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.

Question Paper Name :	BSc Mathematics 3rd Aug 2021 Shift2
Subject Name :	BSc Mathematics
Creation Date :	2021-08-03 18:35:28
Duration :	180
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Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
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Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

BSc Mathematics

Group Number :	1
Group Id :	800894112
Group Maximum Duration :	0

Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No

Mathematics

Section Id :	800894435
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
Sub-Section Number :	1
Sub-Section Id :	800894495
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 80089422251 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $y = e^{\sin^{-1}x}$, then $(1-x^2)\frac{d^2y}{dx^2} - y =$

Options :

1. ✖ $2x\frac{dy}{dx}$

2. ✖ $3x\frac{dy}{dx}$

3. ✖ $-x\frac{dy}{dx}$

4. ✔ $x\frac{dy}{dx}$

Question Number : 2 Question Id : 80089422252 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For which of the following function Rolle's mean value theorem is applicable

Options :

1. ✖ $f(x) = x^2$ on $[1\ ,\ 2]$

2. ✖ $f(x) = (x-1)^{2/3}$ on $[0\ ,\ 2]$

3. ✔ $f(x) = \log\left(\frac{x^2+6}{5x}\right)$ on $[2\ ,\ 3]$

4. ✖ $f(x) = |x|$ on $[-1\ ,1]$

Question Number : 3 Question Id : 80089422253 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Suppose $a_0 + \frac{a_1}{2} + \frac{a_3}{3} + \cdots + \frac{a_n}{n+1} = 0,\ a_i \in R$. The number of roots of $a_0 + a_1 x + \cdots + a_n x^n = 0$ in the interval $(0\ ,1)$ is

Options :

1. ✖ 0

2. ✔ at least one

3. ✖ n

4. ✖ exactly 2

Question Number : 4 Question Id : 80089422254 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of $\lim_{x\to 0}\frac{\log\sin x}{\cot x}$

Options :

1. ✖ ∞

2. ✖ Does not exist

3. ✖ 1

4. ✔ 0

Question Number : 5 Question Id : 80089422255 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Envelope of the family $y = mx + 1 + m^2$ is

Options :

1. ✔ $x^2 = 4(1-y)$

2. ✖ $x^2 = 4(1+y)$

3. ✖ $y^2 = 4(1-x)$

4. ✖ $y^2 = 4(1+x)$

Question Number : 6 Question Id : 80089422256 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\frac{2y}{x^2+y^2}$

2. ✖ $\frac{2x}{(x^2+y^2)^2}$

3. ✖ $\frac{4xy}{(x^2+y^2)^3}$

4. ✔ $\frac{2(y^2-x^2)}{(x^2+y^2)^2}$

Question Number : 7 Question Id : 80089422257 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The degree of the homogeneous function $z = \frac{x^2}{y^2}\cos\left(1+\frac{y}{x}+\frac{x}{y}\right)$ is

Options :

1. ✖ 1

2. ✔ 0

3. ✖ -1

4. ✖ 2

Question Number : 8 Question Id : 80089422258 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For the curve $(x^2 + y^2)x - 2y^2 = 0$, which of the following is true?

Options :

1. ✔ The asymptote parallel to y-axis is $x - 2 = 0$, and no asymptote parallel to x-axis

2. ✖ Given curve does not have asymptotes

3. ✖ The asymptote parallel to x-axis is $y - 2 = 0$, and no asymptote parallel to y-axis

4. ✖ The curve represents straight line

Question Number : 9 Question Id : 80089422259 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An asymptote of the curve $y = \frac{x}{x^2+x-12}$ is

Options :

1. ✖ x=8

2. ✖ x=4

3. ✖ x=−3

4. ✔ x=3

Question Number : 10 Question Id : 80089422260 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Stationary points of the function $f(x,y) = x^3 + y^3 - 3x - 12y + 20$ are

Options :

1. ✖ $(1,2)$

2. ✖ This function does not have stationary points

3. ✔ $(1,2),\ (-1,-2),\ (1,-2),(-1,-2)$

4. ✖ $(-1,-2)$

Question Number : 11 Question Id : 80089422261 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the solution of the differential equation $\frac{dy}{dx} = \frac{y\,logy}{logy - x}$ is $2xlogy - f(y) = c$, then $f(y) =$

Options :

1. ✔ $(\log y)^2$

2. ✖ $(\log y)$

3. ✖ $(logy)^3$

4. ✖ $(\log y)^{-1}$

Question Number : 12 Question Id : 80089422262 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The integrating factor of the differential equation $(y^4 + 2y)dx + (xy^3 + 2y^2 - 4x)dy = 0$ is

Options :

1. ✖ $\frac{1}{x^3}$

2. ✖ $\frac{1}{y}$

3. ✖ $\frac{1}{x}$

4. ✔ $\frac{1}{y^3}$

Question Number : 13 Question Id : 80089422263 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If a curve $y = f(x)$ passes through the point $(0,1)$ and $\frac{dy}{dx} = 2\,x\,y^2e^{-x} + y$ is

Options :

1. ✔ $y(1 - x^2) = e^x$

2. ✖ $y(1 + x^2) = e^x$

3. ✖ $x(1-y^2)=e^x$

4. ✖ $y(1-x^2)=e^{-x}$

Question Number : 14 Question Id : 80089422264 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The general solution of $\frac{dx}{y-z}=\frac{dy}{z-x}=\frac{dz}{x-y}$ is (Here c_1 , c_2 are arbitrary constants)

Options :

1. ✖ $x-y+z=c_1 \;\; ; \;\; x^2+y^2=c_2$

2. ✖ $xy-yz=c_1 \;\; ; \;\; x^2+z^2=c_2$

3. ✔ $x+y+z=c_1 \;\; ; \;\; x^2+y^2+z^2=c_2$

4. ✖ $x+y-2z=c_1 \;\; ; \;\; x^2+3y^2+5z^2=c_2$

Question Number : 15 Question Id : 80089422265 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The solution of $y=2x\frac{dy}{dx}+\left(\frac{dy}{dx}\right)^3$ in parametric form with 'a' as parameter is

Options :

1. ✔ $y=2ax+a^3 \;\; , \;\; y=\frac{2c}{a}-\frac{a^3}{2}$

2. ✖ $y=2ax+a^3 \;\; , \;\; y=2ac-\frac{a^3}{2}$

3. ✖ $y = 2ax + a^3$, $y = 2ac + \frac{a^3}{2}$

4. ✖ $y = 2ax + a^3$, $y = \frac{a}{2c} - \frac{a^3}{2}$

Question Number : 16 Question Id : 80089422266 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $p = \frac{dy}{dx}$, then the general solution of $x^2p + xyp - 6y^2 = 0$ is (Here c is constant)

Options :

1. ✖ $(y^2 - cx^2)(y^3x - c) = 0$

2. ✖ $(x - cy^2)(x^2y^2 - c) = 0$

3. ✔ $(y - cx^2)(yx^3 - c) = 0$

4. ✖ $(xy^3 - c)(x - cy^2) = 0$

Question Number : 17 Question Id : 80089422267 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The integrating factor of $\frac{dx}{dy} + \frac{x}{y} = 1$ is

Options :

1. ✖ y^2

2. ✖ x^2

3. ✔ y

4. ✖ x

Question Number : 18 Question Id : 80089422268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The general solution of the equation $y = 2px + p^2y$ is $\left(\text{where } p = \frac{dy}{dx}\right)$ (Here c is an arbitray constant)

Options :

1. ✔ $2xc - y^2 + c^2 = 0$

2. ✖ $px = c$

3. ✖ $pxy = c$

4. ✖ $xy = c$

Question Number : 19 Question Id : 80089422269 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The solution of $xdx = -ydy = (x^2 + y^2)dz$ is

Options :

1. ✔ $2x^2z + 2y^2z - x^2 = f(x^2 + y^2)$

2. ✖ $2x^2z + 2y^2z + x^2 = f(x^2 + y^2)$

3. ✖

$2x^2z + 2y^2z - x^2 = f(x^2 - y^2)$

4. ✖ $2x^2z + 2y^2z + x^2 = f(x^2 - y^2)$

Question Number : 20 Question Id : 80089422270 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The general solution of $xy(y - px) = x + yp$ is $\left(\text{where } p = \frac{dy}{dx}\right)$

Options :

1. ✖ $x^2 = y^2 + c + 1$

2. ✖ $x^2 = cy^2 + c + 1$

3. ✖ $y^2 = cx + c + 1$

4. ✔ $y^2 = cx^2 + c + 1$

Question Number : 21 Question Id : 80089422271 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Particular integral of the differential equation $\frac{d^2y}{dx^2} + y = 2\,e^x$ is

Options :

1. ✖ $3\,e^x$

2. ✖ $\frac{1}{2}e^x$

3. ✖ $2\,e^{x}$

4. ✔ e^{x}

Question Number : 22 Question Id : 80089422272 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The particular solution of $(D^2-2D+5)y=0$, $\left(\text{where } D=\frac{d}{dx}\right)$, when $y=0$ and $\frac{dy}{dx}=4$ at $x=0$ is

Options :

1. ✖ $y=3\cos x+4\sin x$

2. ✔ $y=2e^{x}\sin 2x$

3. ✖ $y=4\sin x$

4. ✖ $y=4(e^{x}-1)$

Question Number : 23 Question Id : 80089422273 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The roots of auxiliary equation of $\frac{d^4y}{dx^4}+4y=0$ are

Options :

1. ✖ $-2\pm i\ ,\ 2\pm i$

2. ✖ $\pm 1\ ,\ \pm i$

3. ✔ $-1\pm i\ ,\ 1\pm i$

4. ✖ $-1 \pm \sqrt{2}\, i \ , \ 1 \pm \sqrt{2}\, i$

Question Number : 24 Question Id : 80089422274 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The particular integral of $\frac{d^2y}{dx^2} + \frac{dy}{dx} = x^2 + 2x$ is $\left(\text{where } D = \frac{d}{dx}\right)$

Options :

1. ✔ $\frac{x^3}{3}$

2. ✖ $\frac{x^2}{6}$

3. ✖ $-\frac{x}{2}$

4. ✖ 5

Question Number : 25 Question Id : 80089422275 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If D^n denotes the operator $\frac{d^n}{dx^n}$, then $\frac{2}{D^2-2D+4}(e^x cosx) =$

Options :

1. ✔ $e^x \, cosx$

2. ✖ $2e^x \, cosx$

3. ✖ $\frac{1}{2}e^x \, cosx$

4. ✖ $-\frac{1}{2}e^x \cos x$

Question Number : 26 Question Id : 80089422276 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Particular integral of $(D^2 + D + 1)y = 3x^2e^x$ is $\left(\text{where } D = \frac{d}{dx}\right)$

Options :

1. ✖ $\frac{1}{3}e^x(3x^2 - 6x - 4)$

2. ✖ $\frac{1}{3}e^x(3x^2 + 6x + 4)$

3. ✖ $\frac{1}{3}e^x(-3x^2 + 6x - 4)$

4. ✔ $\frac{1}{3}e^x(3x^2 - 6x + 4)$

Question Number : 27 Question Id : 80089422277 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The partial differential equation for the family of surfaces $z = f(x^2 - xy + y^2)$ is
(Here f is an arbitrary function, p and q are the partial derivatives of z with respect to x and y respectively)

Options :

1. ✖ $px - qy = 2xp - 2yq$

2. ✖ $px - qy = 2xq - 2yp$

3. ✔ $px - qy = 2yp - 2xq$

4. ✖ $px + qy = 2yp + 2xq$

Question Number : 28 Question Id : 80089422278 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A particular solution of $\frac{\partial^2 z}{\partial x^2} + z = 0$, when $x = 0$, $z = e^y$ and $\frac{\partial z}{\partial x} = 1$ is

Options :

1. ✖ $z = \sin x - e^x \cos y$

2. ✖ $z = \cos x - e^y \sin y$

3. ✔ $z = \sin x + e^y \cos x$

4. ✖ $z = \cos x + e^x \sin x$

Question Number : 29 Question Id : 80089422279 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The solution of $p - q^2 = 1$ is (where $p = \frac{\partial z}{\partial x}$ and $q = \frac{\partial z}{\partial y}$)

Options :

1. ✖ $z = ax + (a^2 - 1)y + c$

2. ✖ $z = ax + (a^2 + 1)y + c$

3. ✔ $z = ax + \left(\sqrt{a-1}\right)y + c$

4. ✖ $z = ax + 2(\sqrt{a-1})y + c$

Question Number : 30 Question Id : 80089422280 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The complete solution of $(x^2 - y^2)p + (y^2 - zx)q = z^2 - xy$ is
(Here $p = \frac{\partial z}{\partial x}, q = \frac{\partial z}{\partial y}$ and ϕ is an arbitrary function)

Options :

1. ✖ $\phi(x - y, z - x) = 0$

2. ✖ $\phi(y - z, z - x) = 0$

3. ✖ $\phi\left(\frac{x-y}{x-z}, \frac{y-x}{x-z}\right) = 0$

4. ✔ $\phi\left(\frac{x-y}{y-z}, \frac{y-z}{z-x}\right) = 0$

Question Number : 31 Question Id : 80089422281 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $a_n = \sum_{k=1}^{n}(\frac{1}{k(k+1)})$, then $\lim_{n\to\infty} a_n =$

Options :

1. ✔ 1

2. ✖ 0

3. ✖ 2

4. ✖ 3

Question Number : 32 Question Id : 80089422282 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$\lim_{n\to\infty}\left(1-\frac{1}{n^2}\right)^{n^2} =$

Options :

1. ✔ $\frac{1}{e}$

2. ✖ $\frac{2}{e}$

3. ✖ $\frac{3}{e}$

4. ✖ $\frac{4}{e}$

Question Number : 33 Question Id : 80089422283 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $t_1 = 1$ and $t_{n+1} = \frac{4n^2-1}{4n^2}\ t_n$ for $n \geq 1$ then $t_{n+1} =$

Options :

1. ✔ $\frac{((2n)!)^2(2n+1)}{2^{4n}(n!)^4}$

2. ✖ $\frac{((2n)!)^2(2n-1)}{2^{4n}(n!)^4}$

3. ✖ $\frac{((2n)!)^2(2n+1)}{2^{2n}(n!)^2}$

4. ✖ $\frac{((2n)!)^2(2n-1)}{2^{2n}(n!)^2}$

Question Number : 34 Question Id : 80089422284 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is an increasing sequence ?

Options :

1. ✔ $x_n = n^2 + 2n + 1, \forall\ n \geq 1$

2. ✖ $x_n = \frac{5}{n+3}, \forall\ n \geq 1$

3. ✖ $x_n = \frac{1}{n^2}, \forall\ n \geq 1$

4. ✖ $x_n = \frac{1}{n^2+3}, \forall\ n \geq 1$

Question Number : 35 Question Id : 80089422285 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $a_n = \sin\frac{n\pi}{4}$, then $\lim_{n\to\infty} \sup a_n =$

Options :

1. ✔ 1

2. ✖ $\frac{1}{\sqrt{2}}$

3. ✖ $\frac{\sqrt{3}}{2}$

4. ✖ $\frac{1}{2}$

Question Number : 36 Question Id : 80089422286 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following series is convergent?

Options :

1. ✔ $\sum_{n=1}^{\infty} \frac{1}{n^3+4}$

2. ✖ $\sum_{n=1}^{\infty} \frac{5n+13}{n+11}$

3. ✖ $\sum_{n=1}^{\infty} (\frac{100}{75})^n$

4. ✖ $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n}+1}$

Question Number : 37 Question Id : 80089422287 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The sum of the series $\sum_{n=1}^{\infty} \frac{2n-1}{3^{n+1}} =$

Options :

1. ✖ $\frac{1}{2}$

2. ✔ $\frac{1}{3}$

3. ✖ $\frac{1}{4}$

4. ✖ 2

Question Number : 38 Question Id : 80089422288 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following series is convergent?

Options :

1. ✖ $\sum_{n=1}^{\infty} \frac{n}{5n^2+3}$

2. ✖ $\sum_{n=1}^{\infty} (\sqrt{n+1} - \sqrt{n})$

3. ✖ $\sum_{n=1}^{\infty} (\frac{50}{n^2} + \frac{4}{3n})$

4. ✔ $\sum_{n=1}^{\infty} \frac{n}{8^n}$

Question Number : 39 Question Id : 80089422289 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A divergent series among the following is

Options :

1. ✖ $\sum \frac{n+1}{n^3+2}$

2. ✖ $\sum \frac{n}{\frac{5}{n^2}+1}$

3. ✔ $\sum \frac{n\sqrt{n}+n}{n\sqrt{n}+2}$

4. ✖ $\sum \frac{n+1}{n^5+5}$

Question Number : 40 Question Id : 80089422290 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$u_n > 0 \ \forall n,$ and the series $u_1 - u_2 + u_3 - u_4 + \cdots$ converges, if

Options :

1. ✔ $u_{n+1} \leq u_n \ \ \forall n$ and $\lim_{n\to\infty} u_n = 0$

2. ✖ $\lim_{n\to\infty} u_n \neq 0$

3. ✖ $u_{n+1} > u_n \ \forall n$

4. ✖ $\lim_{n\to\infty} u_n = \infty$

Question Number : 41 Question Id : 80089422291 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The radius of convergence of the power series $\sum_{n=0}^{\infty} 3^{-n}x^{2n}$ is

Options :

1. ✖ $\frac{1}{\sqrt{3}}$

2. ✖ $\sqrt[3]{2}$

3. ✔ $\sqrt{3}$

4. ✖ $\frac{1}{\sqrt[3]{2}}$

Question Number : 42 Question Id : 80089422292 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the sequence $\{f_n\}$, where $f_n(x) = \frac{x}{1+nx^2}, \quad x \in \mathbb{R}$

If $f(x) = \lim_{n\to\infty} f_n(x)$, then $M_n = \sup_x |f_n(x) - f(x)|$ is

Options :

1. ✔ $\frac{1}{2\sqrt{n}}$

2. ✖ $\frac{1}{\sqrt{n}}$

3. ✖ $\sqrt{n}$

4. ✖ $\frac{2}{\sqrt{n}}$

Question Number : 43 Question Id : 80089422293 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $a_n = \sqrt[n]{n}$, then $\lim_{n\to\infty} \sup a_n =$

Options :

1. ✔ 1

2. ✖ 0

3. ✖ ∞

4. ✖ $-\infty$

Question Number : 44 Question Id : 80089422294 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the series of functions $\sum(1-x^2)x^n$ on $[0,1]$ then which of the following is true ?

Options :

1. ✖ Each term of the series is continuous on [0,1] and the series converges uniformly to the function (1+x) .

2. ✖ Each term of the series is NOT continuous on [0,1] and the series converges uniformly to the function (1+x) .

3. ✖ Each term of the series is continuous on [0,1] and the series does NOT converges uniformly to the function (1+2x) .

4. ✔ Each term of the series is continuous on [0,1] and the series does not converges uniformly to the function (1+x) .

Question Number : 45 Question Id : 80089422295 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $f_n(x) = \frac{1+\sin^2 nx}{n\sqrt{n}}$, $x \in R$, $n \in N$ then the sequence $\{f_n(x)\}$ is

Options :

1. ✔ Converges uniformly on R

2. ✖ Converges point wise but not uniformly on R

3. ✖ Converges at no point of R

4. ✖ Converges at only one point 0

Question Number : 46 Question Id : 80089422296 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the sequence $\{f_n\}$, where $f_n(x) = \frac{nx}{e^{nx^2}}$, $x \in [0,1]$. If $f(x) = \lim_{n\to\infty} f_n(x)$, then

Options :

1. ✔ $\lim_{n\to\infty} \int_0^1 f_n(x)dx \neq \int_0^1 f(x)dx$

2. ✖ $\lim_{n\to\infty} \int_0^1 f_n(x)dx \neq$ a finite quantity

3. ✖ $\lim_{n\to\infty} \int_0^1 f_n(x)dx = \int_0^1 f(x)dx$

4. ✖ $\int_0^1 f(x)dx$ does not exist

Question Number : 47 Question Id : 80089422297 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Define $f(x) = \begin{cases} 0, & \text{if } x \in Q \cap [1,2] \\ 1, & \text{if } x \in (R-Q) \cap [1,2] \end{cases}$. For any partition P of [1,2], L(f, P) =

Options :

1. ✖ 1

2. ✔ 0

3. ✖ Can not be found

4. ✖ 2

Question Number : 48 Question Id : 80089422298 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the function f on [a, b] defined as $f(x) = \begin{cases} 1, if\ x\ is\ rational \\ -1, if\ x\ is\ irrational \end{cases}$. Which of the following is correct?

Options :

1. ✖ f is integrable, and |f| is not integrable

2. ✖ f is not integrable, and |f| is not integrable

3. ✔ f is not integrable, and |f| is integrable

4. ✖ f is integrable, and |f| is also integrable

Question Number : 49 Question Id : 80089422299 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is false?

Options :

1. ✖ Every continuous function f on [a, b] is Riemann integrable

2. ✔ Every bounded function f on [a, b] is Riemann integrable

3. ✖ Every bounded monotonic function f on [a, b] is Riemann integrable

4. ✖ Every uniformly continuous function f on [a, b] is Riemann integrable

Question Number : 50 Question Id : 80089422300 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A function f is bounded and integrable on [a, b] and there exist a function F such that $F' = f$.
Then $\int_a^b f(x)dx =$

Options :

1. ✖ f(b)-f(a)

2. ✖ 0

3. ✖ $\frac{1}{b-a}(f(b) - f(a)$

4. ✔ $F(b) - F(a)$

Question Number : 51 Question Id : 80089422301 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is false?

Options :

1. ✖ A group G is abelian if $(ab)^{-1} = a^{-1}b^{-1} \ \forall \ a, b \in G$

2. ✖ A group G is abelian if $a = a^{-1} \ \forall \ a \in G$

3. ✖ A group G is abelian if $(ab)^2 = a^2b^2 \ \forall \ a, b \in G$

4. ✔ Every group of order 6 is abelian.

Question Number : 52 Question Id : 80089422302 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a group?

Options :

1. ✖ $\{1\}$ under multiplication

2. ✔ The set of rational numbers ($\mathbb{Q}$) under multiplication

3. ✖ The set of all n× n matrices with determinant either 1 or -1 under matrix multiplication

4. ✖ The set of real numbers except -1 under the operation * defined by $a * b = a + b + ab$

Question Number : 53 Question Id : 80089422303 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a sub group of $(\mathbb{z}, +)$?

Options :

1. ✖ $(2\mathbb{z}, +)$

2. ✔ $(\{2k+1 : k \in \mathbb{z}\}, +)$

3. ✖ $(\{3k : k \in \mathbb{z}\}, +)$

4. ✖ $(\{4k : k \in \mathbb{z}\}, +)$

Question Number : 54 Question Id : 80089422304 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is sub group of $(\mathbb{R}, +)$?

Options :

1. ✖ $(\mathbb{Q}, \cdot)$

2. ✔ $(2\mathbb{Z}, +)$

3. ✖ $(\{1,-1,i,-i\}, .)$

4. ✖ $(\mathbb{z}_{20}, +_{20})$

Question Number : 55 Question Id : 80089422305 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $G = \{\pm 1, \pm i, \pm j, \pm k\}$ be the quaternion group under multiplication.

Then the number of distinct cosets of the cyclic group $\langle i \rangle$ in G is

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 4

4. ✖ 8

Question Number : 56 Question Id : 80089422306 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let S_n be the Symmetric group on n symbols then the order of S_6 is

Options :

1. ✔ 720

2. ✖ 360

3. ✖ 12

4. ✖ 36

Question Number : 57 Question Id : 80089422307 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let S_3 be the permutation group on the set $\{1, 2, 3\}$. Then the centre of S_3 is

Options :

1. ✔ $\{e\}$

2. ✖ $\{e\,,(1\ 2\ 3)\,,(1\ 3\ 2)\}$

3. ✖ $\{e\,,(1\ \ 2)\}$

4. ✖ $\{e\,,(2\ \ 3)\}$

Question Number : 58 Question Id : 80089422308 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The number of homomorphisms from the group $(\mathbb{Z}_{20}, +_{20})$ into the group $(\mathbb{Z}_{10}, +_{10})$ is

Options :

1. ✔ 10

2. ✖ 5

3. ✖ 14

4. ✖ 2

Question Number : 59 Question Id : 80089422309 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let H be a subgroup of a group G then which of the following statement is true?

Options :

1. ✖

$H^2 \subseteq H$, $H^2 \neq H$

2. ✖ $H \subseteq H^2$, $H^2 \neq H$

3. ✔ $H^2 = H$

4. ✖ $H^2 = G$

Question Number : 60 Question Id : 80089422310 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Order of the factor group $\frac{Z_4 \times Z_2}{<(2,1)>}$ is

Options :

1. ✔ 4

2. ✖ 3

3. ✖ 2

4. ✖ 1

Question Number : 61 Question Id : 80089422311 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The set of numbers $\{m + n\sqrt{2} : m, n \in \mathbb{Z}\}$ is a subring of

Options :

1. ✖ The ring of all integers under usual operations

2. ✔ The ring of all real numbers under usual operations

3. ✖ The ring of all rational numbers under usual operations

4. ✖ The ring of all even integers under usual operations

Question Number : 62 Question Id : 80089422312 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In the ring $(\mathbb{z}_6, +_6, \times_6)$ which of the following is not a zero divisor?

Options :

1. ✖ 2

2. ✖ 3

3. ✖ 4

4. ✔ 5

Question Number : 63 Question Id : 80089422313 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The number of units of the ring $(\mathbb{Z}_{10}, +_{10}, \times_{10})$

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 5

Question Number : 64 Question Id : 80089422314 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Consider the following two statements.

A) Every field is an integral domain

B) Every finite integral domain is a field

Which of the above statements is/are true?

Options :

1. ✖ Only A is true

2. ✖ Only B is true

3. ✔ Both A and B are true

4. ✖ Neither A nor B is true

Question Number : 65 Question Id : 80089422315 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The number of ideals in the ring $(\mathbb{R}, +, \times)$ is

Options :

1. ✖ 0

2. ✖ 1

3. ✔ 2

4. ✖ ∞

Question Number : 66 Question Id : 80089422316 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If R is a commutative ring with unity and $P \neq R$ is a prime ideal of R. Then the Quotient ring $\frac{R}{P}$ is

Options :

1. ✖ a field but not Integral domain

2. ✔ an integral domain but not a field

3. ✖ Both field and integral domain

4. ✖ Neither field nor integral domain.

Question Number : 67 Question Id : 80089422317 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A field among the following quotient rings is

Options :

1. ✔ $\frac{\mathbb{Z}}{13\,\mathbb{Z}}$

2. ✖

$\frac{\mathbb{Z}}{91\,\mathbb{Z}}$

3. ✖ $\frac{\mathbb{Z}}{102\,\mathbb{Z}}$

4. ✖ $\frac{\mathbb{Z}}{36\,\mathbb{Z}}$

Question Number : 68 Question Id : 80089422318 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Every non-zero homomorphisms from a field F into a ring R is

Options :

1. ✔ One-one

2. ✖ Not one-one

3. ✖ Onto

4. ✖ Neither one-one nor onto

Question Number : 69 Question Id : 80089422319 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the ring $\frac{\mathbb{Z}}{4\,\mathbb{Z}}$, the product $(3+4\mathbb{Z})^2 =$

Options :

1. ✖ $4\mathbb{Z}$

2. ✖ $3+4\mathbb{Z}$

3. ✖ $2+4\mathbb{Z}$

4. ✔ $1+4\mathbb{Z}$

Question Number : 70 Question Id : 80089422320 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The product of the polynomials $f(x)=2x^2+3x+4$ and $g(x)=3x^2+2x+3$ in a polynomial ring $\mathbb{z}_6[x]$ is

Options :

1. ✖ x^4+3x^3

2. ✖ x^2+5

3. ✔ x^3+5x

4. ✖ $3x^4+5x^3+3$

Question Number : 71 Question Id : 80089422321 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the system of equations $x+2y-3z=2$; $z-x=5$; $x+y=2$ is represented in matrix notation as $AX=B$, with $X=\begin{bmatrix}x\\y\\z\end{bmatrix}$, B= $\begin{bmatrix}2\\5\\2\end{bmatrix}$, then $A=$

Options :

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

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

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

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

Question Number : 72 Question Id : 80089422322 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following vector spaces:
$C[a, b]$ = set of continuous functions defined on $[\bar{a}, b]$
$C'[a, b]$ = set of functions whose first derivatives are continuous on $[\bar{a}, b]$
$P[a, b]$ = set of all polynomials defined on $[\bar{a}, b]$
Which of the following is correct?

Options :

1. ✖ $C[a, b]$ is a subspace of $P[a, b]$

2. ✔ $P[a, b]$ is a subspace of $C'[a, b]$

3. ✖ $C'[a, b]$ is a subspace of $P[a, b]$

4. ✖ Both $C[a, b]$ and $C'[a, b]$ are subspaces of $P[a, b]$

Question Number : 73 Question Id : 80089422323 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $A = \begin{pmatrix} 1 & -2 & -3 \\ 2 & 3 & 1 \end{pmatrix}$. Then a vector among the following which does not lie in the null space of A is

Options :

1. ✖ $\begin{pmatrix} 1 \\ 1 \\ -1 \end{pmatrix}$

2. ✖ $\begin{pmatrix} -1 \\ -1 \\ 1 \end{pmatrix}$

3. ✔ $\begin{pmatrix} \frac{1}{2} \\ 0 \\ \frac{1}{2} \end{pmatrix}$

4. ✖ $\begin{pmatrix} 2 \\ 2 \\ -2 \end{pmatrix}$

Question Number : 74 Question Id : 80089422324 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $A = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ be the 3×3 matrix then the column space of A is

Options :

1. ✖ R

2. ✖ R^2

3. ✔ R^3

4. ✖ $\{0\}$

Question Number : 75 Question Id : 80089422325 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let A be a real square matrix of order 6. If column space of A = null space of A, then the null space of A^2 is

Options :

1. ✖ $\mathbb{R}^3(\mathbb{R})$

2. ✖ $\mathbb{R}^{36}(\mathbb{R})$

3. ✖ $\mathbb{R}^{12}(\mathbb{R})$

4. ✔ $\mathbb{R}^6(\mathbb{R})$

Question Number : 76 Question Id : 80089422326 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the vectors $v_1 = \begin{pmatrix}1\\2\\3\end{pmatrix}, v_2 = \begin{pmatrix}3\\4\\5\end{pmatrix}, v_3 = \begin{pmatrix}8\\16\\k\end{pmatrix}$ are linearly dependent then $k =$

Options :

1. ✖ 4

2. ✖ 8

3. ✖ 16

4. ✔ 24

Question Number : 77 Question Id : 80089422327 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let $M_{2\times2}$ be the vector space of all 2×2 matrices and define $T : M_{2\times2} \to M_{2\times2}$ as $T(A) = A + A^T$,

where $A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ and A^T *is* the transpose of A. Then Kernel of T is

Options :

1. ✖ $\left\{\begin{pmatrix} 0 & a \\ a & 0 \end{pmatrix} : a \in \mathbb{R}\right\}$

2. ✖ $\left\{\begin{pmatrix} a & b \\ -b & d \end{pmatrix} : a, b, d \in \mathbb{R}\right\}$

3. ✖ $\left\{\begin{pmatrix} a & 0 \\ 0 & -a \end{pmatrix} : a \in \mathbb{R}\right\}$

4. ✔ $\left\{\begin{pmatrix} 0 & a \\ -a & 0 \end{pmatrix} : a \in \mathbb{R}\right\}$

Question Number : 78 Question Id : 80089422328 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In the vector space $R^3(R)$ if $\begin{pmatrix}28\\19\\37\end{pmatrix} = a\begin{pmatrix}1\\2\\3\end{pmatrix} + b\begin{pmatrix}5\\0\\4\end{pmatrix} + c\begin{pmatrix}8\\9\\10\end{pmatrix}$, then $a+b+c=$

Options :

1. ✔ 9

2. ✖ 8

3. ✖ 7

4. ✖ 6

Question Number : 79 Question Id : 80089422329 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $\mathbb{P}_2 = \{p : p(t)$is a polynomial with real coefficients of degree $\leq 2\}$ and

$B = \{1+t, 2+t^2, t+t^2\}$ be a basis of $\mathbb{P}_2$. Then the coordinate vector of

$p(t) = 1+2t+3t^2$ relative to B is

Options :

1. ✖ $\begin{pmatrix}1\\-2\\3\end{pmatrix}$

2. ✖ $\begin{pmatrix}-1\\-2\\7\end{pmatrix}$

3. ✖ $\begin{pmatrix}\frac{1}{3}\\-\frac{2}{3}\\\frac{7}{3}\end{pmatrix}$

4. ✔ $\begin{pmatrix} -\frac{1}{3} \\ \frac{2}{3} \\ \frac{7}{3} \end{pmatrix}$

Question Number : 80 Question Id : 80089422330 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let $T: R^2 \to R^2$ be a linear transformation such that $T\begin{pmatrix}1\\0\end{pmatrix} = \begin{pmatrix}1\\1\end{pmatrix}$ and $T\begin{pmatrix}0\\1\end{pmatrix} = \begin{pmatrix}-1\\2\end{pmatrix}$ then $T\begin{pmatrix}5\\6\end{pmatrix} =$

Options :

1. ✔ $\begin{pmatrix}-1\\17\end{pmatrix}$

2. ✖ $\begin{pmatrix}17\\1\end{pmatrix}$

3. ✖ $\begin{pmatrix}17\\15\end{pmatrix}$

4. ✖ $\begin{pmatrix}2\\4\end{pmatrix}$

Question Number : 81 Question Id : 80089422331 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Rank of the matrix $\begin{pmatrix} 2 & 1 & 0 & -3 \\ 3 & -1 & 0 & 1 \\ 1 & 4 & -2 & 5 \end{pmatrix}$ is

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 82 Question Id : 80089422332 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Characteristic equation of the matrix $A = \begin{pmatrix} 0 & 0 & 5 \\ 1 & 0 & 6 \\ 0 & 1 & 7 \end{pmatrix}$ is

Options :

1. ✔ $x^3 - 7x^2 - 6x - 5$

2. ✖ $x^3 + 7x^2 + 6x + 5$

3. ✖ $x^3 + 7x^2 + 16x + 5$

4. ✖ $x^3 + 17x^2 + 16x + 15$

Question Number : 83 Question Id : 80089422333 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} -1 & 0 & 3 \\ 1 & 0 & 1 \\ 0 & -2 & 1 \end{bmatrix}$, then $-(A^4) =$

Options :

1. ✔ $A^2 + 8A$

2. ✖ $A^2 - 8A$

3. ✖ $A^3 - 8A$

4. ✖ $A^3 + 8A$

Question Number : 84 Question Id : 80089422334 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let $A = \begin{pmatrix} 5 & 3 \\ 3 & 5 \end{pmatrix}$ and P is a 2×2 matrix such that $PAP^{-1} = D$,

where D is a 2×2 diagonal matrix then $D =$

Options :

1. ✖ $\begin{pmatrix} 6 & 0 \\ 0 & 4 \end{pmatrix}$

2. ✔ $\begin{pmatrix} 8 & 0 \\ 0 & 2 \end{pmatrix}$

3. ✖ $\begin{pmatrix} 1 & 0 \\ 0 & 9 \end{pmatrix}$

4. ✖ $\begin{pmatrix} 7 & 0 \\ 0 & 3 \end{pmatrix}$

Question Number : 85 Question Id : 80089422335 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The unit vector in the direction of the vector $(1, -2, 2, 1)$ is

Options :

1. ✖ $(1, -2, 2, 1)$

2. ✖ $\left(\frac{1}{\sqrt{10}}, \frac{2}{\sqrt{10}}, \frac{2}{\sqrt{10}}, \frac{1}{\sqrt{10}}\right)$

3. ✖ $\left(\frac{-1}{\sqrt{10}}, \frac{-2}{\sqrt{10}}, \frac{2}{\sqrt{10}}, \frac{1}{\sqrt{10}}\right)$

4. ✔ $\left(\frac{1}{\sqrt{10}}, \frac{-2}{\sqrt{10}}, \frac{2}{\sqrt{10}}, \frac{1}{\sqrt{10}}\right)$

Question Number : 86 Question Id : 80089422336 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Eigen values of a skew Hermitian matrix are

Options :

1. ✖ Negative real numbers

2. ✖ Positive real numbers

3. ✖ Complex number with non-zero real part

4. ✔ Either zero or Purely imaginary

Question Number : 87 Question Id : 80089422337 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If u and v are unit vectors in the inner product space $V(F)$ then $\|u+v\|^2+\|u-v\|^2=$

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 5

Question Number : 88 Question Id : 80089422338 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the vector space R^n. For $x=(x_1,x_2,x_3,\ \ldots\ ,x_n),\ y=(y_1,y_2,y_3,\ \ldots\ ,y_n)\in R^n$ and the inner product of x and y is defined by $(x,y)=x_1y_1+x_2y_2+\ \ldots\ +x_ny_n$. Then the length of the vector x in terms of inner product is

Options :

1. ✔ $\sqrt{(x,x)}$

2. ✖ (x,x)

3. ✖ 1

4. ✖ $\sqrt{(x,1)}$

Question Number : 89 Question Id : 80089422339 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $u = \begin{bmatrix} 2 \\ 3 \end{bmatrix}$ and $v = \begin{bmatrix} 3 \\ 2 \end{bmatrix}$. Then orthogonal projection of u on v is

Options :

1. ✖ $\frac{13}{12}u$

2. ✖ $\frac{12}{13}u$

3. ✖ $\frac{13}{12}v$

4. ✔ $\frac{12}{13}v$

Question Number : 90 Question Id : 80089422340 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two subsets S_1 and S_2 of an inner product space are such that $S_1 \subset S_2$, then their orthogonal complements $S_1^{\perp}$ and $S_2^{\perp}$ are such that

Options :

1. ✖ $S_1^{\perp} = S_2^{\perp}$

2. ✖ $S_1^{\perp} \subset S_2^{\perp}$

3. ✖ $S_1^{\perp} = S_2^{\perp} = \phi$

4. ✔ $S_1^{\perp} \supset S_2^{\perp}$

Question Number : 91 Question Id : 80089422341 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Bisection method to find a root of an equation of the form $f(x) = 0$ is based on

Options :

1. ✔ Intermediate value theorem

2. ✖ Rolle's mean value theorem

3. ✖ Lagrange's mean value theorem

4. ✖ Fundamental theorem of integral calculus

Question Number : 92 Question Id : 80089422342 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

One of the fixed points of the function $f(x) = x^2 - 2$ is

Options :

1. ✖ 0

2. ✖ 1

3. ✔ 2

4. ✖ 3

Question Number : 93 Question Id : 80089422343 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Newton's method to find a root of the equation $f(x) = 0$ uses

Options :

1. ✔ Taylor polynomials

2. ✖ Legendre polynomials

3. ✖ Hermite polynomials

4. ✖ Bessel Polynomials

Question Number : 94 Question Id : 80089422344 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

While using Newton-Raphson method to find approximate root of $f(x) = 0$, for all $k \in \mathbb{N}$, let x_k be the k^{th} approximation of the approximate root, $x_k \leq \zeta_k \leq$ exact root and e_k is error at k^{th} iteration. If $e_{k+1} = ce_k^n$, then c and n are respectively

Options :

1. ✔ $c = \frac{f''(\zeta_k)}{2f'(x_k)}$, $n = 2$

2. ✖ $c = \frac{f''(\zeta_k)}{f'(x_k)}$; $n = 3$

3. ✖ $c = \frac{f''(\zeta_k)}{2}$, $n = 3$

4. ✖ $c = \frac{2f'(x_k)}{f''(\zeta_k)}$, $n = 2$

Question Number : 95 Question Id : 80089422345 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For the function $f(x) = e^{2x} - 2x - 1$, $x = 0$ is zero of order

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 96 Question Id : 80089422346 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Aitken's Δ^2 method can be used to

Options :

1. ✔ accelerate the consequence of iteration

2. ✖ select initial approximation for iterations

3. ✖ both 1 and 2

4. ✖ find the zeros of the derivatives of functions

Question Number : 97 Question Id : 80089422347 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Lagrange interpolating polynomial among the following that passes through the points $(2,3)$ and $(5,2)$ is

Options :

1. ✖ $11 + x$

2. ✖ $11 - x$

3. ✔ $\frac{11-x}{3}$

4. ✖ $\frac{11+x}{3}$

Question Number : 98 Question Id : 80089422348 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is useful to approximate $f(x)$ when x lies near the centre of the difference table ?

Options :

1. ✖ Newton's forward difference formula

2. ✖ Newton's backward difference formula

3. ✔ Stirling formula

4. ✖ Jacobian formula

Question Number : 99 Question Id : 80089422349 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(x) = a \cdot b^x$ and $\Delta^3\big(f(x)\big) = kf(x)$ when step size h=1 , then $k =$

Options :

1. ✖ $b - 1$

2. ✖ $(b-1)^2$

3. ✔ $(b-1)^3$

4. ✖ $\frac{(b-1)^3}{3!}$

Question Number : 100 Question Id : 80089422350 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Simpson's rule to find the value of the integral of the function $f(x)$ over $[a,b]$ with equally spaced nodes $x_0 = a$, $x_1 = a+h$ and $x_2 = b$ where $h = \frac{b-a}{2}$ is (by ignoring the error term)

Options :

1. ✔ $\int_{x_0}^{x_2} f(x)dx = \frac{h}{3}[f(x_o) + 4f(x_1) + 2f(x_2)]$

2. ✖ $\int_{x_0}^{x_2} f(x)dx = \frac{h}{3}[f(x_o) + 2f(x_1) + f(x_2)]$

3. ✖ $\int_{x_0}^{x_2} f(x)dx = \frac{h}{3}[f(x_o) - 4f(x_1) + f(x_2)]$

4. ✖ $\int_{x_0}^{x_1} f(x)dx = \frac{h}{3}[f(x_o) - 2f(x_1) + f(x_2)]$

Analytical Ability

Section Id : 800894436

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
Sub-Section Number :	1
Sub-Section Id :	800894496
Question Shuffling Allowed :	Yes

Question Id : 80089422351 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (101 to 110)

On the right side , a question followed by two statements I and II are given. Answer the following 10 questions by selecting one of the options as follows

1. Select option 1. If the data given is 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 statement 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 : 80089422352 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the sum of the present ages of Praveen and Vinod?

Statement I: Praveen is 6 years older than Vinod.

Statement II: After 6 years the ratio of their ages will be 6:5.

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 102 Question Id : 80089422353 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the numbers x,y,z and w is the largest?

Statement I: The average of x,y,z and w is 25.

Statement II:The numbers x,y and w are each less than 24.

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 103 Question Id : 80089422354 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the two digit number ?

Statement I:The difference between its digits is 2.

Statement II:The sum of its digits is 4.

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 104 Question Id : 80089422355 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Is m> n ?

Statement I: $m^2 > n^2$

Statement II: m-n>0.

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 105 Question Id : 80089422356 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the values of x and y?

Statement I: $x + y = 15$ and $xy = 56$.

Statement II: $x^2 + y^2 = 113$.

Options :

1. ✔ 1

2. ✖ 2

3. ✖ 3

4. ✖ 4

Question Number : 106 Question Id : 80089422357 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the volume of the rectangular box?

Statement I: The total surface area of the box is 42 sq.mt.

Statement II:The height of the box is 20 cm.

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 107 Question Id : 80089422358 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Is p greater than q ?

Statement I: p is multiple of q .

Statement II: $\frac{p}{6}=\frac{q}{3}$.

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 108 Question Id : 80089422359 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the Value of P?

Statement I:p is a negative whole number.

Statement II: $4p^2$ is an integer.

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 109 Question Id : 80089422360 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the dimensions of the rectangle ?

Statement I:The perimeter of the rectangle is 14 cm.

Statement II:The diagonal of the rectangle is 5 cm.

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 110 Question Id : 80089422361 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Is the number divisible by 9?

Statement I:The number is divisible by 3

Statement II:The number is divisible by 27.

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Sub-Section Number : 2

Sub-Section Id : 800894497

Question Shuffling Allowed : Yes

Question Number : 111 Question Id : 80089422362 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The next term in the sequence 6, 13, 25, 51, 101, ___ is

Options :

1. ✖ 201

2. ✖ 202

3. ✔ 203

4. ✖ 205

Question Number : 112 Question Id : 80089422363 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the missing alphabet in the box?

A	D	H
F	I	M
?	N	R

Options :

1. ✖ M

2. ✔ K

3. ✖ R

4. ✖ T

Question Number : 113 Question Id : 80089422364 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The missing term in the sequence 6, 12, 21, __, 48 is

Options :

1. ✔ 33

2. ✖ 38

3. ✖ 40

4. ✖ 45

Question Number : 114 Question Id : 80089422365 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the missing letters in the series?

- ST - OL -GY

Options :

1. ✖ A,O,R

2. ✔ A,R,O

3. ✖ O,R,A

4. ✖ R,A,O

Question Number : 115 Question Id : 80089422366 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The 10^{th} term in the sequence 6, 12, 24, …… is

Options :

1. ✖ 3074

2. ✖ 3078

3. ✔ 3072

4. ✖ 3080

Question Number : 116 Question Id : 80089422367 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Find the odd one out in the series 1,2,6,15,31,56,91.

Options :

1. ✖ 15

2. ✖ 31

3. ✖ 56

4. ✔ 91

Question Number : 117 Question Id : 80089422368 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Pick the odd one out in the sequence 1, 3, 6, 11, 15, 21

Options :

1. ✖ 15

2. ✔ 11

3. ✖ 3

4. ✖ 1

Question Number : 118 Question Id : 80089422369 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Net is related to Ball in the same way Sparrow is related to ----------

Options :

1. ✖ Sky

2. ✖ Wanna

3. ✔ Nest

4. ✖ Bird

Question Number : 119 Question Id : 80089422370 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The last two alphanumerics in the sequence D4, F6, H8, J10, __, __ are

Options :

1. ✖ L12, M14

2. ✖ K12, M13

3. ✔ L12, N14

4. ✖ K12, M14

Question Number : 120 Question Id : 80089422371 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The odd one out of the following alternatives is

Options :

1. ✖ 13

2. ✖ 23

3. ✖ 17

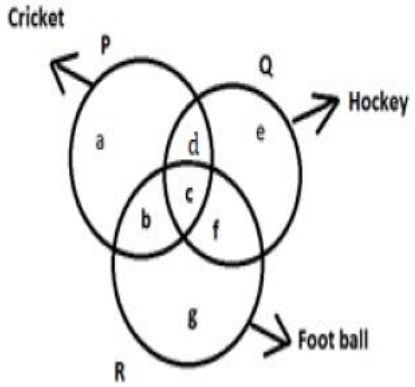
4. ✔ 33

Sub-Section Number :	3
Sub-Section Id :	800894498
Question Shuffling Allowed :	Yes

Question Id : 80089422372 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (121 to 125)

Answer the questions using the Venn diagram. The figure represents three intersecting circles P, Q and R which represents sets of players who play cricket, hockey and football. Each region is represented by a small letter.



Sub questions

Question Number : 121 Question Id : 80089422373 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which letter represents the set of players who play all the games?

Options :

1. ✖ b

2. ✔ c

3. ✖ f

4. ✖ g

Question Number : 122 Question Id : 80089422374 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which letter represents the set of players who play cricket and foot ball but not hockey?

Options :

1. ✖ g

2. ✔ b

3. ✖ c

4. ✖ e

Question Number : 123 Question Id : 80089422375 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which letter represents the set of players who play cricket, hockey but not foot ball?

Options :

1. ✖ b

2. ✔ d

3. ✖ g

4. ✖ e

Question Number : 124 Question Id : 80089422376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which letter represents the set of players who play hockey,football but not cricket?

Options :

1. ✔ f

2. ✖ c

3. ✖ d

4. ✖ e

Question Number : 125 Question Id : 80089422377 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which letter represents the players who plays only hockey?

Options :

1. ✖ a

2. ✖ d

3. ✖ f

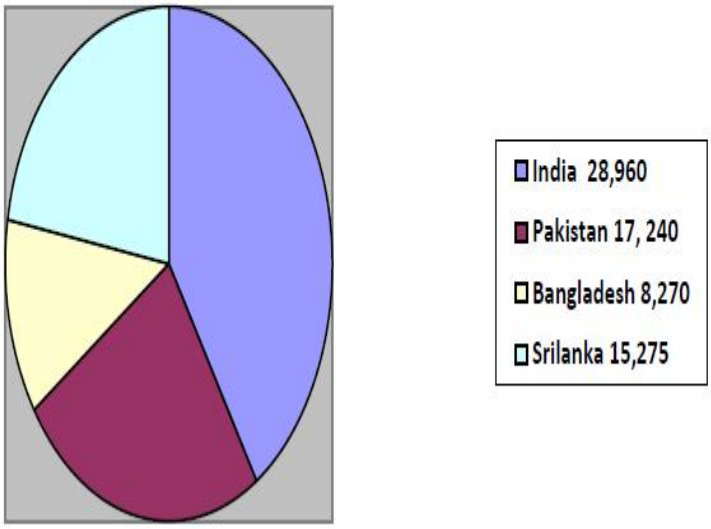
4. ✔ e

Sub-Section Number :	4
Sub-Section Id :	800894499
Question Shuffling Allowed :	Yes

Question Id : 80089422378 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (126 to 130)

The number of research papers published in peer reviewed journals from the countries India, Pakistan, Bangladesh, and Sri Lanka in 2019 are represented by the following Pie-chart



Sub questions

Question Number : 126 Question Id : 80089422379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

India share (in %) in the research publications among all the said countries is

Options :

1. ✖ 24.71%

2. ✖ 21.9%

3. ✖ 58.48%

4. ✔ 41.52%

Question Number : 127 Question Id : 80089422380 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The subtended angle (in degrees) made by Bangladesh is

Options :

1. ✖ 180^0

2. ✖ 317.31^0

3. ✔ 42.69^0

4. ✖ 90^0

Question Number : 128 Question Id : 80089422381 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ratio of the difference of the publications of Pakistan and Bangladesh to the difference of publications of Pakistan and Sri Lanka is

Options :

1. ✖ 1695:8790

2. ✖ 598:131

3. ✔ 8970:1695

4. ✖ 7521:1253

Question Number : 129 Question Id : 80089422382 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number of Publications of Bangladesh and Sri Lanka put together are more than that of India by

Options :

1. ✖ 4555

2. ✔ 5415

3. ✖ 5435

4. ✖ 4355

Question Number : 130 Question Id : 80089422383 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The difference of the angles of the largest two sectors is

Options :

1. ✖ 59.87

2. ✖ 60.98

3. ✖ 59.9

4. ✔ 60.49

Sub-Section Number :	5
Sub-Section Id :	800894500
Question Shuffling Allowed :	Yes

Question Number : 131 Question Id : 80089422384 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a certain code language "LEARNING" is coded as "LGNINRAE". Then in that language "SURPRISE" will be coded as

Options :

1. ✖ ESRIPRUS

2. ✖ RUSEPSIR

3. ✔ SESIRPRU

4. ✖ ESIRRSU

Question Number : 132 Question Id : 80089422385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a certain code, if 13 x 45 = 36, 25 x 44 = 56 then 13 x 42 =

Options :

1. ✖ 26

2. ✖ 16

3. ✔ 24

4. ✖ 66

Question Number : 133 Question Id : 80089422386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a certain code "LAKSHMI" is coded as 32.Then "SHIVA" can be coded as

Options :

1. ✖ 18

2. ✖ 16

3. ✔ 19

4. ✖ 20

Question Number : 134 Question Id : 80089422387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In certain code, if ALPHABET is coded as ABALETPH , then in the same code LANGUAGE is coded as

Options :

1. ✔ UALAGENG

2. ✖ LAUAGENG

3. ✖ GENGUALA

4. ✖ ALENGUALA

Question Number : 135 Question Id : 80089422388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If DE is coded as10 then what is the code for the word HI ?

Options :

1. ✖ 25

2. ✔ 36

3. ✖ 64

4. ✖ 144

Question Number : 136 Question Id : 80089422389 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a certain code every letter of a word is transitioned twice. In the first transition F is written as Q, O as A, S as M, W as U, T as R, R as B, A as D, E as C. In second transition, A is written as M, M as I, R as P, Q as N, U as D, D as O, C as K, B as Q. Then the word 'SOFTWARE' after the two transitions is coded as

Options :

1. ✔ IMNPDOQK

2. ✖ IMPDOOQK

3. ✖ IMNQKODD

4. ✖ INMKQODD

Question Number : 137 Question Id : 80089422390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a certain code the number 35796 is written as 44887.Then what is the code for the number 46823?

Options :

1. ✖ 57914

2. ✖ 55714

3. ✖ 55934

4. ✔ 55914

Question Number : 138 Question Id : 80089422391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a certain code, if the Vowels A, E, I, O, U are replaced by first five Consonants, then in that code OUTER is coded as

Options :

1. ✖ GFRTC

2. ✖ RTCFG

3. ✔ FGTCR

4. ✖ FGRCT

Question Number : 139 Question Id : 80089422392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If + means ÷, × means +, ÷ means – and – means × then the value of $40 \times 12+3-6 \div 60$ is

Options :

1. ✖ 2

2. ✔ 4

3. ✖ 6

4. ✖ 10

Question Number : 140 Question Id : 80089422393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In some code language, if RED is coded ρϕ$, and LED is coded as λϕ$, then the code of the word ELDER is

Options :

1. ✔ ϕλ$ϕρ

2. ✖ ϕλ$ρφ

3. ✖ φλϕρ$

4. ✖ λϕρ$φ

Question Number : 141 Question Id : 80089422394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

6 boys are sitting in a circular path facing the centre. B is the left of V. R is between B and M. J is between V and N. Who is between R and V?

Options :

1. ✖ J

2. ✖ M

3. ✔ B

4. ✖ N

Question Number : 142 Question Id : 80089422395 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The angle between the minute hand and hour hand of a clock when the time is 5.20 p.m. is

Options :

1. ✔ 40^0

2. ✖ 30^0

3. ✖ 20^0

4. ✖ 50^0

Question Number : 143 Question Id : 80089422396 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

40 boys are sitting in a row from left to right. If Raghu sits in 20^{th} position from the right, then number of his sitting position from the left is

Options :

1. ✖ 16

2. ✖ 18

3. ✔ 21

4. ✖ 22

Question Number : 144 Question Id : 80089422397 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Ravi is brother of Arun. Sony is the sister of Suresh. Arun is the son of Sony. How is Ravi related to Sony?

Options :

1. ✖ Nephew

2. ✔ Son

3. ✖ Brother

4. ✖ Father

Question Number : 145 Question Id : 80089422398 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If February 6^{th} falls on Friday, then what would be the 22^{nd} day of the month?

Options :

1. ✔ Sunday

2. ✖ Thursday

3. ✖ Wednesday

4. ✖ Monday

Question Number : 146 Question Id : 80089422399 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two cars leave the same place at the same time. One runs at 20 km/hour towards north and the other at 15 km / hour towards east. What will be the distance between them(in kilometers) after 2 hours of travelling?

Options :

1. ✖ 30

2. ✔ 50

3. ✖ 40

4. ✖ 70

Question Number : 147 Question Id : 80089422400 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the corner North-East named as West; South-East is named as North; South -West is named as East and North-West is named as south, then the East will be named as

Options :

1. ✖ East

2. ✖ West

3. ✖ Noth-East

4. ✔ North-West

Question Number : 148 Question Id : 80089422401 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

50 men can dig 40 holes in 30 days. How long will 25 men take to dig 20 holes?

Options :

1. ✔ 30 days

2. ✖ 60 days

3. ✖ 15 days

4. ✖ 45 days

Question Number : 149 Question Id : 80089422402 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many times do the hands of clock coincide in a day?

Options :

1. ✔ 22

2. ✖ 20

3. ✖ 21

4. ✖ 24

Question Number : 150 Question Id : 80089422403 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If A= {1, 2, 3, 4, 5, 6}, B= {1,3, 4,6}, D={1,5,6}, $\cap$ stands for collection of common elements in two sets, and X^C stands for collection of elements which are not in a set X. Then $(B \cap D)^C$ consists of

Options :

1. ✔ $\{2,3, 4,5\}$

2. ✖ $\{1,3,4,5\}$

3. ✖ $\{3,4,5,6\}$

4. ✖ $\{1,2,3,4\}$

Communicative English

Section Id :	800894437
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
Sub-Section Number :	1
Sub-Section Id :	800894501
Question Shuffling Allowed :	Yes

Question Number : 151 Question Id : 80089422404 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

He has a voracious appetite.

Options :

1. ✖ tenacious

2. ✖ genuine

3. ✖ spacious

4. ✔ ravenous

Question Number : 152 Question Id : 80089422405 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct synonym of the word 'amalgamation' from the options given below.

Options :

1. ✖ Separation

2. ✖ Segregation

3. ✖ Dissociation

4. ✔ Combination

Question Number : 153 Question Id : 80089422406 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Too many theorists have deluded the public.

Options :

1. ✖ disclosed

2. ✔ misled

3. ✖ secured

4. ✖ cultivated

Question Number : 154 Question Id : 80089422407 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

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

'The good review enticed me to watch the movie.'

Options :

1. ✖ Attracted

2. ✔ Repelled

3. ✖ Persuaded

4. ✖ Allured

Question Number : 155 Question Id : 80089422408 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the appropriate antonym of the word underlined:

The villain has a gruesome appearance.

Options :

1. ✖ sorrowful

2. ✖ gigantic

3. ✖ shameful

4. ✔ pleasant

Question Number : 156 Question Id : 80089422409 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

'Even under great pressure, Dr. Deepak who is the emergency room, he remained as the epitome of professionalism.'

Options :

1. ✔ antithesis

2. ✖ archetype

3. ✖ embodiment

4. ✖ paradigm

Question Number : 157 Question Id : 80089422410 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ asimilate

2. ✔ assimilate

3. ✖ assimmilate

4. ✖ assimelate

Question Number : 158 Question Id : 80089422411 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the incorrectly spelt word from the options given below.

Options :

1. ✖ Miscellaneous

2. ✔ Indispensible

3. ✖ Manoeuvre

4. ✖ Lieutenant

Question Number : 159 Question Id : 80089422412 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the misspelt word from the options given below:

Options :

1. ✖ agnostic

2. ✖ sceptic

3. ✖ prolific

4. ✔ assetic

Question Number : 160 Question Id : 80089422413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Choose the correct one word substitute to make it a meaningful sentence. 'He has a fear of open spaces, going outside or distance from a place of safety. He has _____.'

Options :

1. ✔ Agoraphobia

2. ✖ Xenophobia

3. ✖ Acrophobia

4. ✖ Lygophobia

Question Number : 161 Question Id : 80089422414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Out of the four alternatives, choose the correct option that can be substituted for the words given below :

The murder of the king is called

Options :

1. ✖ genocide

2. ✖ matricide

3. ✖ patricide

4. ✔ regicide

Question Number : 162 Question Id : 80089422415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

One who collects coins is called a _____.

Options :

1. ✔ Numismatist

2. ✖ Philatelist

3. ✖ Archaeologist

4. ✖ Philanthropist

Question Number : 163 Question Id : 80089422416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with appropriate word:

The police are trying to _____ the tense situation and gain the release of the hostages.

Options :

1. ✔ defuse

2. ✖ derive

3. ✖ enrage

4. ✖ diffuse

Question Number : 164 Question Id : 80089422417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Identify the sentence that has an incorrect use of underlined phrase from the given options.

Options :

1. ✖ Some of the people are negligent about traffic regulations.

2. ✔ The climatic scene of the movie ends with a sudden twist in the story.

3. ✖ It is a specious argument which seems to be good at first view but is actually wrong.

4. ✖ The two men fought a duel over the medal.

Question Number : 165 Question Id : 80089422418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Fill in the blank with appropriate word:

I wish I had seen the show last night, I heard it was a good and _____ interesting performance.

Options :

1. ✖ quiet

2. ✖ quit

3. ✔ quite

4. ✖ quote

Question Number : 166 Question Id : 80089422419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the meaning of the idiom in the following sentence?

'Her son is always **on the ball** to learn new things in class.'

Options :

1. ✔ alert to new trends, ideas, and methods

2. ✖ ready to play football

3. ✖ unwilling

4. ✖ lacks focus

Question Number : 167 Question Id : 80089422420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the option with the correct meaning of the Idiom given below:

Like a sitting duck

Options :

1. ✖ lazy person

2. ✖ sleepy always

3. ✖ meditating in silence

4. ✔ vulnerable and unprotected

Question Number : 168 Question Id : 80089422421 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the meaning of the phrasal verb 'break into'?

Options :

1. ✔ Enter forcibly

2. ✖ End a relationship

3. ✖ Escape

4. ✖ Make someone unhappy

Question Number : 169 Question Id : 80089422422 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Fill in the blank with appropriate phrasal verb:

I am too tired to_____ any nonsense.

Options :

1. ✖ put by

2. ✔ put up with

3. ✖ put off

4. ✖ put out

Question Number : 170 Question Id : 80089422423 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Identify the phrasal verb from the options given below that means 'to stay positive or to not give up'.

Options :

1. ✖ Hang down

2. ✖ Hang up

3. ✔ Hang in

4. ✖ Hang over

Question Number : 171 Question Id : 80089422424 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Fill in the blank with suitable Article:

Are you attending _____reception today?

Options :

1. ✖ a

2. ✔ the

3. ✖ an

4. ✖ no article

Question Number : 172 Question Id : 80089422425 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill the blank in the following sentence with an appropriate article from the options given below.

Monica has been working with _____ incredible team since 2020.

Options :

1. ✔ an

2. ✖ the

3. ✖ No article is required

4. ✖ a

Question Number : 173 Question Id : 80089422426 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with suitable Preposition:

He looks upset, I think he took the criticism_____ heart.

Options :

1. ✔ to

2. ✖ on

3. ✖ in

4. ✖ of

Question Number : 174 Question Id : 80089422427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill the blank in the following sentence with an appropriate preposition from the options given below.

The physical conquest of a mountain is only one part of the achievement. There is more ____ it.

Options :

1. ✖ than

2. ✖ often

3. ✖ then

4. ✔ to

Question Number : 175 Question Id : 80089422428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with appropriate conjunction:

They visited an art gallery _____ a museum.

Options :

1. ✖ but

2. ✖ so

3. ✖ because

4. ✔ and

Question Number : 176 Question Id : 80089422429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Fill in the blank with a suitable conjunction to connect the pair of sentences.

It's one of those cars for seven people. ____ there is plenty of room.

Options :

1. ✖ But

2. ✖ Because

3. ✖ Or

4. ✔ So

Question Number : 177 Question Id : 80089422430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Choose appropriate Active Voice from the options for the following sentence:

Our task had been completed before sunset.

Options :

1. ✖ We completed our task before sunset.

2. ✖ We have completed our task before sunset.

3. ✖ We have had completed our task before sunset.

4. ✔ We had completed our task before sunset.

Question Number : 178 Question Id : 80089422431 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct passive form of the verb to fill in the blank in the following sentence.

'The decision that was announced yesterday _____since 31 March 2021'

Options :

1. ✔ had been expected

2. ✖ is being expected

3. ✖ has been expected

4. ✖ is to be expected

Question Number : 179 Question Id : 80089422432 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose appropriate Passive Voice from the options for the following sentence:

I take exercise daily.

Options :

1. ✖ Exercises are taken daily by me.

2. ✔ Exercise is taken daily by me.

3. ✖ I am daily taking exercise.

4. ✖ Exercise is been taken daily by me.

Question Number : 180 Question Id : 80089422433 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct form of the verb to fill in the blanks in the following sentence.

'I didn't know who she ____. I _____ her before.'

Options :

1. ✔ was, had never seen

2. ✖ is, never saw

3. ✖ was, was never seen

4. ✖ has been, had never been

Question Number : 181 Question Id : 80089422434 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with correct form of the verb:

The thief and the eyewitness _____ from the scene just now.

Options :

1. ✖ had escaped

2. ✖ has been escaping

3. ✖ was escaping

4. ✔ have escaped

Question Number : 182 Question Id : 80089422435 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct form of the verb to fill in the blanks in the following sentence.

'Don't disturb me. I _____ a letter now.'

Options :

1. ✔ am writing

2. ✖ have writing

3. ✖ was writing

4. ✖ have been writing

Question Number : 183 Question Id : 80089422436 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the correct answer :

Neither the teacher nor the students _____ helpful.

Options :

1. ✖ is

2. ✖ was

3. ✔ are

4. ✖ has been

Question Number : 184 Question Id : 80089422437 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank in the following sentence with a suitable verb that is in agreement with the subject from the options given below.

Every generation _____ its own characteristics, group's language, technological influences, workplace attitudes, way of life, etc.

Options :

1. ✖ have

2. ✔ has

3. ✖ is

4. ✖ are

Question Number : 185 Question Id : 80089422438 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill in the blank with the correct answer :

Twenty years _____ the minimum age to fill this form.

Options :

1. ✖ are

2. ✔ is

3. ✖ has

4. ✖ have

Question Number : 186 Question Id : 80089422439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

'The moment the Academic Procession (A)/ will stand,(B)/ the band will start playing(C)/ the National Anthem of India.(D)/'

Options :

1. ✖ A

2. ✔ B

3. ✖ C

4. ✖ D

Question Number : 187 Question Id : 80089422440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct sentence from the options given below:

Options :

1. ✖ I was impressed rather by the attitude of the speaker than by his subject knowledge.

2. ✖ I was rather impressed by the attitude of the speaker by than his subject knowledge.

3. ✔ I was impressed by the attitude of the speaker rather than by his subject knowledge.

4. ✖ Rather I was impressed by the attitude of the speaker than by his subject knowledge.

Question Number : 188 Question Id : 80089422441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify a grammatically correct sentence from the options given below.

Options :

1. ✔ Janu, Jai, you and I shall enjoy ourselves at the party tomorrow.

2. ✖ Jai, Janu, I and you will enjoy at the party tomorrow.

3. ✖ I, you, Janu and Jai will enjoy themselves at the party tomorrow.

4. ✖ You, I, Jai and Janu will be enjoying at the party tomorrow.

Question Number : 189 Question Id : 80089422442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct answer given below:

Options :

1. ✔ The ruins of the castle stood on a rocky eminence overlooking the sea and the plains.

2. ✖ Overlooking the sea and the plains on a rocky eminence the ruins of the castle stood.

3. ✖ The ruins of the castle stood overlooking the sea and the plains on a rocky eminence.

4. ✖ The ruins of the castle overlooking the sea the plains on a rocky eminence stood.

Question Number : 190 Question Id : 80089422443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify a grammatically incorrect sentence from the options given below.

Options :

1. ✖ If you had attended online classes with more curiosity and presence of mind, you would have scored more marks.

2. ✖ If I were you, I would study science.

3. ✖ Having worked hard during difficult times, you should have had a little more patience with people.

4. ✔ If Krishna finds joy in spending time with his friends only, he does not relish the company of his grandparents.

Sub-Section Number :	2
Sub-Section Id :	800894502
Question Shuffling Allowed :	Yes

Question Id : 80089422444 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (191 to 195)

Read the following poem carefully. On the basis of your understanding of the poem, answer the five questions by choosing the most appropriate answer.

I had a dove, and the sweet dove died,
And I have thought it died of grieving;
0 what could it grieve for? Its feet were tied
With a silken thread of my own hand's weaving:
Sweet little red feet! Why would you die?
Why would you leave me, sweet bird, why?
You liv'd alone on the forest tree,
Why, pretty thing, could you live with me?
I kissd'd you oft, and gave you white peas
Why not live sweetly as in the green trees? – John Keats

Sub questions

Question Number : 191 Question Id : 80089422445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For what is the bird grieving?

Options :

1. ✖ Trees

2. ✖ Nature

3. ✔ Freedom

4. ✖ Love

Question Number : 192 Question Id : 80089422446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

With what did the poet tie the bird's feet?

Options :

1. ✖ Chain

2. ✖ Cloth

3. ✔ Silk thread

4. ✖ Cotton thread

Question Number : 193 Question Id : 80089422447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does 'lived alone on the forest tree' symbolise?

Options :

1. ✖ A dependent life

2. ✔ Freedom

3. ✖ A lonely life

4. ✖ A dull life

Question Number : 194 Question Id : 80089422448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does the poet personify with a dove?

Options :

1. ✖ Melancholy

2. ✔ Love

3. ✖ Light

4. ✖ Death

Question Number : 195 Question Id : 80089422449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does the phrase 'its feet were tied' mean?

Options :

1. ✖ Restrain

2. ✖ Concern

3. ✖ Protection

4. ✔ Bondage

Sub-Section Number :	3
Sub-Section Id :	800894503
Question Shuffling Allowed :	Yes

Question Id : 80089422450 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No

Question Numbers : (196 to 200)

Read the following passage carefully and answer the questions

As I write, highly civilized human beings are flying overhead, trying to kill me. They do not feel any enmity against me as an individual, nor I against them. They are 'only doing their work', as the saying goes. Most of them are kind-hearted law-abiding men who would never dream of committing murder in private life. But if one of them succeeds in blowing me to pieces, he will still be able to sleep without any degree of compunction. He is serving his country, which has the power to absolve him from evil.

Sub questions

Question Number : 196 Question Id : 80089422451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The people who are flying overhead are called highly civilized because they:

Options :

1. ✖ are kindhearted

2. ✔ are doing their duty

3. ✖ are trained bombers

4. ✖ draw heavy salaries

Question Number : 197 Question Id : 80089422452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The person who succeeds in killing the author will:

Options :

1. ✖ never sleep undisturbed

2. ✔ be without any repentance

3. ✖ suffer a lot

4. ✖ consider himself a sinner

Question Number : 198 Question Id : 80089422453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The reason why they are trying to kill the author is that:

Options :

1. ✖ they have murderous instincts

2. ✖ they have a grudge against the author

3. ✔ they have an assigned job

4. ✖ the author is not as law-abiding as they are

Question Number : 199 Question Id : 80089422454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In this passage the author assumes that doing one's duty to one's country:

Options :

1. ✖ Intensifies one's sensitivity

2. ✔ Exonerates a person of his act of killing

3. ✖ Makes one kind-hearted

4. ✖ Makes one desist from doing anything unscrupulous

Question Number : 200 Question Id : 80089422455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the tone of the author in this passage ?

Options :

1. ✔ patriotic

2. ✖ indifferent

3. ✖ hostile

4. ✖ casual