

# Telangana State Council Higher Education

## Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

<b>Question Paper Name :</b>	BSc Mathematics 1st Aug 2022 Shift2
<b>Subject Name :</b>	BSc Mathematics
<b>Creation Date :</b>	2022-08-01 18:29:48
<b>Duration :</b>	180
<b>Total Marks :</b>	200
<b>Display Marks:</b>	No
<b>Calculator :</b>	None
<b>Magnifying Glass Required? :</b>	No
<b>Ruler Required? :</b>	No
<b>Eraser Required? :</b>	No
<b>Scratch Pad Required? :</b>	No
<b>Rough Sketch/Notepad Required? :</b>	No
<b>Protractor Required? :</b>	No
<b>Show Watermark on Console? :</b>	Yes
<b>Highlighter :</b>	No
<b>Auto Save on Console?</b>	Yes
<b>Change Font Color :</b>	No
<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No
<b>Show Reports :</b>	No
<b>Show Progress Bar :</b>	No

## BSc Mathematics

<b>Group Number :</b>	1
<b>Group Id :</b>	81959967
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	180
<b>Show Attended Group? :</b>	No
<b>Edit Attended Group? :</b>	No
<b>Break time :</b>	0
<b>Group Marks :</b>	200
<b>Is this Group for Examiner? :</b>	No
<b>Examiner permission :</b>	Cant View
<b>Show Progress Bar? :</b>	No

## Mathematics

Section Id :	819599259
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599295
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 81959913231 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} = \frac{k}{x}N(x, y)$ , for some  $k \neq 1$ , then which of the following is always an integrating factor of  $M(x, y)dx + N(x, y)dy = 0$ .

Options :

1. ✘  $u = x$

2. ✘  $u = \frac{1}{x}$

3. ✔  $u = x^k$

4. ✘  $u = x^{-k}$

Question Number : 2 Question Id : 81959913232 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

A solution of  $x dy - y dx + (x^2 + y^2) dx + (x^2 + y^2) dy = 0$  is

Options :

$$\arcsin\left(\frac{y}{x}\right) + x + y = c$$

1. ✓

$$\arcsin\left(\frac{y}{x}\right) + x^2 + y^2 = c$$

2. ✗

$$\arcsin\left(\frac{x}{y}\right) + x + y = c$$

3. ✗

$$\arcsin\left(\frac{x}{y}\right) + x^2 + y^2 = c$$

4. ✗

Question Number : 3 Question Id : 81959913233 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The differential equation of all non-vertical lines in a plane is \_\_\_\_

Options :

$$\frac{dx}{dy} = 0$$

1. ✗

$$\frac{d^2y}{dx^2} = 0$$

2. ✓

$$\frac{d^2x}{dy^2} = 0$$

3. ✗

$$\frac{dy}{dx} = 0$$

4. ✗

Question Number : 4 Question Id : 81959913234 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The order of the differential equation whose solution is  $y = a\cos x + b\sin x + ce^x$

is \_\_\_\_\_

Options :

- 1. ✘
- 2. ✘
- 3. ✔
- 4. ✘

Question Number : 5 Question Id : 81959913235 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The degree of the differential equation  $\left[1 + \left(\frac{dy}{dx}\right)^3\right]^{2/3} = 2x \left(\frac{d^2y}{dx^2}\right)$  is \_\_\_\_\_.

Options :

- 1. ✘
- 2. ✔
- 3. ✘
- 4. ✘

Question Number : 6 Question Id : 81959913236 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The solution of the ordinary differential equation  $\frac{dy}{dx} = y$ ,  $y(0) = 0$  is

Options :

1. ✘ unbounded
2. ✘ positive
3. ✘ negative
4. ✔ zero

Question Number : 7 Question Id : 81959913237 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The integrating factor of the differential equation  $\cos^2 x \frac{dy}{dx} + y = \tan x$  is \_\_\_\_\_

Options :

1. ✘  $\cos x$
2. ✘  $\tan x$
3. ✘  $e^{\cos x}$
4. ✔  $e^{\tan x}$

Question Number : 8 Question Id : 81959913238 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation  $y = x \frac{dy}{dx} + \left(\frac{dy}{dx}\right)^2$  is \_\_\_\_\_

Options :

1. ✔  $y = cx + c^2$

$$y = cx + c$$

2. ✘

$$y = cx$$

3. ✘

$$y = cx + \frac{1}{c}$$

4. ✘

Question Number : 9 Question Id : 81959913239 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The solution of the equation  $p^2 - 7p + 12 = 0$  ( $p = \frac{dy}{dx}$ ) is \_\_\_\_\_

Options :

$$(y + 4x + c)(y + 3x + c) = 0$$

1. ✘

$$(y - 4x + c)(y - 3x + c) = 0$$

2. ✔

$$(4y - x + c)(3y - x + c) = 0$$

3. ✘

$$(4y + x + c)(3y + x + c) = 0$$

4. ✘

Question Number : 10 Question Id : 81959913240 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

To solve the differential equation  $(x - y - 2)dx - (2x - 2y - 3)dy = 0$ , we shall put

Options :

$$y = vx$$

1. ✘

$$x + y = v$$

2. ✘

$$x - y = v$$

3. ✔

$$x = X + h, y = Y + k$$

4. ✘

Question Number : 11 Question Id : 81959913241 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The general solution of  $y'' + 2y' + y = e^x$  is \_\_\_\_\_

Options :

$$y = (c_1 + c_2x)e^x + \frac{1}{4}e^{-x}$$

1. ✘

$$y = (c_1 + c_2x)e^{-x} + \frac{1}{4}e^{-x}$$

2. ✘

$$y = (c_1 + c_2x)e^{-x} - \frac{1}{4}e^{-x}$$

3. ✘

$$y = (c_1 + c_2x)e^{-x} + \frac{1}{4}e^x$$

4. ✔

Question Number : 12 Question Id : 81959913242 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The solution of  $x^2 y'' + xy' + 4y = 0, x \neq 0$  are

Options :

$$\cos(\log x) \text{ and } \sin(\log x)$$

1. ✘

$$\cos(2\log x) \text{ and } \sin(2\log x)$$

2. ✔

3. ✘  $\cos(\log x)$  and  $\sin(\log x^2)$

4. ✘  $\cos(\log x^2)$  and  $\sin(\log x)$

Question Number : 13 Question Id : 81959913243 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

A particular solution of the differential equation  $y'' + y = \sin x$  is given by

Options :

1. ✘  $\sin x$

2. ✘  $\cos x$

3. ✔  $\frac{-x}{2} \cos x$

4. ✘  $\frac{x}{2} \sin x$

Question Number : 14 Question Id : 81959913244 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The general solution of the differential equation  $y'' + y = 32x^3$  is

Options :

1. ✔  $y(x) = A \cos x + B \sin x + 32x(x^2 - 6)$

2. ✘  $y(x) = A \cos x + B \sin x + 32x(x^2 + 6)$



$$y(x) = A \cos x + B \sin x + 32x(x - 6)$$

3. ✘

$$y(x) = A \cos x + B \sin x + 32x(x + 6)$$

4. ✘

Question Number : 15 Question Id : 81959913245 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The number of solution of the differential equation  $\frac{d^2y}{dx^2} - y = 0$ ,  $y(0) = 1$ ,  $y(\pi) = 1$   
is \_\_\_\_\_.

Options :

0

1. ✘

1

2. ✔

2

3. ✘

3

4. ✘

Question Number : 16 Question Id : 81959913246 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $D = \frac{d}{dx}$  and  $V = Q(x)$ , then  $\frac{1}{f(D)}(xV) = \underline{\hspace{2cm}}$

Options :

$$\left[ x + \frac{f'(D)}{f(D)} \right] \frac{1}{f(D)} V$$

1. ✘

$$\left[ x - \frac{f(D)}{f'(D)} \right] \frac{1}{f(D)} V$$

2. ✘

$$\left[ x + \frac{f(D)}{f'(D)} \right] \frac{1}{f(D)} V$$

3. ✘

$$\left[ x - \frac{f'(D)}{f(D)} \right] \frac{1}{f(D)} V$$

4. ✔

Question Number : 17 Question Id : 81959913247 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The particular solution of the differential equation  $(D + 1)^3 y = x^2 e^{-x}$  ( $D = \frac{d}{dx}$ ) is —

Options :

$$\frac{1}{30} e^{-x} x^5$$

1. ✘

$$\frac{1}{30} e^x x^5$$

2. ✘

$$\frac{1}{60} e^{-x} x^5$$

3. ✔

$$\frac{1}{60} e^x x^5$$

4. ✘

Question Number : 18 Question Id : 81959913248 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The partial differential equation by eliminating arbitrary function f from

$$z = (x + y) f(x^2 - y^2) \text{ is } \underline{\hspace{2cm}}$$

Options :

$$xp + yq = z$$

1. ✘

$$yp + xq = z$$

2. ✔

$$xp - yq = z$$

3. ✘

$$yp - xq = z$$

4. ✘

Question Number : 19 Question Id : 81959913249 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The partial differential equation by eliminating  $a, b$  from the equation  $z = ae^{bx} \sin by$  is \_\_\_\_\_

Options :

$$r + t = 0$$

1. ✔

$$r - t = 0$$

2. ✘

$$p + q = 0$$

3. ✘

$$p - q = 0$$

4. ✘

Question Number : 20 Question Id : 81959913250 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of  $yzp + zxq = xy$  is \_\_\_

Options :

$$F(x^2 - y^2, y^2 + z^2) = 0$$

1. ✘

2. ✘  $F(x^2+y^2, y^2-z^2) = 0$

3. ✘  $F(x^2+y^2, y^2+z^2) = 0$

4. ✔  $F(x^2-y^2, y^2-z^2) = 0$

Question Number : 21 Question Id : 81959913251 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following series is conditionally convergent

Options :

1. ✘  $\sum_{n=1}^{\infty} \frac{1}{n}$

2. ✘  $\sum_{n=1}^{\infty} \frac{1}{n^2}$

3. ✔  $\sum_{n=1}^{\infty} \frac{(-1)^n}{n}$

4. ✘  $\sum_{n=1}^{\infty} \frac{(-1)^n}{n^2}$

Question Number : 22 Question Id : 81959913252 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The sequence  $\{(-1)^n \left(1 + \frac{1}{n}\right)\}$  is \_\_\_\_.

Options :

1. ✘ not bounded

2. ✓ bounded

3. ✗ bounded below but not bounded above.

4. ✗ bounded above but not bounded below.

Question Number : 23 Question Id : 81959913253 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The series  $\sum_{n=1}^{\infty} \left( \frac{1}{\sqrt{n}} - \frac{1}{\sqrt{n+1}} \right)$

Options :

1. ✓ convergent to 1

2. ✗ convergent to  $\frac{1}{2}$

3. ✗ convergent to  $\frac{3}{4}$

4. ✗ does not converge

Question Number : 24 Question Id : 81959913254 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Consider the sequence  $(a_n) = (1, 2, 3, 1, 2, 3, \dots)$  then the  $\limsup a_n$  and  $\liminf a_n$  are respectively

Options :

1. ✗ 3 and 2

2. ✓ 3 and 1

3. ✘ 1 and 3

4. ✘ 2 and 3

Question Number : 25 Question Id : 81959913255 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

A real sequence can have

Options :

1. ✘ finite number of limits

2. ✘ infinite number of limits

3. ✘ at least one limit

4. ✔ at most one limit

Question Number : 26 Question Id : 81959913256 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $\{a_n\}$  is a sequence converging to  $l$ .

$$\text{Let } b_n = \begin{cases} a_{2n} & \text{if } n \text{ is odd} \\ a_{3n} & \text{if } n \text{ is even} \end{cases}$$

Then the sequence  $\{b_n\}$

Options :

1. ✘ need not converge

should converge to 0.

2. ✘

should converge to  $l$

3. ✔

should converge to  $2l$  or to  $3l$ .

4. ✘

**Question Number : 27 Question Id : 81959913257 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Let  $\{x_n\}$  be an increasing sequence of irrational numbers in  $[0,2]$ . Then

**Options :**

$\{x_n\}$  converges to 2

1. ✘

$\{x_n\}$  converges to  $\sqrt{2}$

2. ✘

$\{x_n\}$  converges to some number in  $[0,2]$

3. ✔

$\{x_n\}$  may not converge.

4. ✘

**Question Number : 28 Question Id : 81959913258 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Let  $\sum a_n$  be a convergent series of positive real numbers and  $\lim \left( \frac{a_n}{a_{n+1}} \right) = l$ . Then

**Options :**

$l < 1$

1. ✘

2. ✓  $l > 1$

3. ✗  $l = 1$

4. ✗  $l \leq 1.$

Question Number : 29 Question Id : 81959913259 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $f(x) = x^3 - 2x^2$  in  $[0,5]$ , then the value of C to satisfy the mean value theorem is \_\_\_\_\_.

Options :

1. ✗ 1

2. ✗ 2

3. ✓ 3

4. ✗ 4

Question Number : 30 Question Id : 81959913260 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $f: \mathbb{R} - \{0\} \rightarrow \mathbb{R}$  be defined as  $f(x) = |x|$ , then

Options :

f is continuous and differentiable

1. ✓



f is continuous but not differentiable

2. ✘

f is differentiable but discontinuous

3. ✘

f is discontinuous

4. ✘

Question Number : 31 Question Id : 81959913261 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements

S<sub>1</sub>: If f is Riemann integrable in [0,1], then f<sup>2</sup> is Riemann integrable in [0, 1]

S<sub>2</sub>: If f<sup>2</sup> is Riemann integrable in [0,1], then f is Riemann integrable in [0, 1]. Then

Options :

both S<sub>1</sub> and S<sub>2</sub> are true

1. ✘

both S<sub>1</sub> and S<sub>2</sub> are false

2. ✘

S<sub>1</sub> is false but S<sub>2</sub> is true

3. ✘

S<sub>1</sub> is true but S<sub>2</sub> is false

4. ✔

Question Number : 32 Question Id : 81959913262 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of  $\lim_{x \rightarrow 2} \frac{e^{3x-6}-1}{\sin(2-x)}$  is \_\_\_\_\_

Options :

-1

1. ✘

-3

2. ✔

$\frac{3}{2}$

3. ✘

3

4. ✘

Question Number : 33 Question Id : 81959913263 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let  $f$  and  $g$  be two real valued functions which have continuous derivatives in  $[a,b]$ .

Then  $\int_a^b f(x)g'(x) dx + \int_a^b g(x)f'(x) dx = \underline{\hspace{2cm}}$

Options :

$f(a)g(a) - f(b)g(b)$

1. ✘

$f(a)g(b) - f(b)g(a)$

2. ✘

$f(b)g(b) - f(a)g(a)$

3. ✔

$f(b)g(a) - f(a)g(b)$

4. ✘

Question Number : 34 Question Id : 81959913264 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $F(x) = \int_0^x \log t dt$  for all positive  $x$ , then  $F'(x) = \underline{\hspace{2cm}}$

Options :

1. ✘  $x$

2. ✘  $\frac{1}{x}$

3. ✘  $x \log x$

4. ✔  $\log x$

Question Number : 35 Question Id : 81959913265 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $f: [a, b] \rightarrow \mathbb{R}$  is a bounded function. Let  $P_1$  and  $P_2$  are partition of  $[a, b]$  such that

$P_1 \subset P_2$ , then

Options :

1. ✔  $L(P_1, f) \leq U(P_2, f)$

2. ✘  $L(P_1, f) \geq U(P_1, f)$

3. ✘  $U(P_2, f) \leq L(P_2, f)$

4. ✘  $L(P_1, f) \geq U(P_2, f)$

Question Number : 36 Question Id : 81959913266 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $f: \mathbb{R} \rightarrow \mathbb{R}$  be defined by  $f(x) = \sin(x^3)$ , then  $f$  is

Options :

1. ✘ uniformly continuous
2. ✔ continuous but not uniformly continuous
3. ✘ not differentiable
4. ✘ not continuous

Question Number : 37 Question Id : 81959913267 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $f: [-2, 5] \rightarrow \mathbb{R}$  be the function given by  $f(x) = x^6 + 3x^2 + 60$ . Then

Options :

1. ✔  $f$  is bounded function
2. ✘ there exists a  $c \in (-2, 5)$  such that  $f(c) = 0$
3. ✘  $f$  is increasing
4. ✘  $f$  is decreasing

Question Number : 38 Question Id : 81959913268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \rightarrow 0^+} x \ln x = \underline{\hspace{2cm}}$$

Options :

1. ✖  $1$
2. ✖  $-1$
3. ✔  $0$
4. ✖  $\infty$

Question Number : 39 Question Id : 81959913269 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

To which of the following, Rolle's theorem can be applied

Options :

1. ✖  $f(x) = \tan x$  in  $[0, \pi]$
2. ✖  $f(x) = \cos\left(\frac{1}{x}\right)$  in  $[-1, 1]$
3. ✖  $f(x) = x^2$  in  $[2, 3]$
4. ✔  $f(x) = x(x + 3) e^{-x/2}$  in  $[-3, 0]$ .

Question Number : 40 Question Id : 81959913270 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Let  $f(x) = \begin{cases} 1 - 2x & \text{if } x \leq 1 \\ 3x - 4 & \text{if } x > 1, \end{cases}$  then

Options :

1. ✘  $f$  is continuous at all points except at  $x = 1$
2. ✘  $f$  is continuous on  $\mathbb{R}$  but not differentiable at any point of  $\mathbb{R}$
3. ✔  $f$  is continuous on  $\mathbb{R}$  and differentiable at all points except at  $x = 1$
4. ✘  $f$  is discontinuous at  $x = 1$

Question Number : 41 Question Id : 81959913271 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The order of  $(1\ 3\ 2)(1\ 5\ 4)$  in the permutation group  $S_5$  is \_\_\_\_.

Options :

1. ✘ 3
2. ✔ 5
3. ✘ 6
4. ✘ 9

Question Number : 42 Question Id : 81959913272 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

An element 'a' in a group has order 100. Then the order of  $a^{65}$  is \_\_\_\_\_.

Options :

1.  20
2.  25
3.  10
4.  5

Question Number : 43 Question Id : 81959913273 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The center of the group  $\mathbb{Z}_{33}$  is \_\_\_\_\_

Options :

1.   $\{0\}$
2.   $\mathbb{Z}_3$
3.   $\mathbb{Z}_{11}$
4.   $\mathbb{Z}_{33}$

Question Number : 44 Question Id : 81959913274 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

In a cyclic group of order 35, the number of elements of order 35 is \_\_\_\_\_

Options :

1. ✘ 1
2. ✘ 4
3. ✘ 6
4. ✔ 24

Question Number : 45 Question Id : 81959913275 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $G$  be a group and  $H$  be a subgroup of  $G$ . Which of the following statement is true.

Options :

1. ✘ If  $gH=Hg$  for some  $g \in G$ , then  $H$  is a normal subgroup of  $G$
2. ✘ If  $gH \neq Hg$  for some  $g \in G$ , then  $H$  is a normal subgroup of  $G$
3. ✔ If  $H$  is normal subgroup of  $G$ , then  $gH = Hg \forall g \in G$
4. ✘ If  $H$  is normal subgroup of  $G$ , then  $gH \neq Hg$  for some  $g \in G$

Question Number : 46 Question Id : 81959913276 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Consider the group of all integers  $Z$  with respect to  $*$  defined by  $a * b = a + b + 7$  for all  $a, b \in Z$ . Then the identity element in that group is \_\_\_\_\_



Options :

- 1. ✘ -1
- 2. ✔ -7
- 3. ✘ 1
- 4. ✘ 7

Question Number : 47 Question Id : 81959913277 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The kernel of the homomorphism  $\phi: (\mathbb{Z}, +) \rightarrow (\mathbb{R}^*, \cdot)$  defined by  $f(x) = 3^x$  is \_\_\_\_\_.

Options :

- 1. ✘ {1}
- 2. ✔ {0}
- 3. ✘ {1, -1}
- 4. ✘  $\mathbb{Z}$

Question Number : 48 Question Id : 81959913278 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $G$  be a group of order  $2p$ , where  $p$  is a prime. Let  $H$  be a normal subgroup of  $G$  of order  $p$ . Then the index of  $H$  in  $G$  is \_\_\_\_\_.

Options :

- 1. ✔ 2

2. ✘ 3

3. ✘ p

4. ✘ 1

Question Number : 49 Question Id : 81959913279 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let  $G$  be an additive group of integers modulo 24. The number of distinct subgroups of  $G$  is \_\_

Options :

1. ✘ 1

2. ✘ 24

3. ✘ 12

4. ✔ 8

Question Number : 50 Question Id : 81959913280 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Under addition, which one of the following statements is true.

Options :

1. ✘  $\mathbb{Z}$  is cyclic subgroup of  $2\mathbb{Z}$

2. ✘  $\mathbb{Z}$  is a subgroup of  $2\mathbb{Z}$

3. ✓  $2\mathbb{Z}$  is a cyclic subgroup of  $\mathbb{Z}$

4. ✗  $2\mathbb{Z}$  is a subgroup of  $\mathbb{Z}$  but not cyclic

Question Number : 51 Question Id : 81959913281 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Suppose  $G$  is cyclic group which has exactly three subgroups  $G, \{e\}$  and a subgroup of order 7. Then the order of  $G$  is \_\_\_\_\_.

Options :

1. ✗ 7

2. ✗ 14

3. ✓ 49

4. ✗ 343

Question Number : 52 Question Id : 81959913282 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $K$  is a subgroup of  $H$  and  $H$  is a subgroup of a finite group  $G$ . Then

Options :

1. ✓  $O(K)$  divides both  $O(H)$  and  $O(G)$

2. ✗  $O(K)$  divides  $O(G)$ , but  $O(K)$  need not divide  $O(H)$

$O(K)$  divides  $O(H)$ , but  $O(K)$  need not divide  $O(G)$

3. ✘

$O(K)$  need not divide  $O(H)$  and  $O(K)$  need not divide  $O(G)$

4. ✘

Question Number : 53 Question Id : 81959913283 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The ring  $\mathbb{Z}_{100}$  has.

Options :

unique maximal ideal

1. ✘

exactly two maximal ideals

2. ✔

exactly three maximal ideals

3. ✘

exactly four maximal ideals

4. ✘

Question Number : 54 Question Id : 81959913284 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

In the ring  $(\mathbb{Z}, +, \cdot)$ , the set  $\{12u + 30v \mid u, v \in \mathbb{Z}\}$  is same as  $n\mathbb{Z}$  for  $n =$  \_\_\_\_\_

Options :

2

1. ✘

3

2. ✘

4

3. ✘

4. ✓ 6

Question Number : 55 Question Id : 81959913285 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let  $R = M_{2 \times 2}(\mathbb{Z})$  be a ring and  $S = \left\{ \begin{bmatrix} a & 0 \\ 0 & a \end{bmatrix} \mid a \in \mathbb{Z} \right\}$  be a subset of  $R$ . Find the correct statement.

Options :

1. ✓ S is a subring but not an ideal
2. ✗ S is an ideal
3. ✗ S is an ideal but not a subring
4. ✗ S is neither a subring nor an ideal

Question Number : 56 Question Id : 81959913286 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of solutions of  $x^2 - 5x + 6 = 0$  in the ring  $\mathbb{Z}_6$  is \_\_\_\_\_

Options :

1. ✗ 6
2. ✗ 4
3. ✓ 3
4. ✗ 2

Question Number : 57 Question Id : 81959913287 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The characteristics of an integral domain is \_\_\_\_\_

Options :

1. ✘ Always a prime number
2. ✔ Either zero or prime number
3. ✘ Always zero
4. ✘ always composite integer

Question Number : 58 Question Id : 81959913288 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The number of idempotent elements in the ring  $(\mathbb{Z}_{10}, +_{10}, \times_{10})$  is \_\_\_\_\_

Options :

1. ✔ 4
2. ✘ 3
3. ✘ 5
4. ✘ 6

Question Number : 59 Question Id : 81959913289 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $\mathbb{Z}$  is the set of integers, then  $\frac{\mathbb{Z}}{n\mathbb{Z}}$  is an integral domain if and only if

Options :

1. ✘  n is a positive integer
2. ✘  n is an integer  $>1$
3. ✘  n is a composite number
4. ✔  n is prime number

Question Number : 60 Question Id : 81959913290 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The ring  $\mathbb{Z} \times \mathbb{Z}$

Options :

1. ✘  is an integral domain
2. ✘  is a field
3. ✔  is not an integral domain
4. ✘  has no zero divisors.

Question Number : 61 Question Id : 81959913291 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a linear transformation

Options :

T:  $\mathbb{R}^3 \rightarrow \mathbb{R}^2$  defined by  $T(x, y, z) = (x, z)$

1. ✘

T:  $\mathbb{R}^3 \rightarrow \mathbb{R}^3$  defined by  $T(x, y, z) = (x, y - 1, z)$

2. ✔

T:  $\mathbb{R}^2 \rightarrow \mathbb{R}^2$  defined by  $T(x, y) = (2x, y - x)$

3. ✘

T:  $\mathbb{R}^2 \rightarrow \mathbb{R}^2$  defined by  $T(x, y) = (y, x)$

4. ✘

Question Number : 62 Question Id : 81959913292 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $\{u, v\}$  be a linearly independent subset of a real vector space  $V$ . Then which of the following is not linearly independent set?

Options :

1. ✘  $\{u, u - v\}$

2. ✘  $\{u + \sqrt{2}v, u - \sqrt{2}v\}$

3. ✘  $\{v, 2u - \frac{v}{2}\}$

4. ✔  $\{2u + v, -4u - 2v\}$

Question Number : 63 Question Id : 81959913293 Question Type : MCQ Option Shuffling : Yes Display



Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Together with  $(1,1,0)$  and  $(2,2,2)$  which of the following vector will form a basis of  $\mathbb{R}^3$

Options :

1. ✓  $(1,2,0)$

2. ✗  $(-1,-1,0)$

3. ✗  $(0,0,5)$

4. ✗  $(3,3,3)$

Question Number : 64 Question Id : 81959913294 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one the following subsets is a subspace of the vector space  $\mathbb{R}^3$  over the field  $\mathbb{R}$ ?

Options :

1. ✗  $\{(x, y, z) \in \mathbb{R}^3 \mid x, y, z \text{ are rationals}\}$

2. ✗  $\{(x, y, z) \in \mathbb{R}^3 \mid x > 0, y > 0\}$

3. ✓  $\{(x, y, z) \in \mathbb{R}^3 \mid 2x + 3y + 4z = 0\}$

4. ✗  $\{(x, y, z) \in \mathbb{R}^3 \mid 2x + 3y + 4z = 1\}$

Question Number : 65 Question Id : 81959913295 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let  $W = \{(a, b, c, d) | a = b, c = d\}$  be a subspace of  $\mathbb{R}^4$ .

Then the dimension of  $W$  is \_\_\_\_\_

Options :

- 1. ✘
- 2. ✔
- 3. ✘
- 4. ✘

Question Number : 66 Question Id : 81959913296 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let  $A$  be a  $7 \times 5$  matrix over  $\mathbb{R}$  having at least 5 linearly independent rows, then the dimension of the null space of  $A$  is \_\_\_

Options :

- 1. ✔
- 2. ✘
- 3. ✘
- 4. ✘

Question Number : 67 Question Id : 81959913297 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Suppose  $n \geq 1$ . If  $V$  is the set of all polynomials of degree  $\leq n$  with integer coefficients, then it is not a vector space over  $\mathbb{R}$ , since

Options :

it is not closed under addition

1. ✘

it is closed under addition, but  $(V, +)$  does not form an abelian group

2. ✘

Zero does not belong to  $V$

3. ✘

It is not closed under scalar multiplication

4. ✔

Question Number : 68 Question Id : 81959913298 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $T: \mathbb{R}^3 \rightarrow \mathbb{R}^3$  is given by  $T(x, y, z) = (x + y, 0, z)$  for  $(x, y, z) \in \mathbb{R}^3$ , then

Options :

$T$  is linear and onto

1. ✘

$T$  is linear but not onto

2. ✔

$T$  is linear and one-one

3. ✘

$T$  is not linear

4. ✘

Question Number : 69 Question Id : 81959913299 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Let  $V(F)$  be a finite dimensional vector space. Then any two bases of  $V$ .

Options :

1. ✘ are equal
2. ✘ can have different number of elements.
3. ✔ have the same number of elements
4. ✘ are linearly dependent.

Question Number : 70 Question Id : 81959913300 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The dimension of the vector space of all  $6 \times 6$  real skew-symmetric matrices is \_\_\_\_\_

Options :

1. ✘ 36
2. ✘ 30
3. ✘ 21
4. ✔ 15

Question Number : 71 Question Id : 81959913301 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

The sum and product of the eigen values of the  $3 \times 3$  identity matrix are respectively

Options :

1. ✔ 3, 1

2, 1

2. ✘

3, 3

3. ✘

0, 0

4. ✘

**Question Number : 72 Question Id : 81959913302 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

An eigen vector of the matrix  $A = \begin{bmatrix} 5 & 4 \\ 1 & 2 \end{bmatrix}$  with eigen value  $\lambda = 1$  is given by

**Options :**

$\begin{bmatrix} 1 \\ 1 \end{bmatrix}$

1. ✘

$\begin{bmatrix} 1 \\ 0 \end{bmatrix}$

2. ✘

$\begin{bmatrix} 0 \\ 1 \end{bmatrix}$

3. ✘

$\begin{bmatrix} 1 \\ -1 \end{bmatrix}$

4. ✔

**Question Number : 73 Question Id : 81959913303 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

If  $x = (-1, 2, 1)$ ,  $y = (2, 2, -3)$ ,  $z = (1, 2, -2)$  are vectors of  $\mathbb{R}^3$ , then

**Options :**

*x is orthogonal to  $y + z$ .*

1. ✓

*y is orthogonal to  $z + x$*

2. ✗

*z is orthogonal to  $x + y$*

3. ✗

*x is orthogonal to  $x + y + z$*

4. ✗

**Question Number : 74 Question Id : 81959913304 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

If '0' is an eigen value of a square matrix A, then A is

**Options :**

1. ✗ non-singular matrix

2. ✓ singular matrix

3. ✗ symmetric matrix

4. ✗ diagonal matrix

**Question Number : 75 Question Id : 81959913305 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The characteristic equation of  $\begin{bmatrix} -m & -n \\ 1 & 0 \end{bmatrix}$  is \_\_\_\_

**Options :**

$$\lambda^2 - m\lambda - n$$

1. ✖

$$\lambda^2 + m\lambda + n$$

2. ✔

$$\lambda^2 + n\lambda + m$$

3. ✖

$$\lambda^2 - n\lambda - m$$

4. ✖

Question Number : 76 Question Id : 81959913306 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $\{x, y\}$  is an orthonormal set in an inner product space  $V$ , then the value of

$\|x-y\| + \|x+y\|$  is \_\_\_\_\_

Options :

$$2+\sqrt{2}$$

1. ✖

$$\sqrt{2}$$

2. ✖

$$2\sqrt{2}$$

3. ✔

4. ✖ 2

Question Number : 77 Question Id : 81959913307 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Suppose  $x = (2, 2 + i, 4i)$  is a vector in the inner product space  $\mathbb{C}^3(\mathbb{C})$  with respect to the standard inner product then  $\|x\| =$  \_\_\_\_\_

Options :

1. ✘  $\sqrt{7}$
2. ✘ 7
3. ✘  $\sqrt{5}$
4. ✔ 5

Question Number : 78 Question Id : 81959913308 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Let  $M_n(\mathbb{R})$  be the set of  $m \times n$  matrices with real entries. Which of the following statement is true

Options :

1. ✔ Every matrix  $A \in M_5(\mathbb{R})$  has a real eigen value
2. ✘ Every matrix  $A \in M_4(\mathbb{R})$  has a real eigen value
3. ✘ Every matrix  $A \in M_2(\mathbb{R})$  has a real eigen value
4. ✘ Every matrix  $A \in M_6(\mathbb{R})$  has a real eigen value

Question Number : 79 Question Id : 81959913309 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0



Let  $T: \mathbb{R}^3 \rightarrow \mathbb{R}^3$  be a linear transformation such that  $T(1,2,3) = (1,2,3)$ ,  
 $T(1,5,0) = (2,10,0)$  and  $T(-1,2,-1) = (-3,6,-3)$ . The dimension of the vector space  
spanned by all the eigen vectors of  $T$  is

Options :

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

Question Number : 80 Question Id : 81959913310 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Let  $A$  be a  $3 \times 3$  matrix with eigen values 1, -1 and 3. Then

Options :

- 1.   $A^2 + A$  is non-singular
- 2.   $A^2 - A$  is non-singular
- 3.   $A^2 + 3A$  is non-singular
- 4.   $A^2 - 3A$  is non-singular

Question Number : 81 Question Id : 81959913311 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $u = \frac{x^{1/4} + y^{1/4}}{x^{1/6} + y^{1/6}}$  and  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = ku$ , then  $k =$  \_\_\_\_\_

Options :

1. ✘  $\frac{1}{4}$

2. ✔  $\frac{1}{12}$

3. ✘  $\frac{1}{24}$

4. ✘  $\frac{1}{6}$

Question Number : 82 Question Id : 81959913312 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $u = \frac{1}{\sqrt{x^2 + y^2 + z^2}}$  ( $x^2 + y^2 + z^2 \neq 0$ ) then  $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} =$  \_\_\_\_\_

Options :

1. ✘  $\frac{1}{2}$

2. ✘ 1

3. ✘ -1

4. ✔ 0

Question Number : 83 Question Id : 81959913313 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $u = \log(\tan x + \tan y + \tan z)$ , then  $(\sin 2x) \frac{\partial u}{\partial x} + (\sin 2y) \frac{\partial u}{\partial y} + (\sin 2z) \frac{\partial u}{\partial z} =$  \_\_\_\_\_

Options :

- 1. ✖ 0
- 2. ✖ 1
- 3. ✔ 2
- 4. ✖ 3

Question Number : 84 Question Id : 81959913314 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $u = \tan^{-1}\left(\frac{x^3+y^3}{x-y}\right)$  ( $x \neq y$ ), then  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} =$  \_\_\_\_\_

Options :

- 1. ✔  $\sin 2u$
- 2. ✖  $\sin u$
- 3. ✖  $\cos u$
- 4. ✖  $\cos 2u$

Question Number : 85 Question Id : 81959913315 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If  $z = f(x, y)$  is a homogeneous function of  $x, y$  of degree  $n$ , then

$$x^2 \frac{\partial^2 z}{\partial x^2} + 2xy \frac{\partial^2 z}{\partial x \partial y} + y^2 \frac{\partial^2 z}{\partial y^2} = \text{_____}$$

Options :

1. ✘  $n(n + 1)z$

2. ✔  $n(n - 1)z$

3. ✘  $(n - 1)z$

4. ✘  $nz$

Question Number : 86 Question Id : 81959913316 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $H = f(y - z, z - x, x - y)$ , then  $\frac{\partial H}{\partial x} + \frac{\partial H}{\partial y} + \frac{\partial H}{\partial z} = \text{_____}$

Options :

1. ✘ 1

2. ✘ -1

3. ✘ 2

4. ✔ 0

Question Number : 87 Question Id : 81959913317 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $z = f(x + ay) + \phi(x - ay)$ , then

Options :

$$\frac{\partial^2 z}{\partial y^2} = a^2 \frac{\partial^2 z}{\partial x^2}$$

1. ✓

$$\frac{\partial^2 z}{\partial x^2} = a^2 \frac{\partial^2 z}{\partial y^2}$$

2. ✗

$$\frac{\partial z}{\partial y} = a \frac{\partial z}{\partial x}$$

3. ✗

$$\frac{\partial z}{\partial x} = a \frac{\partial z}{\partial y}$$

4. ✗

Question Number : 88 Question Id : 81959913318 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $z = \tan^{-1}\left(\frac{y}{x}\right)$ , then  $dz =$

Options :

$$\frac{xdy+ydx}{x^2+y^2}$$

1. ✗

$$\frac{xdx-ydy}{x^2+y^2}$$

2. ✗

$$\frac{xdx+ydy}{x^2+y^2}$$

3. ✗

$$\frac{xdy-ydx}{x^2+y^2}$$

4. ✓

Question Number : 89 Question Id : 81959913319 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

At  $x=1$ , the function  $f(x)=8x^5-15x^4+10x^3$

Options :

- 1. ✘ has maximum value
- 2. ✘ has minimum value
- 3. ✔ has neither maximum nor minimum
- 4. ✘ has either maximum or minimum

Question Number : 90 Question Id : 81959913320 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If  $u = x^2(y - z) + y^2(z - x) + z^2(x - y)$ , then  $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} =$  \_\_\_\_\_

Options :

- 1. ✘ 1
- 2. ✔ 0
- 3. ✘  $x + y + z$
- 4. ✘  $x^2 + y^2 + z^2$

Question Number : 91 Question Id : 81959913321 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$u = \begin{vmatrix} x^2 & y^2 & z^2 \\ x & y & z \\ 1 & 1 & 1 \end{vmatrix}, \text{ then } \frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} = \underline{\hspace{2cm}}$$

Options :

1. ✘  $x + y + z$

2. ✔  $0$

3. ✘  $1$

4. ✘  $x^2 + y^2 + z^2$

Question Number : 92 Question Id : 81959913322 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \sin v = \frac{x+2y+3z}{\sqrt{x^8+y^8+z^8}}, \text{ then } x \frac{\partial v}{\partial x} + y \frac{\partial v}{\partial y} + z \frac{\partial v}{\partial z} = \underline{\hspace{2cm}}$$

Options :

1. ✔  $-3 \tan v$

2. ✘  $3 \tan v$

3. ✘  $-3 \cot v$

4. ✘  $3 \cot v$

Question Number : 93 Question Id : 81959913323 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The radius of curvature at the point  $\left(\frac{\pi}{4}, c\right)$  on the curve  $s = c \tan \psi$  is \_\_\_\_\_

Options :

1. ✘  $C \tan^2 \psi$

2. ✘  $C \sec^2 \psi$

3. ✘  $-2C$

4. ✔  $2C$

Question Number : 94 Question Id : 81959913324 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The radius of curvature of the curve  $y = e^x$  at the point  $(0, 1)$  is

Options :

1. ✘ 0

2. ✘ 1

3. ✔  $2\sqrt{2}$

4. ✘  $3\sqrt{2}$

Question Number : 95 Question Id : 81959913325 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The radius of curvature at the origin for  $x^3 + y^3 - 2x^2 + 6y = 0$  is \_\_\_\_\_

Options :



1. ✘  $\frac{1}{2}$

2. ✘  $\frac{1}{3}$

3. ✘  $\frac{2}{3}$

4. ✔  $\frac{3}{2}$

Question Number : 96 Question Id : 81959913326 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Locus of centre of curvature is known as

Options :

1. ✘ circle of curvature

2. ✘ chord of curvature

3. ✔ Evolute

4. ✘ Involutives

Question Number : 97 Question Id : 81959913327 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Envelope of the family of the straight line  $y = mx + \frac{1}{m}$  is \_\_\_\_\_

Options :

1. ✓  $y^2 = 4x$

2. ✗  $x^2 = 4y$

3. ✗  $x^2 + y^2 = 1$

4. ✗  $xy = 1$

Question Number : 98 Question Id : 81959913328 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The length of the arc of the curve  $y = \log \sec x$  between  $x=0$  to  $x = \frac{\pi}{3}$  is \_\_\_\_\_

Options :

1. ✗  $\log(2 - \sqrt{3})$

2. ✓  $\log(2 + \sqrt{3})$

3. ✗  $2\log 3$

4. ✗  $\frac{1}{2} \log 3$

Question Number : 99 Question Id : 81959913329 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Rectification is the process of evaluating the

Options :

1. ✗ double integrals

multiple integrals

2. ✘

length of arcs of plane curves

3. ✔

area under plane curves.

4. ✘

**Question Number : 100 Question Id : 81959913330 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The whole length of the asteroid  $x^{2/3} + y^{2/3} = a^{2/3}$  is \_\_\_\_\_

Options :

1. ✘ 2a

2. ✘ 4a

3. ✘ 8a

4. ✔ 6a

## Analytical Ability

Section Id :	819599260
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	33
Number of Questions to be attempted :	33
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599296
Question Shuffling Allowed :	Yes

**Question Id : 81959913331 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (101 to 110)**

In each of the following questions (101 to 110), two statements I and II are given. Answer the questions by selecting one of the options as follows.

1. Select option 1 if the data given in statement I alone is sufficient to answer the question.
2. Select option 2 if the data given in statement II alone is sufficient to answer the question.
3. Select option 3 if the data given in both statements I and statement II put together are sufficient but neither of the statements alone is sufficient to answer the question.
4. Select option 4 if the data given in both statements I and II put together are not sufficient and additional data is needed to answer the question.

**Sub questions**

**Question Number : 101 Question Id : 81959913332 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

What is the colour of fresh grass?

Statement I: Blue is called green, red is called orange, and orange is called Yellow

Statement II: Yellow is called white, white is called black, and green is called brown and brown is called purple.

**Options :**

1. ✘ 1

2. ✔ 2

3. ✘ 3

4. ✘ 4

Question Number : 102 Question Id : 81959913333 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What is the code for 'Sky' in the code language?

Statement I: In the code language 'Sky is cleav' is written as 'de va fa'

Statement II: In the same code languages 'make it cleav' is written as 'de ga jo'

Options :

- 1. ✘ 1
- 2. ✘ 2
- 3. ✘ 3
- 4. ✔ 4

Question Number : 103 Question Id : 81959913334 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

How is D related to A?

Statement I: B is brother of A

Statement II: B is O's Son

Options :

- 1. ✘ 1
- 2. ✘ 2
- 3. ✘ 3
- 4. ✔ 4

Question Number : 104 Question Id : 81959913335 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What day is the fourteenth of a given month?

Statement I: The last day of month is Wednesday

Statement II: The third Saturday of the month was seventeenth

Options :

1. ✘ 1
2. ✔ 2
3. ✘ 3
4. ✘ 4

Question Number : 105 Question Id : 81959913336 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the area of rectangular path

Statement I: The perimeter of the plot is 208 meters

Statement II: The length is more than the breadth by 4 meters

Options :

1. ✘ 1
2. ✘ 2
3. ✔ 3
4. ✘ 4

Question Number : 106 Question Id : 81959913337 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In which year was Rahul born?

Statement I: Rahul at present is 25 years younger to his mother

Statement II: Rahul's brother, who was born in 1964, is 35 years younger than his mother

Options :

1. ✘ 1

2. ✘ 2

3. ✔ 3

4. ✘ 4

Question Number : 107 Question Id : 81959913338 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How long will it take to empty the tank if both the inlet pipe A and outlet pipe B are opened simultaneously.

Statement I: A can fill tank in 16 minutes

Statement II: B can empty the full tank on 8 minutes

Options :

1. ✘ 1

2. ✘ 2

3. ✔ 3

4. ✘ 4

Question Number : 108 Question Id : 81959913339 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0



What is the average speed of the car over the entire distance?

Statement I: The car covers the whole distance in four equal stretches at speeds of 10Kmph, 20Kmph, 30Kmph and 60Kmph respectively.

Statement II: The total time taken is 36 minutes.

Options :

- 1. ✓ 1
- 2. ✗ 2
- 3. ✗ 3
- 4. ✗ 4

Question Number : 109 Question Id : 81959913340 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The area of a rectangular equal to the area of right angled triangle. What is the length of the rectangle?

Statement I: The base of the triangle is 40 cm

Statement II: The height of the triangle is 50cm

Options :

- 1. ✗ 1
- 2. ✗ 2
- 3. ✗ 3
- 4. ✓ 4

Question Number : 110 Question Id : 81959913341 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0



Among D, E, J, P and A who reached office last?

Statement I: E and J reached office together

Statement II: Only D and P reached office a head of J.

Options :

- 1. ✘ 1
- 2. ✘ 2
- 3. ✔ 3
- 4. ✘ 4

Sub-Section Number :

2

Sub-Section Id :

819599297

Question Shuffling Allowed :

Yes

Question Number : 111 Question Id : 81959913342 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The next term in the sequence 6, 11, 21, 36, 56, \_\_\_ is

Options :

- 1. ✘ 42
- 2. ✘ 51
- 3. ✔ 81
- 4. ✘ 91

Question Number : 112 Question Id : 81959913343 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The next fraction in the sequence  $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \underline{\hspace{2cm}}$  is

Options :

1.   $\frac{9}{32}$

2.   $\frac{10}{17}$

3.   $\frac{11}{34}$

4.   $\frac{12}{35}$

Question Number : 113 Question Id : 81959913344 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The missing term in the sequence 1, 3, 3, 6, 7, 9, ---, 12, 21

Options :

1.  10

2.  11

3.  12

4.  13

Question Number : 114 Question Id : 81959913345 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The missing term in the sequence 589654237, 89654237, 8965423, 965423, \_\_\_ is

Options :

1. ✘ 58965

2. ✘ 65423

3. ✘ 89654

4. ✔ 96542

Question Number : 115 Question Id : 81959913346 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The missing term in the sequence  $\frac{2}{\sqrt{5}}, \frac{3}{5}, \frac{4}{5\sqrt{5}}, \frac{5}{25}, \dots$  is

Options :

1. ✘  $\frac{6}{5\sqrt{5}}$

2. ✔  $\frac{6}{25\sqrt{5}}$

3. ✘  $\frac{6}{125}$

4. ✘  $\frac{7}{25}$

Question Number : 116 Question Id : 81959913347 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a number of the series 1, 8, 27, 64, 125, \_\_\_\_\_?

Options :

1. ✔ 256

512

2. ✘

729

3. ✘

1000

4. ✘

**Question Number : 117 Question Id : 81959913348 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The 21<sup>st</sup> term of the series 3, 9, 15, -----is

**Options :**

117

1. ✘

12

2. ✘

123

3. ✔

129

4. ✘

**Question Number : 118 Question Id : 81959913349 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Which term of the series 5, 8, 11, 14, -----is 320.

**Options :**

104<sup>th</sup>

1. ✘

105<sup>th</sup>

2. ✘

3. ✓ 106<sup>th</sup>

4. ✗ 64<sup>th</sup>

**Question Number : 119 Question Id : 81959913350 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The missing term in the series 625, 5, 125, 25, \_\_\_\_, 5 is

**Options :**

1. ✗ 5

2. ✗ 25

3. ✓ 125

4. ✗ 625

**Question Number : 120 Question Id : 81959913351 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The missing alphabet in the box is

H	K	Q
C	G	O
E	J	?

**Options :**

1. ✓ T

2. ✗ P

N

3. ✖

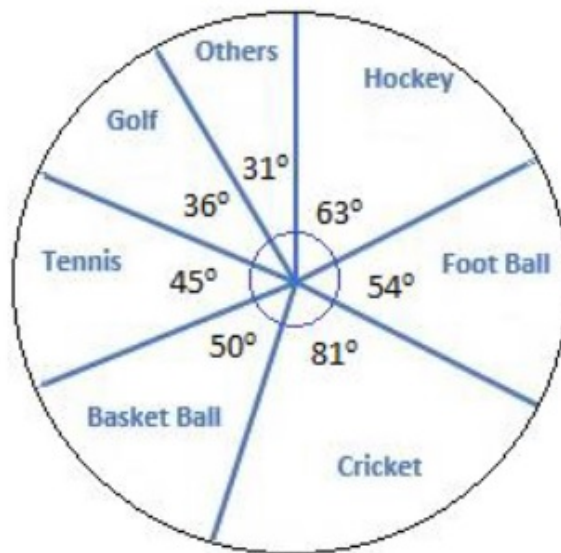
L

4. ✖

Sub-Section Number : 3  
Sub-Section Id : 819599298  
Question Shuffling Allowed : Yes

Question Id : 81959913352 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group  
Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum  
Instruction Time : 0  
Question Numbers : (121 to 125)

The circle graph given below shows the spending of a country on various sports during a particular year. Study the graph and answer the questions given below (Q. No. 121-125).



Sub questions

Question Number : 121 Question Id : 81959913353 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What percent of the total spending is spent on tennis?

Options :

12 $\frac{1}{2}$ %

1. ✓

22 $\frac{1}{2}$ %

2. ✗

25%

3. ✗

45%

4. ✗

**Question Number : 122 Question Id : 81959913354 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

How much percent more is spent on Hockey than that on Golf?

**Options :**

27%

1. ✗

35%

2. ✗

37.5%

3. ✗

75%

4. ✓

**Question Number : 123 Question Id : 81959913355 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

If the total amount spent on sports during the year was Rs.2 crores, the amount spent on cricket and Hockey together was

**Options :**

Rs 8,00,000

1. ✗

2. ✓ Rs 80,00,000

3. ✗ Rs 1,20,00,000

4. ✗ Rs 1,60,00,000

**Question Number : 124 Question Id : 81959913356 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

If the total amount spent on sports during the year be 1,80,00,000. The amount spent on basketball exceeds that on Tennis by

**Options :**

1. ✓ Rs 2,50,000

2. ✗ Rs 3,60,000

3. ✗ Rs 3,75,000

4. ✗ Rs 4,10,000

**Question Number : 125 Question Id : 81959913357 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

How much percent less is spent on Football than that on Cricket?

**Options :**

1. ✗  $22\frac{2}{9}\%$

2. ✗ 27%



3. ✓  $33\frac{1}{3}\%$

$37\frac{1}{2}\%$

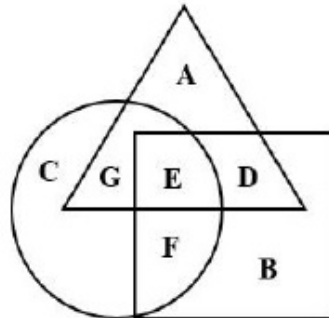
4. ✗

Sub-Section Number : 4  
Sub-Section Id : 819599299  
Question Shuffling Allowed : Yes

Question Id : 81959913358 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (126 to 130)

Study the diagram given below to answer the following questions below it (Q. No. 126-130).



The triangle in the above figure depicts women in villages, the square depicts the unemployed women and the circle depicts the educated women.

Sub questions

Question Number : 126 Question Id : 81959913359 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Educated employed women in villages are represented by

Options :

1. ✗ D

2. ✘ E

3. ✘ F

4. ✔ G

Question Number : 127 Question Id : 81959913360 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What does letter D represent?

Options :

1. ✘ Uneducated women in villages

2. ✔ Unemployed women in villages who are not educated

3. ✘ Educated unemployed women

4. ✘ Educated employed women

Question Number : 128 Question Id : 81959913361 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Educated unemployed women in villages are represented by

Options :

1. ✘ A

2. ✘ B

3. ✘ D

4. ✓ E

**Question Number : 129 Question Id : 81959913362 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Educated unemployed women are represented by

**Options :**

1. ✗ B and C

2. ✗ D and E

3. ✓ E and F

4. ✗ G and E

**Question Number : 130 Question Id : 81959913363 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Women in Villages neither unemployed nor educated

**Options :**

1. ✗ G

2. ✗ D

3. ✓ A

4. ✗ C

**Sub-Section Number :  
Sub-Section Id :**

5  
819599300

Question Shuffling Allowed :

Yes

Question Number : 131 Question Id : 81959913364 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

In a certain code language OPERATION is written as NODQBUJPO. How is  
INVISIBLE written in that code.

Options :

JOWJTJCMF

1. ✘

JOWJTHAKD

2. ✘

HMUHTJCMF

3. ✔

HMUHTHAKD

4. ✘

Question Number : 132 Question Id : 81959913365 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If in a certain code LUTE is written as MUTE and FATE is written as GATE, then  
how will BLUE be written in that code.

Options :

CLUE

1. ✔

GLUE

2. ✘

FLUE

3. ✘

SLUE

4. ✘

Question Number : 133 Question Id : 81959913366 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If SPICER is written as PSCIRE then how would COMMON be written in that code.

Options :

- 1.  OCOMMO ✖
- 2.  OCMMNO ✔
- 3.  OCMOMN ✖
- 4.  OCMMON ✖

Question Number : 134 Question Id : 81959913367 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If E=5, PEN=35, then PAGE=?

Options :

- 1.  27 ✖
- 2.  28 ✖
- 3.  29 ✔
- 4.  36 ✖

Question Number : 135 Question Id : 81959913368 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If RED is coded as 3 then how would GREEN be coded

Options :

- 1. ✘ 10
- 2. ✔ 5
- 3. ✘ 3
- 4. ✘ 4

Question Number : 136 Question Id : 81959913369 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If DRIVER =12, PEDESTRIAN=20, ACCIDENT=16, then CAR=?

Options :

- 1. ✘ 3
- 2. ✔ 6
- 3. ✘ 8
- 4. ✘ 10

Question Number : 137 Question Id : 81959913370 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

If E=5 and HOTEL=12, how will you code LAMB?

Options :

- 1. ✔ 7
- 2. ✘ 10

3. ✖ 26

4. ✖ 28

**Question Number : 138 Question Id : 81959913371 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

If 'Pen' is 'Table', 'Table' is 'Fan', 'Fan' is 'Chair', and 'Chair' is 'Roof', then on which of the following will a person sit?

**Options :**

1. ✖ Fan

2. ✖ Chair

3. ✔ Roof

4. ✖ Table

**Question Number : 139 Question Id : 81959913372 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

If 'White' is called 'blue', 'blue' is called 'red', 'red' is called 'yellow', 'yellow' is called 'green', 'green' is called 'black', 'black' is called 'violet' and 'violet' is called orange. What would be the colour of human blood?

**Options :**

1. ✖ Red

2. ✖ Green

Yellow

3. ✓

Violet

4. ✗

**Question Number : 140 Question Id : 81959913373 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

In certain code language '123' means 'hot filtered coffee', '365' means 'very hot day', and '589' means 'day and night'. Which digit stands for 'very'?

**Options :**

9

1. ✗

5

2. ✗

8

3. ✗

6

4. ✓

**Question Number : 141 Question Id : 81959913374 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Introducing Reena, Mounica said "She is the only daughter of my father's only daughter". How is Mounica related to Reena?

**Options :**

Aunt

1. ✗

Niece

2. ✗

Cousin

3. ✗



4. ✓ Mother

**Question Number : 142 Question Id : 81959913375 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

One day Ravi left home and cycled 10 KM southwards, turned right and cycled 5KM and turned right and cycled 10KM and turned left and cycled 10KM. How many kilometres will he have to cycle to reach his home straight?

**Options :**

1. ✗ 10KM

2. ✓ 15KM

3. ✗ 20KM

4. ✗ 25KM

**Question Number : 143 Question Id : 81959913376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Which of the following is not a leap year?

**Options :**

1. ✓ 700

2. ✗ 800

3. ✗ 1200

4. ✘ 2000

Question Number : 144 Question Id : 81959913377 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What was the day of the week on 4<sup>th</sup> June 2002?

Options :

1. ✘ Monday

2. ✔ Tuesday

3. ✘ Thursday

4. ✘ Friday

Question Number : 145 Question Id : 81959913378 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

If 7 spiders make 7 webs in 7 days then 1 spider will make 1 web in how many days?

Options :

1. ✘ 1

2. ✘  $\frac{7}{2}$

3. ✔ 7

4. ✘

Question Number : 146 Question Id : 81959913379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The angle between two hour division consecutively is

Options :

1. ✘  $20^\circ$

2. ✘  $12^\circ$

3. ✔  $30^\circ$

4. ✘  $60^\circ$

Question Number : 147 Question Id : 81959913380 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 18<sup>th</sup> February 2005 falls on Friday then what will be the day on 18<sup>th</sup> February 2007?

Options :

1. ✔ Sunday

2. ✘ Monday

3. ✘ Tuesday

4. ✘ Wednesday

Question Number : 148 Question Id : 81959913381 Question Type : MCQ Option Shuffling : Yes Display

Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If + means  $\times$ ,  $\times$  means  $-$ ,  $\div$  means  $+$  and  $-$  means  $\div$

the value of  $175 - 25 \div 5 + 20 \times 3 + 10$  ?

Options :

1.  77

2.  160

3.  240

4.  2370

Question Number : 149 Question Id : 81959913382 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How many A's are there in the following series which are immediately followed by B as well as immediately preceded by Z? AMBZANAABZABAZBAPZABAZAB

Options :

1.  Nil

2.  1

3.  2

4.  3

Question Number : 150 Question Id : 81959913383 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A bus for Delhi leaves every thirty minutes from a bus stand. An enquiry clerk told a passenger that the bus had already left ten minutes ago and next bus will leave at 9.35 AM. At what time did the enquiry clerk gave this information to passenger?

Options :

1. ✘ 9.10 AM
2. ✘ 8.55 AM
3. ✘ 9.08 AM
4. ✔ 9.15 AM

## Communicative English

Section Id :	819599261
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	42
Number of Questions to be attempted :	42
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599301
Question Shuffling Allowed :	Yes

Question Number : 151 Question Id : 81959913384 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Choose the synonym of the underlined word in the sentence from the alternatives given below:

This is quite a difficult plant for novice gardeners to grow.

Options :

Proficient

1. ✘

Veteran

2. ✘

Inexperienced

3. ✔

Loutish

4. ✘

Question Number : 152 Question Id : 81959913385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Choose the appropriate synonym of the word underlined in the following sentence:

Although she often disagreed with me she was always courteous.

Options :

Rude

1. ✘

Polite

2. ✔

Boorish

3. ✘

Uncouth

4. ✘

Question Number : 153 Question Id : 81959913386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

Choose the appropriate antonym of the word underlined in the following sentence:

My grandmother lamented the decline in moral standards in today's society.

Options :

1. ✘ Grieve
2. ✘ Mourn
3. ✘ Bewail
4. ✔ Rejoice

Question Number : 154 Question Id : 81959913387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the option that is the most opposite in meaning to the underlined word in the following sentence:

Attempts to restrict parking in the city centre have further aggravated the problem of traffic congestion.

Options :

1. ✔ Alleviate
2. ✘ Exacerbate
3. ✘ Heap on
4. ✘ Validate

Question Number : 155 Question Id : 81959913388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct spelling of the word from the choices given below:

Options :

1. ✘ Miscellaneous

2. ✘ Missellaneous

3. ✔ Miscellaneous

4. ✘ Miscellaneus

**Question Number : 156 Question Id : 81959913389 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Choose the correct spelling of the word from the choices given below:

**Options :**

1. ✘ Consciencious

2. ✔ Conscientious

3. ✘ Conssientious

4. ✘ Conssiencious

**Question Number : 157 Question Id : 81959913390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Choose the correct option that can be substituted for the words given below:

**Fear of being in closed spaces**

**Options :**



Agoraphobia

1. ✘

Acrophobia

2. ✘

Claustrophobia

3. ✔

Xenophobia

4. ✘

Question Number : 158 Question Id : 81959913391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct option that can be substituted for the words given below:

**The scientific study of insects**

Options :

Ornithology

1. ✘

Entomology

2. ✔

Anthropology

3. ✘

Numismatics

4. ✘

Question Number : 159 Question Id : 81959913392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct option that can be substituted for the words given below:

**Done or said without any preparation or thought**

Options :

Extempore

1. ✓

Geared up

2. ✘

Belligerent

3. ✘

Infallible

4. ✘

Question Number : 160 Question Id : 81959913393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with an appropriate word from the options given below:

In \_\_\_\_\_ surroundings a child's mind develops very well.

Options :

Congenital

1. ✘

Congeval

2. ✘

Concierge

3. ✘

Congenial

4. ✓

Question Number : 161 Question Id : 81959913394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with an appropriate word from the options given below:

I take it as a \_\_\_\_\_ when people say I look like my mother.

Options :

Compliment

1. ✓

Complainant

2. ✘

Complacent

3. ✘

Complement

4. ✘

Question Number : 162 Question Id : 81959913395 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Fill in the blank with an appropriate word from the options given below:

Audio-visual aids will \_\_\_\_\_ the teaching of science subjects in particular.

Options :

Federate

1. ✘

Felicitate

2. ✘

Facilitate

3. ✓

Fecund

4. ✘

Question Number : 163 Question Id : 81959913396 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What is the meaning of the Idiom 'see eye to eye'?

Options :

1. ✓ Agreeing with someone
2. ✗ Saying hello
3. ✗ Saying bye
4. ✗ Accidentally reveal a secret

Question Number : 164 Question Id : 81959913397 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

What is the meaning of the Idiom 'call it a day'?

Options :

1. ✗ To make a situation worse
2. ✗ Call somebody to work
3. ✓ Stop working on something
4. ✗ To start doing something

Question Number : 165 Question Id : 81959913398 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

What is the meaning of the Idiom 'a piece of cake'?

**Options :**

1. ✘ Something which is given for celebration
2. ✘ Something which is very tasty to eat
3. ✘ Something which is very beautiful to the eye
4. ✔ Something which is very easy to do

**Question Number : 166 Question Id : 81959913399 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Fill in the blank with an appropriate Phrasal Verb from the options given below:

**The meeting has been \_\_\_\_\_ for a week.**

**Options :**

1. ✘ Put on
2. ✘ Put out
3. ✔ Put off
4. ✘ Put in

**Question Number : 167 Question Id : 81959913400 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Fill in the blank with an appropriate Phrasal Verb from the options given below:

My passport \_\_\_\_\_ next month – I must get it renewed.

Options :

Runs over

1. ✘

Runs out

2. ✔

Runs off

3. ✘

Runs in

4. ✘

Question Number : 168 Question Id : 81959913401 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What is the meaning of the phrasal verb 'take something in'?

Options :

Calculate

1. ✘

Bought

2. ✘

Succeed

3. ✘

Understand

4. ✔

Question Number : 169 Question Id : 81959913402 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Fill in the blanks with the suitable articles from the given options:

\_\_\_\_\_ love is such \_\_\_\_\_ beautiful thing.

Options :

the, a

1. ✘

a, a

2. ✘

no article, a

3. ✔

no article, an

4. ✘

Question Number : 170 Question Id : 81959913403 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the suitable article from the options given below:

I met \_\_\_\_\_ European yesterday.

Options :

a

1. ✔

an

2. ✘

no article

3. ✘

the

4. ✘

Question Number : 171 Question Id : 81959913404 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blanks with the suitable articles from the given options:

\_\_\_\_\_ Ganges is \_\_\_\_\_ sacred river.

Options :

an, the

1. ✘

a, a

2. ✘

no article, the

3. ✘

the, a

4. ✔

Question Number : 172 Question Id : 81959913405 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the suitable preposition from the given options:

I congratulated my nephew \_\_\_\_\_ his success.

Options :

off

1. ✘

about

2. ✘

on

3. ✔

over

4. ✘

Question Number : 173 Question Id : 81959913406 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0



Choose the suitable preposition from the options given below:

The train was passing \_\_\_\_\_ a tunnel.

Options :

1. ✓ through

2. ✗ about

3. ✗ of

4. ✗ in

Question Number : 174 Question Id : 81959913407 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Fill in the blanks with the suitable prepositions from the given options:

Conservation groups have united \_\_\_\_\_ protest \_\_\_\_\_ the planned  
new road.

Options :

1. ✗ in, about

2. ✗ on, against

3. ✓ in, against

4. ✗ on, about

Question Number : 175 Question Id : 81959913408 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the appropriate question tag for the following:

He went home early, \_\_\_\_\_?

Options :

1. ✘ did he
2. ✔ didn't he
3. ✘ had he
4. ✘ hasn't he

Question Number : 176 Question Id : 81959913409 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the appropriate question tag for the following:

The trains are never on time, \_\_\_\_\_?

Options :

1. ✔ are they
2. ✘ aren't they
3. ✘ do they
4. ✘ don't they

Question Number : 177 Question Id : 81959913410 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the right option to convert the active sentence into a passive one.

**The Judge will look into the case.**

Options :

The case will have looked into by the Judge.

1. ✘

The case will be looked by the Judge.

2. ✘

The case will have been looked into by the Judge.

3. ✘

The case will be looked into by the Judge.

4. ✔

Question Number : 178 Question Id : 81959913411 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Choose the right option to convert the active sentence into a passive one.

**Rash driving causes many accidents.**

Options :

Many accidents will be caused by rash driving.

1. ✘

Many accidents are caused by rash driving.

2. ✔

Many accidents were caused by rash driving.

3. ✘

Many accidents will have been caused by rash driving.

4. ✘

Question Number : 179 Question Id : 81959913412 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the right passive voice form of the given sentence.

**Why has the officer punished the innocent boy?**

Options :

1. ✘ Why had the innocent boy been punished?
2. ✔ Why has the innocent boy been punished?
3. ✘ Why the innocent boy been punished?
4. ✘ Why the innocent boy had been punished?

Question Number : 180 Question Id : 81959913413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with correct form of the verb.

**The thief \_\_\_\_\_ before the police arrived.**

Options :

1. ✔ had escaped
2. ✘ escaped
3. ✘ has escaped
4. ✘ was escaped

Question Number : 181 Question Id : 81959913414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with correct form of the verb.

He \_\_\_\_\_ for a walk every morning.

Options :

1. ✘ go
2. ✔ goes
3. ✘ has gone
4. ✘ will go

Question Number : 182 Question Id : 81959913415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with correct form of the verb.

It \_\_\_\_\_ raining since 8 o' clock.

Options :

1. ✘ is raining
2. ✘ was raining
3. ✔ has been raining
4. ✘ have been raining

Question Number : 183 Question Id : 81959913416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the correct answer.

Neither Ram nor Raju \_\_\_\_\_ any right to the property.

Options :

will had

1. ✘

have

2. ✘

will have

3. ✘

has

4. ✔

Question Number : 184 Question Id : 81959913417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the correct answer.

Each of the boys \_\_\_\_\_ given a fountain pen.

Options :

was

1. ✔

have

2. ✘

were

3. ✘

has

4. ✘

Question Number : 185 Question Id : 81959913418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the correct option.

**Either Nazreen or her parents \_\_\_\_\_ responsible for the damage.**

**Options :**

will have

1. ✘

are

2. ✔

is

3. ✘

have

4. ✘

**Question Number : 186 Question Id : 81959913419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

**Identify a grammatically incorrect sentence from the options given below:**

**Options :**

If I am invited, I will attend the function.

1. ✘

If he studied hard, he would have passed the examination.

2. ✔

If my mother had corrected me, I would have become a police officer.

3. ✘

If I were you, I would marry her.

4. ✘

**Question Number : 187 Question Id : 81959913420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**



From the options given below, identify the part that has an error in the following sentence:

**She counted the books (A) to make sure that (B) none of them (C) were missing. (D)**

**Options :**

A

1. ✘

B

2. ✘

C

3. ✘

D

4. ✔

**Question Number : 188 Question Id : 81959913421 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

**Choose the correct sentence.**

**Options :**

It is harmful to brood of past failures

1. ✘

It is harmful to brood about past failures

2. ✘

It is harmful to brood upon past failures

3. ✘

It is harmful to brood over past failures

4. ✔



Question Number : 189 Question Id : 81959913422 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

**Choose the correct sentence.**

Options :

1. ✘ Lalitha is waiting since two hours to meet her friend.
2. ✘ Lalitha have been waiting since two hours to meet her friend.
3. ✘ Lalitha is waiting for two hours to meet her friend.
4. ✔ Lalitha has been waiting for two hours to meet her friend.

Question Number : 190 Question Id : 81959913423 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

**Choose the correct sentence.**

Options :

1. ✘ No sooner the tiger appeared then he shot it down.
2. ✘ No sooner did the tiger appear then he shot it down.
3. ✔ No sooner did the tiger appear than he shot it down.
4. ✘ No sooner the tiger did appear when he shot it down.

Sub-Section Id :

819599302

Question Shuffling Allowed :

Yes

Question Id : 81959913424 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (191 to 195)

**Read the following passage carefully and answer the questions from 191 to 195 that follow:**

Cardamom, the queen of all spices, has a history as old as the human race. It is the dried fruit of a herbaceous perennial plant. Warm humid climate, loamy soil rich in organic matter, distributed rainfall and special cultivation and processing methods all combine to make Indian cardamom truly unique in aroma, flavor, size and it has a parrot green color. Cardamom is an expensive spice, secondly to saffron. Indian cardamom is known in two main varieties: Malabar cardamom and Mysore cardamom. The Mysore variety contains leaves of cineol, limonene and hence is more aromatic. India is the world's largest producer and exporter of cardamom. Cardamom reaches at yielding stage two years after the plantation. Kerala is the main producer of cardamom and contributes up to 60% in total production. Karnataka produces around 25% of the total production. Ooty is the main producer of cardamom in Tamilnadu and contributes around 10-15% of the total production. Besides India, Guatemala also produces around 1,000-2,000 ton cardamom per year. Due to low quality of cardamom from Guatemala, it remains available at cheaper rates.

**Sub questions**

Question Number : 191 Question Id : 81959913425 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

**Mysore variety contains leaves of:**

**Options :**

Limonnine and sineol

1. ✘

Cineol and limonine

2. ✘

Limonene and cineol

3. ✔

Sineol and limonine

4. ✘

**Question Number : 192 Question Id : 81959913426 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

**Guatemala produces cardamom:**

**Options :**

More but poor in quality

1. ✔

Less but good in quality

2. ✘

More and good in quality

3. ✘

Less and poor in quality

4. ✘

**Question Number : 193 Question Id : 81959913427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

**Cardamom reaches at its yielding stage in:**

**Options :**

Immediately after the plantation

1. ✘

Depends upon the plantation

2. ✘

One year after the plantation

3. ✘

Two years after the plantation

4. ✔

Question Number : 194 Question Id : 81959913428 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

**Choose the synonym of the word 'distributor' given in the passage.**

Options :

Explorer

1. ✘

Buccaneer

2. ✘

Producer

3. ✘

Supplier

4. ✔

Question Number : 195 Question Id : 81959913429 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

**The synonym of the word 'fragrance' in the passage.**

Options :



Variety

1. ✘

Aroma

2. ✔

Pastel

3. ✘

Tint

4. ✘

Sub-Section Number : 3  
Sub-Section Id : 819599303  
Question Shuffling Allowed : Yes

Question Id : 81959913430 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group  
Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum  
Instruction Time : 0

Question Numbers : (196 to 200)

**Read the following passage carefully and answer the questions from 196 to 200 that follow:**

I was seven – year old. I had lived at the same place for all of my life but we were moving. We were moving from the farm with all of its animals, with its memories of searching for chicken eggs and with the black and white cows that had to be milked each day. We were going from the place of scrub pines, of pastures, of irrigation ditches to an unknown place, far, far away. We had worked hard to get ready. Finally, dad piled all of us into the car. As we began to drive away, I looked out of the rear window of the car. As I looked back, I saw my dog and my cats. I could not see my horse. I asked my father what would happen to these pets. All that dad could tell me was that they had to remain there, that they could not come with us. There was no explanation – merely the declaration that we must go. I was bitterly disappointed, so disappointed that this memory is still seared into me even forty – three years later. Why could my father not change this? I could not understand then but I do now. But still don't understand why there was no explanation.

**Sub questions**

Question Number : 196 Question Id : 81959913431 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

**The narrator remembering an episode of his childhood is now...**

Options :

Forty years old

1. ✘

Forty three years old

2. ✘

Fifty three years old

3. ✘

Fifty years old

4. ✔

Question Number : 197 Question Id : 81959913432 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

**The narrator's regret at that time was that...**

Options :

He would miss his books

1. ✘

He would miss his pets

2. ✔

He would miss his games

3. ✘

He would miss his friend

4. ✘

Question Number : 198 Question Id : 81959913433 Question Type : MCQ Option Shuffling : Yes Display  
Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A  
Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

**What was the feeling of the narrator when he missed his pets?**

Options :

1. ✓ He was feeling dejected
2. ✗ He was feeling blissful
3. ✗ He was feeling contended
4. ✗ He had no reaction

Question Number : 199 Question Id : 81959913434 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

**Leaving the farm, the child was very sad because he could not understand ...**

Options :

1. ✗ Why his mother could not change his father
2. ✗ Why his mother could not unpack the luggage
3. ✓ Why his father could not change the situation
4. ✗ Why his brother could not oppose his father

Question Number : 200 Question Id : 81959913435 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

**The verb form of 'explanation' is ...**

**Options :**

1. ✓ Explain

2. ✗ Explanatory

3. ✗ Explainable

4. ✗ Explicable