q.58

Mr. X wishes to purchase a flat for Rs. 44,65,000 with a down payment of Rs. 10,00,000 and balance in equated monthly installments (EMI) for 25 years. If the bank charges 6 % per annum compounded monthly, the EMI is:

[Given: $(1.005)^{300} = 4.4650$]

1. Rs. 25,772
2. Rs. 28,775
3. Rs. 22,325
4. Rs. 30,550

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895694756**

Option 1 ID : **2268952693634**

Option 2 ID : **2268952693635**

Option 3 ID : **2268952693636**

Option 4 ID : **2268952693637**

Status : **Not Answered**

Chosen Option : --

Q.59

If $x = t^3, y = t^2$ then $\frac{d^2y}{d^2x}$ is equal to:

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

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

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

4. $\frac{-2}{9t^4}$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694738

Option 1 ID : 2268952693562

Option 2 ID : 2268952693563

Option 3 ID : 2268952693564

Option 4 ID : 2268952693565

Status : Not Answered

Chosen Option : --

Q.60

About linear programming problem (LPP), which of the following statements are **correct**?

- (A) In a LPP, the linear inequalities or restrictions on the variables are called linear constraints.
- (B) If the feasible region for an LPP is unbounded, then the maximum or minimum value of the objective function $Z = ax + by$ never exists.
- (C) The feasible region for an LPP is always convex.
- (D) The common region determined by all the linear constraints of an LPP is called the feasible region.

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694760

Option 1 ID : 2268952693650

Option 2 ID : 2268952693651

Option 3 ID : 2268952693652

Option 4 ID : 2268952693653

Status : Not Answered

Chosen Option : --

Q.61

For the linear programming problem (LPP):

Maximize $Z = x + 1.5y$, subject to constraints,

$$x + 2y \leq 40, 2x + y \leq 40, x + y \leq 25, x \geq 0, y \geq 0.$$

Which of the following is NOT correct?

1. The feasible region is bounded.
2. The corner points of the feasible region are (0,0), (20,0), (15,10), (10,15) and (0,20)
3. The optimal value of the objective function is attained at the point (15, 10).
4. The LPP has a unique optimal solution.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694761

Option 1 ID : 2268952693654

Option 2 ID : 2268952693655

Option 3 ID : 2268952693656

Option 4 ID : 2268952693657

Status : Not Answered

Chosen Option : --

Q.62

Two pipes A and B can fill a tank in 20 minutes and 10 minutes respectively. Both pipes A and B are opened together for some time and then pipe B is turned off. If the tank is filled in 15 minutes, then find after how many minutes pipe B is turned off?

1. 4.5 minutes
2. 2.5 minutes
3. 3.5 minutes
4. 4 minutes

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694730

Option 1 ID : 2268952693530

Option 2 ID : 2268952693531

Option 3 ID : 2268952693532

Option 4 ID : 2268952693533

Status : Not Answered

Chosen Option : --

Q.63

Which of the following is **not** correct about the Compound Annual Growth Rate (CAGR)?

1. It can be used to demonstrate and compare the performance of investment advisors.
2. It can be used to compare the historical returns of stocks with bonds or with a savings account.
3. It can be used to track the performance of various business measures of one or multiple companies alongside one another.
4. It is calculated by taking the arithmetic mean of series of returns.

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694758

Option 1 ID : 2268952693642

Option 2 ID : 2268952693643

Option 3 ID : 2268952693644

Option 4 ID : 2268952693645

Status : Not Answered

Chosen Option : --

Q.64

If the matrix $A = \begin{bmatrix} \alpha & \beta & \gamma \\ 0 & 0 & 2 \\ 3 & -2 & 0 \end{bmatrix}$ is a skew symmetric matrix, then the value of $(\alpha + \beta + \gamma)^2$ is:

1. 4

2. 16

3. 9

4. 36

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694736

Option 1 ID : 2268952693554

Option 2 ID : 2268952693555

Option 3 ID : 2268952693556

Option 4 ID : 2268952693557

Status : Not Answered

Chosen Option : --

Q.65

The value of the definite integral $\int_0^1 e^x \frac{(1-x)^2}{(1+x^2)^2} dx$ is:

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

Options

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

Question Type : MCQ

Question ID : 226895694741

Option 1 ID : 2268952693574

Option 2 ID : 2268952693575

Option 3 ID : 2268952693576

Option 4 ID : 2268952693577

Status : Not Answered

Chosen Option : --

Q.66

A boat can row at the speed of 16 km/hr in still water. If the river is flowing at 8 km/hr, and it takes 8 hours for a round trip, then the distance between the two places is:

1. 36 km
2. 32 km
3. 48 km
4. 54 km

Options

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

Question Type : MCQ

Question ID : 226895694729

Option 1 ID : 2268952693526

Option 2 ID : 2268952693527

Option 3 ID : 2268952693528

Option 4 ID : 2268952693529

Status : Not Answered

Chosen Option : --

Q.67

For the function, $f(x) = \frac{-3}{4}x^4 - 8x^3 - \frac{45}{2}x^2 - 350$, which of the following statements are **correct**?

(A) $x = -3$ and $x = -5$ are the only critical points of the given function.

(B) $x = -3$ is a point of local minimum.

(C) The local minimum value at $x = -3$ is 231.

(D) $x = -5$ is a point of local maximum.

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

1. (A), (B) and (D) only
2. (B) and (D) only
3. (C) and (D) only
4. (A), (B) and (C) only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694740

Option 1 ID : 2268952693570

Option 2 ID : 2268952693571

Option 3 ID : 2268952693572

Option 4 ID : 2268952693573

Status : Not Answered

Chosen Option : --

Q.68

Which of the following statements are correct about the "Central Limit Theorem" ?

- (A) The sampling distribution of the sample mean approaches the normal distribution as the sample size gets larger.
- (B) A sample size of 30 or more is considered to be sufficient to hold the "Central Limit Theorem".
- (C) As the sample size becomes larger, the prediction of characteristics of the population becomes more accurate.
- (D) The sampling distribution of the sample mean approaches a bell shaped curve as the sample size gets larger.

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

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

Options

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

Question Type : MCQ

Question ID : 226895694752

Option 1 ID : 2268952693618

Option 2 ID : 2268952693619

Option 3 ID : 2268952693620

Option 4 ID : 2268952693621

Status : Not Answered

Chosen Option : --

Q.69

The remainder when $(672 + 541 + 383 + 295 + 101 + 86)$ is divided by 3, is:

- 1. 0
- 2. 1
- 3. 2
- 4. 3

Options

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

Question Type : MCQ

Question ID : 226895694727

Option 1 ID : 2268952693518

Option 2 ID : 2268952693519

Option 3 ID : 2268952693520

Option 4 ID : 2268952693521

Status : Not Answered

Chosen Option : --

Q.70

If two dice are rolled 12 times and getting a total greater than 4 is considered as a success, then which of the following statements are correct?

(A) The probability of getting a total greater than 4 in a single throw of the pair of dice is $5/6$.

(B) Mean = 10

(C) Variance = $3/5$

(D) The probability of getting a total less than or equal to 4 in a single throw of the pair of dice is $1/6$.

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

1. (A), (B) and (D) only
2. (A) and (D) only
3. (A), (B), (C) and (D)
4. (B) and (C) only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694744

Option 1 ID : 2268952693586

Option 2 ID : 2268952693587

Option 3 ID : 2268952693588

Option 4 ID : 2268952693589

Status : Not Answered

Chosen Option : --



shiksha

Q.71

Let $y = 138.86 + 7.64(x - 2021)$ be a straight line of best fit by using least square method to the following data:

Year(x)	2018	2019	2020	2021	2022	2023	2024
Profit(y) (in Rs. '000)	114	130	126	144	138	156	164

Then the trend value for the year 2024 is:

1. 164
2. 154.14
3. 161.78
4. 162.86

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694750

Option 1 ID : 2268952693610

Option 2 ID : 2268952693611

Option 3 ID : 2268952693612

Option 4 ID : 2268952693613

Status : Not Answered

Chosen Option : --



shiksha

Q.72

Which of the following statements are correct?

- (A) A fund which is created to accumulate money over the years to discharge a future obligation is called a sinking fund.
- (B) The amount or future value of perpetuity is well-defined.
- (C) The sinking fund be used in any emergency.
- (D) An equated monthly installment is a fixed payment made by a borrower to a lender at a specific date every month to clear off the loan.

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694754

Option 1 ID : 2268952693626

Option 2 ID : 2268952693627

Option 3 ID : 2268952693628

Option 4 ID : 2268952693629

Status : Not Answered

Chosen Option : --



shiksha

Q.73

The probability distribution function of a normal variate with mean μ and variance σ^2 is given by:

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}, -\infty < x < \infty, -\infty < \mu < \infty, \sigma > 0$$

If $y = f(x)$ be the normal probability curve, then which of the following is correct?

- (A) The normal curve is symmetrical about the line $x = \mu$.
- (B) Mean, median and mode of the distribution coincide.
- (C) Y- axis is an asymptote to the normal curve.
- (D) If x increases numerically, $f(x)$ decreases rapidly.

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694746

Option 1 ID : 2268952693594

Option 2 ID : 2268952693595

Option 3 ID : 2268952693596

Option 4 ID : 2268952693597

Status : Not Answered

Chosen Option : --

Q.74

The behavior and pattern of the data in a time series is NOT based on which of the following component?

1. Secular trend component
2. Irregular component
3. Cyclic component
4. Stable component

Options

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

Question Type : **MCQ**

Question ID : **226895694747**

Option 1 ID : **2268952693598**

Option 2 ID : **2268952693599**

Option 3 ID : **2268952693600**

Option 4 ID : **2268952693601**

Status : **Not Answered**

Chosen Option : --

Q.75

A die is rolled in such a way that an even number is twice likely to occur as an odd number. If the die is rolled twice, then the mean of the number of perfect squares in two tosses is:

1. 2
2. $1/3$
3. $2/3$
4. 1

Options

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

Question Type : **MCQ**

Question ID : **226895694743**

Option 1 ID : **2268952693582**

Option 2 ID : **2268952693583**

Option 3 ID : **2268952693584**

Option 4 ID : **2268952693585**

Status : **Not Answered**

Chosen Option : --

Q.76

At what rate of interest will the present value of a perpetuity of Rs. 1000 payable at the end of every six months be Rs. 40000?

- 1. 10%
- 2. 5%
- 3. 7%
- 4. 12%

Options

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

Question Type : **MCQ**

Question ID : **226895694755**

Option 1 ID : **2268952693630**

Option 2 ID : **2268952693631**

Option 3 ID : **2268952693632**

Option 4 ID : **2268952693633**

Status : **Not Answered**

Chosen Option : --



Q.77

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

List-I	List-II
(Curve)	(Slope of tangent at $x = 4$)
(A) $y = \sqrt{x^3}$	(I) -1
(B) $y = \sqrt{x}$	(II) 1
(C) $y = x^3 - 47x$	(III) $1/4$
(D) $xy = 16$	(IV) 3

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694739

Option 1 ID : 2268952693566

Option 2 ID : 2268952693567

Option 3 ID : 2268952693568

Option 4 ID : 2268952693569

Status : Not Answered

Chosen Option : --

Q.78

In a 500 m race, the ratio of speeds of two participants, A and B, is 4:5 respectively. If A has a start of 180 m, then the distance by which A wins is

1. 100 m
2. 120 m
3. 110 m
4. 80 m

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895694731**

Option 1 ID : **2268952693534**

Option 2 ID : **2268952693535**

Option 3 ID : **2268952693536**

Option 4 ID : **2268952693537**

Status : **Not Answered**

Chosen Option : --

Q.79

In a time series, the variations which occur due to general tendency of the data to increase or decrease over a long term are known as:

1. Cyclical Variations
2. Secular Variations
3. Irregular Variations
4. Seasonal Variations

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**

Question ID : **226895694749**

Option 1 ID : **2268952693606**

Option 2 ID : **2268952693607**

Option 3 ID : **2268952693608**

Option 4 ID : **2268952693609**

Status : **Not Answered**

Chosen Option : --

Q.80

A money lender charges Rs10 for Rs100 per month in advance then effective rate of interest per annum charged by money lender is: $\left[\text{given } \left(\frac{10}{9} \right)^{12} = 3.541 \right]$

1. 23.45%
2. 25.41%
3. 24.41%
4. 10%

Options

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

Question Type : MCQ

Question ID : 226895694757

Option 1 ID : 2268952693638

Option 2 ID : 2268952693639

Option 3 ID : 2268952693640

Option 4 ID : 2268952693641

Status : Not Answered

Chosen Option : --

Q.81

If a, b, c are positive real numbers, then the least value of $(a+b+c)(ab+bc+ca)$ is:

1. 1
2. abc
3. 9abc
4. 3abc

Options

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

Question Type : MCQ

Question ID : 226895694732

Option 1 ID : 2268952693538

Option 2 ID : 2268952693539

Option 3 ID : 2268952693540

Option 4 ID : 2268952693541

Status : Not Answered

Chosen Option : --

Q.82

For the given five values, 13, 17, 21, 22, 32; the 3-year moving averages are:

1. 17, 20, 21
2. 17, 21, 25
3. 16, 20, 24
4. 17, 20, 25

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694748

Option 1 ID : 2268952693602

Option 2 ID : 2268952693603

Option 3 ID : 2268952693604

Option 4 ID : 2268952693605

Status : Not Answered

Chosen Option : --

Q.83

If A and B are square matrices of the same order, then which of the following statements are correct?

(A) $|A^{-1}| = |A|^{-1}$

(B) $\text{adj}(A) = |A|A^{-1}$

(C) $(A+B)^{-1} = B^{-1} + A^{-1}$

(D) $(AB)^{-1} = B^{-1}A^{-1}$

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

1. (A), (B) and (D) only
2. (A), (B) and (C) only
3. (A), (C) and (D) only
4. (B), (C) and (D) only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : MCQ

Question ID : 226895694735

Option 1 ID : 2268952693550

Option 2 ID : 2268952693551

Option 3 ID : 2268952693552

Option 4 ID : 2268952693553

Status : Not Answered

Chosen Option : --

Q.84

The number of all possible matrices of order 3 with each entry either 0 or 1 is:

1. 18
2. 8
3. 256
4. 512

Options

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

Question Type : MCQ

Question ID : 226895694733

Option 1 ID : 2268952693542

Option 2 ID : 2268952693543

Option 3 ID : 2268952693544

Option 4 ID : 2268952693545

Status : Not Answered

Chosen Option : --

Q.85

A motorcycle has a scrap value of Rs. 22,500 after 15 years of its purchase. If the annual depreciation charge is Rs. 8,500, then the original cost by linear method is:

1. Rs. 1,20,000
2. Rs. 1,50,000
3. Rs. 1,25,000
4. Rs. 1,30,000

Options

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

Question Type : MCQ

Question ID : 226895694759

Option 1 ID : 2268952693646

Option 2 ID : 2268952693647

Option 3 ID : 2268952693648

Option 4 ID : 2268952693649

Status : Not Answered

Chosen Option : --