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 20th May 2023 Shift1 SET1
Subject Name :	BSc Mathematics
Creation Date :	2023-05-20 13:03:27
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No

Show Reports :	No
Show Progress Bar :	No

BSc Mathematics

Group Number :	1
Group Id :	15920723
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
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	15920787
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 : 159207101

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 1592074411 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 $S_1 = 1$ and $S_{n+1} = \left(\frac{n}{n+1}\right) S_n^2$ for $n \geq 1$. Then the sequence (S_n) converges to

Options :

1. ✖ 1

2. ✔ 0

3. ✖ 2

4. ✖ 3

Question Number : 2 Question Id : 1592074412 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 subsequence of the sequence $\left(\frac{1}{n}\right)$?

Options :

1. ✖ $\left(1, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \ldots\ldots\right)$

2. ✖ $\left(1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots\ldots\right)$

3. ✖ $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \ldots\ldots\right)$

4. ✔ $\left(\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \ldots\ldots\right)$

Question Number : 3 Question Id : 1592074413 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 $(2 + (-1)^n)$ is

Options :

1. ✖ convergent

2. ✖ divergent

3. ✔ oscillating finitely

unbounded

4. ✖

Question Number : 4 Question Id : 1592074414 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 $(S_n) = (2, 1, 1, 0, 2, 1, 1, 0, 2, 1, 1, 0, \ldots\ldots\ldots)$, then $\liminf S_n + \limsup S_n =$

Options :

1. ✔ 2

2. ✖ 3

3. ✖ 0

4. ✖ 4

Question Number : 5 Question Id : 1592074415 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 $\sum_{n=1}^{\infty} \frac{1}{n(n+1)}$ converges to

Options :

1. ✖ 2

2. ✖ 0

3. ✔ 1

4. ✖ 3

Question Number : 6 Question Id : 1592074416 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 statements is false?

Options :

1. ✖ $\sum\left(\frac{1}{n^2}+2^{-n}\right)$ is convergent.

2. ✖ $\sum\left(\frac{1}{n}+\frac{1}{\sqrt{n}}\right)$ is divergent.

3. ✖ $\sum\left(\frac{1}{n!}+\frac{1}{4^n}\right)$ is convergent.

$\sum\left(\frac{n}{n^3+1}+\frac{2n+1}{3n+2}\right)$ is convergent.

4. ✔

Question Number : 7 Question Id : 1592074417 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 of the series $\sum_{n=2}^{\infty}\left(-\frac{1}{3}\right)^n$ is equal to

Options :

1. 0 ✖

2. $-\frac{1}{2}$ ✖

3. $\frac{1}{12}$ ✔

4. $\frac{1}{2}$ ✖

Question Number : 8 Question Id : 1592074418 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 alternating series is not a convergent series?

Options :

1. ✖ $\sum \frac{(-1)^n}{\sqrt{n}}$

2. ✖ $\sum \frac{(-1)^n}{n}$

3. ✖ $\sum (-1)^n \frac{n}{n^2+1}$

4. ✔ $\sum (-1)^n \frac{n}{2n+1}$

Question Number : 9 Question Id : 1592074419 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 values of a and b so that the function

$$f(x) = \begin{cases} 2x+1 \text{ if } x \le 1 \\ ax^2+b \text{ if } 1<x<3 \\ 5x+2a \text{ if } x \ge 3 \end{cases} \text{ is continuous, are}$$

Options :

1. ✖

2, 0

2. ✔ 2, 1

3. ✖ 3, 1

4. ✖ 2, 3

Question Number : 10 Question Id : 1592074420 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 function f(x) = tanx is discontinuous when x is of the form

Options :

1. ✔ $\left(n+\frac{1}{2}\right)\pi,\ n\in\mathbb{Z}$

2. ✖ $n\,\pi,\quad n\in\mathbb{Z}$

3. ✖ $2n\pi,\quad n\in\mathbb{Z}$

$(2n+1)\pi,\ n \in \mathbb{Z}$

4. ✖

Question Number : 11 Question Id : 1592074421 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 $f(x) = x^3 - 6x^2 + 9x + 1$ be a function defined on $[0, 4]$. Then the maximum and minimum values of the function $f(x)$ respectively are

Options :

1. ✖ 4, 2

2. ✖ 5, 0

3. ✔ 5, 1

4. ✖ 4, 1

Question Number : 12 Question Id : 1592074422 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 interval in which the equation $xe^x = 2$ has a root is

Options :

1. ✖ $(1, 2)$

2. ✖ $(-1, 0)$

3. ✖ $(-2, -1)$

4. ✔ $(0, 1)$

Question Number : 13 Question Id : 1592074423 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 curvature of a circle of radius 5 at any point on the circle is

Options :

1. ✖ 5

2. ✖ 25

3. ✔ $\frac{1}{5}$

4. ✖ $\frac{1}{10}$

Question Number : 14 Question Id : 1592074424 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 $(3,3)$ for $x^3+xy^2-6y^2=0$ is given by

Options :

1. ✔ $\sqrt{125}$

2. ✖ $\sqrt{243}$

3. ✖ $\sqrt[5]{8}$

4. ✖ $\sqrt{25}$

Question Number : 15 Question Id : 1592074425 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 of the points on the parabola $y^2 = 8x$, at which the radius of curvature is $7\frac{13}{16}$, is given by

Options :

1. ✖ $\left(3, \frac{9}{8}\right)$

2. ✔ $\left(\frac{9}{8}, 3\right)$

3. ✖ $\left(-3, \frac{9}{8}\right)$

4. ✖ $\left(3, -\frac{9}{8}\right)$

Question Number : 16 Question Id : 1592074426 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 curve passes through the origin and x-axis is the tangent at the origin, then the radius of curvature at $(0,0)$ is

Options :

1. ✖ $\lim\limits_{\substack{x\to 0\\ y\to 0}} \left(\frac{y^2}{2x}\right)$

2. ✖ $\lim\limits_{\substack{y\to 0\\ x\to 0}}\left(\frac{x^2}{y}\right)$

3. ✖ $\lim\limits_{\substack{x\to 0\\ y\to 0}}\left(\frac{y^2}{x}\right)$

4. ✔ $\lim\limits_{\substack{x\to 0\\ y\to 0}}\left(\frac{x^2}{2y}\right)$

Question Number : 17 Question Id : 1592074427 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 curvature of $y = x^3 - 6x^2 + 3x + 1$ at $(1,-1)$ is given by

Options :

1. ✔ $\left(36, -\frac{43}{6}\right)$

2. ✖ $\left(-36, \frac{43}{6}\right)$

3. ✖

$\left(-36, -\frac{43}{6}\right)$

4. ✖ $\left(36, \frac{43}{6}\right)$

Question Number : 18 Question Id : 1592074428 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 envelope of the family of straight lines $y = mx + m^2$, where 'm' is a parameter, is

Options :

1. ✖ $y^2 - 4x = 0$

2. ✖ $x^2 - 4y = 0$

3. ✖ $y^2 + 4x = 0$

4. ✔ $x^2 + 4y = 0$

Question Number : 19 Question Id : 1592074429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The length of the curve $r = a(1+\cos\theta)$ is given by

Options :

1. ✖ a

2. ✖ $2a$

3. ✖ $4a$

4. ✔ $8a$

Question Number : 20 Question Id : 1592074430 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 curve whose parametric equations are $x = e^{-t}\cos t,\ y = e^{-t}\sin t,\ 0 \le t \le \frac{\pi}{2}$, is given by

Options :

1. ✖ $1 - e^{-\pi/2}$

2. ✖ $\sqrt{2}$

3. ✔ $\sqrt{2}\left(1-e^{-\pi/2}\right)$

4. ✖ $\sqrt{2}\left(1+e^{-\pi/2}\right)$

Question Number : 21 Question Id : 1592074431 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 set S of positive irrational numbers together with 1 under multiplication is not a group because

Options :

1. ✔ closure property fails

2. ✖ associative property fails

3. ✖ identify property fails

4. ✖ inverse property fails

Question Number : 22 Question Id : 1592074432 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 non-empty subset of G. Then H is a subgroup of G if

Options :

1. ✖ $a + b$ is in H whenever a and b are in H

2. ✔ $a - b$ is in H whenever a and b are in H

3. ✖ $-a$ is in H whenever a is in H

4. ✖ $(a + b)^2$ is in H whenever a and b are in H

Question Number : 23 Question Id : 1592074433 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 {5, 15, 25, 35} under multiplication modulo 40. What is the identity element of this group?

Options :

1. ✖ 5

2. ✖

15

3. ✔ 25

4. ✖ 35

Question Number : 24 Question Id : 1592074434 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 = GL (2, $\mathbb{R}$) be the general linear group of 2 x 2 matrices over $\mathbb{R}$ Then Z(G).

Options :

1. ✔ $\left\{\begin{bmatrix} a & 0 \\ 0 & a \end{bmatrix} / \, a \neq 0, a \in \mathbb{R}\right\}$

2. ✖ $\left\{\begin{bmatrix} a & 0 \\ 0 & -a \end{bmatrix} / \, a \neq 0, a \in \mathbb{R}\right\}$

3. ✖ $\left\{\begin{bmatrix} 0 & a \\ a & 0 \end{bmatrix} / \, a \neq 0, a \in \mathbb{R}\right\}$

4. ✖

$$\left\{\begin{bmatrix} 0 & -a \\ a & 0 \end{bmatrix} / \, a \neq 0, a \in \mathbb{R}\right\}$$

Question Number : 25 Question Id : 1592074435 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 $G = \langle a \rangle$ and $|a| = 20$. Then the number of subgroups of G is

Options :

1. 4 ✖

2. 8 ✖

3. 10 ✖

4. 6 ✔

Question Number : 26 Question Id : 1592074436 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 G is a group with $|G| = 50$ and H is a subgroup of G, then the possible value for $|H|$ is

Options :

1. ✖ 12

2. ✖ 8

3. ✔ 10

4. ✖ 9

Question Number : 27 Question Id : 1592074437 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 cyclic subgroup of the cyclic group Z_{30} under addition modulo 30?

Options :

1. ✖ {0, 6, 12, 18, 24}

2. ✖ {0, 5, 10, 15, 20, 25}

3. ✔ $\{0, 20\}$

4. ✖ $\{0\}$

Question Number : 28 Question Id : 1592074438 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 S_n be the symmetric group on n symbols. Then the order of S_6 is

Options :

1. ✖ 120

2. ✔ 720

3. ✖ 360

4. ✖ 60

Question Number : 29 Question Id : 1592074439 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 $\alpha = \begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 2 & 1 & 3 & 5 & 4 & 6 \end{bmatrix}$, then $\alpha^{-1} =$

Options :

1. ✔ $\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 2 & 1 & 3 & 5 & 4 & 6 \end{bmatrix}$

2. ✖ $\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 1 & 3 & 2 & 5 & 6 & 4 \end{bmatrix}$

3. ✖ $\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 3 & 1 & 2 & 5 & 4 & 6 \end{bmatrix}$

4. ✖ $\begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 2 & 1 & 3 & 6 & 4 & 5 \end{bmatrix}$

Question Number : 30 Question Id : 1592074440 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 ϕ be an isomorphism from a group G onto a group $\overline{G}$. Then which of the following statement is false?

Options :

1. ✖ ϕ carries the identify of G to the identify of $\overline{G}$.

2. ✖ G is abelian if and only if $\overline{G}$ is abelian.

3. ✖ G is cyclic if and only if $\overline{G}$ is cyclic.

4. ✔ ϕ^{-1} not an isomorphism from $\overline{G}$ onto G.

Question Number : 31 Question Id : 1592074441 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 homogeneous linear differential equation, whose auxiliary equation has the roots ± 1 and $\pm i$, is given by

Options :

1. ✖ $\frac{d^4y}{dx^4} + y = 0$

2. ✔ $\frac{d^4y}{dx^4} - y = 0$

3. ✖ $\left(\frac{d^2y}{dx^2} - y\right)\left(\frac{d^2y}{dx^2} - y\right) = 0$

4. ✖

$$\frac{d^4y}{dx^4} - y^4 = 0$$

Question Number : 32 Question Id : 1592074442 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 integral of $\left(D^3 - 5D^2 + 8D - 4\right)y = e^{2x}$, where $D = \frac{d}{dx}$, is given by

Options :

1. ✖ $\frac{-x^2e^{2x}}{4}$

2. ✖ $\frac{x^2e^x}{2}$

3. ✖ $\frac{x^2e^{2x}}{6}$

4. ✔ $\frac{x^2e^{2x}}{2}$

Question Number : 33 Question Id : 1592074443 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 particular integral of $\frac{d^2y}{dx^2} = P(x)$ is $\frac{x^3}{6}$, then $P(x)$ is given by

Options :

1. ✖ $6x$

2. ✖ x^2

3. ✔ x

4. ✖ $\frac{x^5}{120}$

Question Number : 34 Question Id : 1592074444 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 $y_1(x) = e^{2x}$ and $y_2(x) = e^{-2x}$ are two independent solutions of $f(D)y = 2\cos^2 x$, where $D = \frac{d}{dx}$, then the particular integral is given by

Options :

1. ✔ $-\frac{1}{4} - \frac{1}{8}\cos 2x$

2. ✖ $\frac{1}{4}-\frac{1}{8}\cos 2x$

3. ✖ $-\frac{1}{4}+\frac{1}{8}\cos 2x$

4. ✖ $\frac{1}{4}+\frac{1}{8}\cos 2x$

Question Number : 35 Question Id : 1592074445 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

$\frac{1}{(D+1)^2}e^{-x} =$ _____ , where $D=\frac{d}{dx}$

Options :

1. ✖ $\frac{e^{-x}}{6}$

2. ✖ $x\,e^{-x}$

3. ✖ $\frac{x^2e^{-x}}{3}$

4. ✔ $\frac{x^3e^{-x}}{6}$

Question Number : 36 Question Id : 1592074446 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 $\left[x^2D^2 - xD + 1\right]y = \ln x$, where $D = \frac{d}{dx}$, is given by

Options :

1. ✖ $(c_1 + c_2 x)\ln x + 2 + e^x$, where c_1 and c_2 are arbitrary constants.

2. ✔ $(c_1 + c_2 \ln x)x + 2 + \ln x$, where c_1 and c_2 are arbitrary constants.

3. ✖ $(c_1 + c_2 \ln x) + 2 + \ln x$, where c_1 and c_2 are arbitrary constants.

4. ✖ $(c_1 + c_2 x)e^x + 2 + \ln x$, where c_1 and c_2 are arbitrary constants.

Question Number : 37 Question Id : 1592074447 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

For the differential equation $\frac{d^2y}{dx^2}+5\frac{dy}{dx}+6y=15$, the solution $y(x)$ approaches the following value when $x\to\infty$

Options :

1. ✔ $\frac{15}{6}$

2. ✖ $\frac{15}{12}$

3. ✖ 90

4. ✖ 15

Question Number : 38 Question Id : 1592074448 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 $a^2\frac{d^2y}{dx^2}=y-y_2$, subject to

(i) $y=y_1$ at $x=0$

(ii) $y\to y_2$ as $x\to\infty$, where a, y_1 and y_2 are constants,

is given by

Options :

1. ✖ $y=(y_1+y_2)e^{-x/a}-y_2$

2. ✖ $y=(y_1-y_2)e^{x/a}+y_2$

3. ✔ $y=(y_1-y_2)e^{-x/a}+y_2$

4. ✖ $y=(y_1+y_2)e^{x/a}-y_2$

Question Number : 39 Question Id : 1592074449 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 $z = ax^2 + by^2$ is

Options :

1. ✖ $px^2 - qy^2 = 2z$

2. ✖ $px^2 + qy^2 = z$

3. ✖ $qx + py = 2z$

4. ✔ $px + qy = 2z$

Question Number : 40 Question Id : 1592074450 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 $(z-y)\frac{\partial z}{\partial x}+(x-z)\frac{\partial z}{\partial y}=y-x$ is

Options :

1. ✖ $\phi(xyz, x+y+z)=0$

2. ✖ $\phi\left(xyz,\ x^2+y^2+z^2\right)=0$

3. ✔ $\phi\left(x+y+z,\ x^2+y^2+z^2\right)=0$

4. ✖ $\phi\left(\frac{1}{x}+\frac{1}{y}+\frac{1}{z},\ x+y+z\right)=0$

Question Number : 41 Question Id : 1592074451 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 statement is false?

Options :

The set of all real valued functions defined on some interval forms a vector space.

1. ✖

$\mathbb{R}^n$ is a vector space $(n \geq 1)$.

2. ✖

Every vector space is itself a subspace.

3. ✖

$\mathbb{R}^2$ is a subspace of $\mathbb{R}^3$.

4. ✔

Question Number : 42 Question Id : 1592074452 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 $A = \begin{bmatrix} 1 & -3 & -2 \\ -5 & 9 & 1 \end{bmatrix}$, then which of the following vectors belongs to the null space of A?

Options :

1. ✔ $\begin{bmatrix} 5 \\ 3 \\ -2 \end{bmatrix}$

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

3. ✖ $\begin{bmatrix} 5 \\ 3 \\ 2 \end{bmatrix}$

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

Question Number : 43 Question Id : 1592074453 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 sets is a linearly dependent set?

Options :

1. ✖ $\left\{\begin{bmatrix} 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \end{bmatrix}\right\}$

2. ✖ $\left\{\begin{bmatrix} 1 \\ 2 \end{bmatrix}, \begin{bmatrix} 2 \\ 3 \end{bmatrix}\right\}$

3. ✔ $\left\{\begin{bmatrix} -2 \\ 3 \end{bmatrix}, \begin{bmatrix} 6 \\ -9 \end{bmatrix}\right\}$

4. ✖

$$\left\{\begin{bmatrix}1\\0\end{bmatrix},\begin{bmatrix}0\\2\end{bmatrix}\right\}$$

Question Number : 44 Question Id : 1592074454 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

$$\text{If } \begin{bmatrix}6\\16\\-5\end{bmatrix} = K_1\begin{bmatrix}0\\2\\-1\end{bmatrix} + K_2\begin{bmatrix}2\\2\\0\end{bmatrix}, \text{ then } K_1 + K_2 =$$

Options :

1. ✔ 8

2. ✖ 2

3. ✖ 6

4. ✖ 0

Question Number : 45 Question Id : 1592074455 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 basis for the set $\left\{\begin{bmatrix} x \\ y \\ z \end{bmatrix} \in \mathbb{R}^3/(x-3y+2z) = 0\right\}$ is

Options :

1. ✖ $\left\{\begin{bmatrix} 3 \\ 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 0 \\ -2 \\ 1 \end{bmatrix}\right\}$

2. ✔ $\left\{\begin{bmatrix} 3 \\ 1 \\ 0 \end{bmatrix}, \begin{bmatrix} -2 \\ 0 \\ 1 \end{bmatrix}\right\}$

3. ✖ $\left\{\begin{bmatrix} 1 \\ 0 \\ 3 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ -2 \end{bmatrix}\right\}$

4. ✖ $\left\{\begin{bmatrix} 3 \\ 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 0 \\ -2 \end{bmatrix}\right\}$

Question Number : 46 Question Id : 1592074456 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 coordinate vector $[x]_\beta$ of $x = \begin{bmatrix} 4 \\ 5 \end{bmatrix}$ relative to a basis $\beta = \left\{\begin{bmatrix} 2 \\ 1 \end{bmatrix}, \begin{bmatrix} -1 \\ 1 \end{bmatrix}\right\}$ for $\mathbb{R}^2$ is

Options :

1. ✖

$\begin{bmatrix} 2 \\ 3 \end{bmatrix}$

2. ✖ $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$

3. ✔ $\begin{bmatrix} 3 \\ 2 \end{bmatrix}$

4. ✖ $\begin{bmatrix} 4 \\ 3 \end{bmatrix}$

Question Number : 47 Question Id : 1592074457 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 subspace $\{(a, b, c, d) : a - 3b + c = 0\}$is

Options :

1. ✔ 3

2. ✖ 2

3. ✖ 1

4. ✖ 0

Question Number : 48 Question Id : 1592074458 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 $A=\begin{bmatrix} 1 & -4 & 9 & -7 \\ -1 & 2 & -4 & 1 \\ 5 & -6 & 10 & 7 \end{bmatrix}$, then rank A =

Options :

1. ✖ 1

2. ✖ 3

3. ✖ 4

4. ✔ 2

Question Number : 49 Question Id : 1592074459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f:\mathbb{R}\to\mathbb{Z}$ is defined by $f(x)=[x]$, where $[x]$ is the greatest integer less than or equal to x, then $\lim\limits_{x\to 1} f(x)$ =

Options :

1. ✖ 0

2. ✖ 1

3. ✖ -1

4. ✔ doesn't exist

Question Number : 50 Question Id : 1592074460 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 $f(x)=\begin{cases} x^2+kx+1, & x<1 \\ 2x^2-kx+1, & x\geq 1 \end{cases}$ is continuous function, then the value of k is

Options :

1. ✖ 0

2. ✔ $\frac{1}{2}$

3. ✖ 1

4. ✖ $\frac{3}{2}$

Question Number : 51 Question Id : 1592074461 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 function is defined on $\mathbb{R}$ by

$$f(x)=\begin{cases}2023, & \text{if } x \text{ is rational}\\ -2023, & \text{if } x \text{ is irrational}\end{cases}$$,then $f(x)$ is

Options :

1. ✖ continuous at every point.

2. ✖ continuous only at origin.

3. ✔ discontinuous at every point.

4. ✖ discontinuous only at origin.

Question Number : 52 Question Id : 1592074462 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 true?

Options :

1. $f(x)=\frac{1}{x}$ is continuous on $[0, 1]$ but not uniformly continuous on $[0, 1]$. ✖

2. $f(x)=\frac{1}{x^2}$ is uniformly continuous on $[2023, \infty)$. ✔

3. $f(x)=\tan^{-1}x$ is not uniformly continuous on $\mathbb{R}$. ✖

4. $f(x)=\frac{\sin x}{x}$ is uniformly continuous on $(-\infty, \infty)$. ✖

Question Number : 53 Question Id : 1592074463 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 $f(x)=\begin{cases} x^n \sin\left(\frac{1}{x}\right), & x\neq 0 \\ 0, & x=0 \end{cases}$ is differentiable at $x=0$, then

Options :

1. ✖ $n=0$

2. ✖ $n=1$

3. ✔ $n>1$

4. ✖ $n<1$

Question Number : 54 Question Id : 1592074464 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 c is a point in (0, 3) such that the tangent at $x=c$ to the function $f(x)=x^3$ is parallel to the line joining $(0,0)$ and $(3,27)$, then the value of c is

Options :

1. ✖ -3

2. ✖ $\sqrt{27}$

3. ✖

3

4. ✔ $\sqrt{3}$

Question Number : 55 Question Id : 1592074465 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

Rolle's theorem is applicable to which of the following functions?

Options :

1. ✖ $f(x) = |x| \text{ in } [-1, 1]$

2. ✖ $f(x) = \tan x \text{ in } [0, \pi]$

3. ✖ $f(x) = x^3 \text{ in } [1, 3]$

4. ✔ $f(x) = e^x \sin x \text{ in } [0, \pi]$

Question Number : 56 Question Id : 1592074466 Question Type : MCQ Option

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 true?

Options :

Maclaurin's series expansion of $f(x) = \ln x$ exists.

1. ✖

Taylor's series expansion of $f(x) = \cot x$ about $x = 0$ exists.

2. ✖

$$\ln(1+x) = x + \frac{x^2}{2} + \frac{x^3}{3} + \ldots, \forall x.$$

3. ✖

$$\tan^{-1} x = x - \frac{x^3}{3} + \frac{x^5}{5} - \ldots, \forall x.$$

4. ✔

Question Number : 57 Question Id : 1592074467 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

$$\lim_{x \to 0} \frac{x - \sin x}{x^3} =$$

Options :

1. ✔

$\frac{1}{6}$

6

2. ✖

$\frac{1}{3}$

3. ✖

3

4. ✖

Question Number : 58 Question Id : 1592074468 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 $f:[0,1]\to\mathbb{R}$ is defined by $f(x)=\begin{cases}1, & x\in\mathbb{Q}\\ 0, & x\in\mathbb{R}-\mathbb{Q}\end{cases}$, then

Options :

$\int_0^{\bar{1}} f(x)dx$ exists but $\int_{\bar{0}}^1 f(x)dx$ does not exist.

1. ✖

$\int_0^{\bar{1}} f(x)dx$ does not exist but $\int_{\bar{0}}^1 f(x)dx$ exists.

2. ✖

both $\int_0^{\bar{1}} f(x)dx$ and $\int_{\bar{0}}^1 f(x)dx$ exist and they are equal.

3. ✖

both $\int_0^{\bar{1}} f(x)dx$ and $\int_{\bar{0}}^1 f(x)dx$ exist but they are not equal

4. ✔

Question Number : 59 Question Id : 1592074469 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 $f(x) = x$ on [0, 1] and the partition set $P = \left\{0, \frac{1}{3}, \frac{2}{3}, 1\right\}$, then the lower Riemann sum is given by

Options :

1. $\frac{2}{3}$ ✖

2. $\frac{1}{3}$ ✔

3. 1 ✖

4. $\frac{1}{2}$ ✖

Question Number : 60 Question Id : 1592074470 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 $\int_0^{x^3} f(t)dt = x^2 \cos 2\pi x$, then $f(27)$ is equal to

Options :

1. ✖ $-\frac{2\pi}{3}$

2. ✔ $\frac{2}{9}$

3. ✖ $\frac{2}{3}$

4. ✖ -2π

Question Number : 61 Question Id : 1592074471 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 $(x+y)^2 \frac{dy}{dx} = 1$ is

Options :

1. ✖ $y = \sin^{-1}(x + y) + c$

2. ✖ $y = (x + y)^2 + c$

3. ✖ $y = \tan^{-1}(x - y) + c$

4. ✔ $y = \tan^{-1}(x + y) + c$

Question Number : 62 Question Id : 1592074472 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 $y(x)$ is the solution of $\frac{dy}{dx} - y = e^x$, $y(0)=1$, then $y(-1) =$

Options :

1. ✖ $2e$

2. ✔ 0

$-2e$

3. ✖

$\frac{2}{e}$

4. ✖

Question Number : 63 Question Id : 1592074473 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 k such that $(x^2 + y^2 + x)\,dx - kxy\,dy = 0$ is exact is

Options :

-2

1. ✔

2

2. ✖

1

3. ✖

-1

4. ✖

Question Number : 64 Question Id : 1592074474 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 integrating factor of $\left(xy^2 - e^{\frac{1}{x^3}}\right) dx - x^2 y\, dy = 0$ is

Options :

1. $\frac{-4}{x}$ ✖

2. $\frac{1}{x^4}$ ✔

3. $-\frac{1}{x}$ ✖

4. $\frac{1}{x^3}$ ✖

Question Number : 65 Question Id : 1592074475 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 $yp^2 + (x - y)\, p - x = 0$, where $p = \frac{dy}{dx}$ is

Options :

1. ✖ $(y + x + c)(x^2 - y^2 + c) = 0$

2. ✖ $(y - x - c)(x^2 - y^2 - c) = 0$

3. ✖ $(y + x - c)(x^2 + y^2 - c) = 0$

4. ✔ $(y - x - c)(x^2 + y^2 - c) = 0$

Question Number : 66 Question Id : 1592074476 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 $y^2 \log y = xy\,p + p^2$, where $p = \frac{dy}{dx}$ is

Options :

1. ✖ $\log y = cx^2$

2. ✔ $\log y = cx + c^2$

3. ✖ $y = cx - c^2$

$y = cx^2$

4. ✖

Question Number : 67 Question Id : 1592074477 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 $y + px = x^4p^2$, where $p = \frac{dy}{dx}$ is

Options :

1. $xy = c^2x - c$ ✔

2. $y = c^2x + c$ ✖

3. $xy = c^2x^2 - c$ ✖

4. $y = c^2x^2 + c$ ✖

Question Number : 68 Question Id : 1592074478 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 singular solution of the Clairaut's equation $y = x\frac{dy}{dx} + \left(\frac{dy}{dx}\right)^2$ is

Options :

1. $x^2 + 4y = 0$ ✔

2. $y^2 + 4x = 0$ ✖

3. $x^2 - 4y = 0$ ✖

4. $y^2 - 4x = 0$ ✖

Question Number : 69 Question Id : 1592074479 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 differential equations is linear?

Options :

1. $\frac{dy}{dx} + y = xy^2$ ✖

2. ✔

$$\frac{dy}{dx} - xy = x^3$$

3. ✖ $$\frac{dy}{dx} + y^2 = 1$$

4. ✖ $$\frac{dy}{dx} + x = x^3y^3$$

Question Number : 70 Question Id : 1592074480 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 $(y \cos x + 1)dx + \sin x\, dy = 0$ is

Options :

1. ✖ $y = \sin x + c$

2. ✖ $y \cos x + x = c$

3. ✖ $y = \cos x + c \sin x$

4. ✔ $y \sin x + x = c$

Question Number : 71 Question Id : 1592074481 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 second order differential equation whose two linearly independent solutions are 1, e^{2x}, is

Options :

1. $\frac{d^2y}{dx^2}+2y=0$ ✔

2. $\frac{d^2y}{dx^2}-2y=0$ ✖

3. $\frac{d^2y}{dx^2}+2\frac{dy}{dx}=0$ ✖

4. $\frac{d^2y}{dx^2}-2\frac{dy}{dx}=0$ ✖

Question Number : 72 Question Id : 1592074482 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 $\frac{d^4y}{dx^4} - 2\frac{d^2y}{dx^2} + y = 0$ is

Options :

1. $(C_1 + C_2x)\, e^{-x} + (C_3 + C_4x)\, e^{x}$ ✔

2. $C_1 + C_2e^{-x} + C_3x + C_4e^{x}$ ✖

3. $C_1 + C_2x^2e^{-x} + C_3x + C_4\, x\, e^{x}$ ✖

4. $C_1 + C_2x + C_3x^2 + C_4x^4$ ✖

Question Number : 73 Question Id : 1592074483 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 zero divisors of a ring $(Z_6, +_6, \times_6)$, is given by

Options :

1. 6 ✖

2. 4 ✖

3. ✔ 3

4. ✖ 2

Question Number : 74 Question Id : 1592074484 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 an integral domain?

Options :

1. ✖ $(\mathbb{Z}, +, .)$

2. ✖ $(\mathbb{Z}_p, +_p, \times_p)$, where p is prime

3. ✖ $(\mathbb{R}, +, .)$

4. ✔ $(\{0,2,4,6\}, +_{10}, \times_{10})$

Question Number : 75 Question Id : 1592074485 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a ring of $(Z_6, +_6, \times_6)$, which of the following is not an idempotent element?

Options :

1. ✖ 0

2. ✖ 1

3. ✔ 2

4. ✖ 3

Question Number : 76 Question Id : 1592074486 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 be the ring of 2×2 matrices over integers. Then $K=\left\{\begin{bmatrix} a & b \\ 0 & 0 \end{bmatrix} \middle/ a, b \in \mathbb{Z}\right\}$ is

Options :

1. ✔ right ideal of M

2.

left ideal of M

ideal of M

3. ✖

neither a right ideal nor a left ideal of M

4. ✖

Question Number : 77 Question Id : 1592074487 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

For the ring (Z, +, .) , which of the following is not a maximal ideal?

Options :

1. ✖ $(2Z, +, .)$

2. ✖ $(3Z, +, .)$

3. ✔ $(4Z, +, .)$

$(5Z, +, .)$

4. ✖

Question Number : 78 Question Id : 1592074488 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 field of $Q\left[\sqrt{2}\right]=\left\{a+b\sqrt{2}/a, b\in\mathbb{Q}\right\}$, the inverse of $a+b\sqrt{2}$ is

Options :

1. $a-b\sqrt{2}$ ✖

2. $b-a\sqrt{2}$ ✖

3. $\frac{a-b\sqrt{2}}{a^2-2b^2}$ ✔

4. $\frac{b+a\sqrt{2}}{a^2-2b^2}$ ✖

Question Number : 79 Question Id : 1592074489 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 and R' be two rings. The onto homomorphism $f: R \to R'$ is an isomorphism if

Options :

kernel of $f = \{0\}$

1. ✔

kernel of $f \neq \{0\}$

2. ✖

image of $f = \{0\}$

3. ✖

image of $f \neq \{0\}$

4. ✖

Question Number : 80 Question Id : 1592074490 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

With respect to usual addition and multiplication,

$$R = \left\{ \begin{bmatrix} a+ib & c+id \\ -c+id & a-ib \end{bmatrix} \middle/ a, b, c, d \in \mathbb{R} \right\} \text{ forms}$$

Options :

division ring but not field

1. ✔

field

2. ✖

integral domain but not division ring

3. ✖

Euclidean ring

4. ✖

Question Number : 81 Question Id : 1592074491 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 δ is a positive number, then a neighbourhood of the point (a, b) is

Options :

1. ✔ $\{(x, y) : \quad |x - a| < \delta, |y - b| < \delta\}$

2. ✖ $\{(x, y) : \quad |x - a| < \delta, |y - b| > \delta\}$

3. ✖ $\{(x, y) : \quad |x - a| > \delta, |y - b| < \delta\}$

4. ✖ $\{(x, y) : \quad |x - a| \geq \delta, |y - b| \geq \delta\}$

Question Number : 82 Question Id : 1592074492 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{(x,y)\to(0,0)} \frac{x^2-y^2}{x^2+y^2} =$$

Options :

1. ✖ 1

2. ✖ -1

3. ✖ 0

4. ✔ does not exist

Question Number : 83 Question Id : 1592074493 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 $u = e^x \cos y$, then $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 y}{\partial y^2} =$

Options :

1. ✖ 1

2. ✖

$2e^x \cos y$

0

3. ✔

$-2e^x \sin y$

4. ✖

Question Number : 84 Question Id : 1592074494 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 $u = \log\left(\frac{x^4+y^4}{x+y}\right)$, then $x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y} =$

Options :

3

1. ✖

2

2. ✖

log u

3. ✔

2 log u

4. ✖

Question Number : 85 Question Id : 1592074495 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 $z = f(x+y) + g(x-y)$, then $\frac{\partial^2 z}{\partial x \partial y} =$

Options :

1. $f'(x+y) - g'(x-y)$ ✗

2. $f''(x+y) + g''(x-y)$ ✗

3. $f''(x+y) - g''(x-y)$ ✓

4. $f''(x+y)\, g''(x-y)$ ✗

Question Number : 86 Question Id : 1592074496 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 Taylor's series expansion of $f(x, y) = e^{x+y}$ in powers of x and y upto second degree terms is

Options :

1. $1 + xy + \frac{(xy)^2}{2}$

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

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

4. $1 + xy - \frac{(xy)^2}{2}$

Question Number : 87 Question Id : 1592074497 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 $f(x, y, z) = xy + yz + zx$. Then the total differential $df =$

Options :

1. $ydx + z\,dy + x\,dz$

2. $yz\,dx + xzdy + xy\,dz$

3.

$(y + z)dx + (x + z)\, dy + (x + y)\, dz$

$(x + y)\, dx + (y + z)\, dy + (x + z)\, dz$

4.

Question Number : 88 Question Id : 1592074498 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 $z = xy(x + y)$, $x = t^2$, $y = 2t$, then $\frac{dz}{dt}$ at $t = 1$ is

Options :

1. 26

2. 16

3. 10

4. 36

Question Number : 89 Question Id : 1592074499 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 $x^3 + y^3 - 6xy = 0$, then $\frac{dy}{dx}$ at $(3, 3) =$

Options :

1. ✖ $\frac{1}{7}$

2. ✔ -1

3. ✖ 7

4. ✖ $-\frac{1}{7}$

Question Number : 90 Question Id : 1592074500 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 $u = e^{x+y} f(x - y)$, then $\frac{1}{u}\left(\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y}\right) =$

Options :

1. ✖ 0

2. ✔ 2

3. ✖ 2u

4. ✖ −2u

Question Number : 91 Question Id : 1592074501 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 rank of the matrix $A = \begin{pmatrix} 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 1 & 2 & 3 & 4 \end{pmatrix}$ is

Options :

1. ✖ 1

2. ✖ 3

3. ✔ 2

4. ✖ 4

Question Number : 92 Question Id : 1592074502 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 $A=\begin{bmatrix}1 & 1 & 0\\ 0 & 2 & 1\\ 0 & 0 & 3\end{bmatrix}$, then the eigenvalues of adjA are

Options :

1. ✖ 1, 1, 1

2. ✔ 2, 3, 6

3. ✖ 1, 4, 9

4. ✖ 1, 8, 10

Question Number : 93 Question Id : 1592074503 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 characteristic equation of $A_{3\times3}$ matrix is $\lambda^3+\left(a^2+b^2+c^2\right)\lambda=0$, where a, b, c are constants, then the matrix A^3 is

Options :

1. ✖

$$-\frac{1}{\left(a^2+b^2+c^2\right)}A$$

2. ✖ $$A-\left(a^2+b^2+c^2\right)A^2$$

3. ✔ $$-\left(a^2+b^2+c^2\right)A$$

4. ✖ $$\left(a^2+b^2+c^2\right)A$$

Question Number : 94 Question Id : 1592074504 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 non-singular matrix $A_{n\times n}$ is diagonalizable over the set of real numbers, B is a modal matrix and D is a spectral matrix, then $BD^{2023}B^{-1}$ is equal to

Options :

1. ✖ $$B^{-1}A^{2023}B$$

2. ✔ $$A^{2023}$$

3. ✖ A^{2023+n}

4. ✖ I

Question Number : 95 Question Id : 1592074505 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 linear transformation $T:\mathbb{R}^2 \to \mathbb{R}^2$ is defined by

$$T\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} y \\ -x \end{pmatrix},$$

then the eigenvalues of T are

Options :

1. ✖ 1 and -1 over the set of all real numbers $\mathbb{R}$

2. ✖ i and $-i$ over the set of all real numbers $\mathbb{R}$

3. ✖ 1 and 1 over the set of all real numbers $\mathbb{R}$

4. ✔ does not exist in $\mathbb{R}$

Question Number : 96 Question Id : 1592074506 Question Type : MCQ Option

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 minimal polynomial of the identity matrix of order 3 is

Options :

1. ✖ λ^3

2. ✖ $(\lambda-1)^3$

3. ✔ $\lambda-1$

4. ✖ λ^3-1

Question Number : 97 Question Id : 1592074507 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 $\langle f(x), g(x)\rangle = \int_0^1 f(x)g(x)dx$, then $\left\|x-\frac{1}{2}\right\|^2$ is equal to

Options :

1. ✖ 0

2. ✔ $\frac{1}{12}$

3. ✖ 12

4. ✖ $\frac{1}{6}$

Question Number : 98 Question Id : 1592074508 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 unit vector orthogonal to $\begin{pmatrix} 2 \\ -1 \\ 6 \end{pmatrix}$ in $\mathbb{R}^3$ is

Options :

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

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

3. ✖ $\begin{pmatrix} \frac{1}{\sqrt{6}} \\ \frac{4}{\sqrt{6}} \\ -\frac{1}{\sqrt{6}} \end{pmatrix}$

4. ✖ $\begin{pmatrix} -1 \\ 4 \\ 1 \end{pmatrix}$

Question Number : 99 Question Id : 1592074509 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 α, β are two orthonormal vectors in an inner product space $V(F)$, then $||\ \alpha - \beta\ ||$ =

Options :

1. ✖ 1

2. ✖ 2

3. ✖ $\frac{1}{\sqrt{2}}$

4. ✔ $\sqrt{2}$

Question Number : 100 Question Id : 1592074510 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 be a subspace of an inner product space $V(F)$ such that $\dim W = 3$ and $\dim V = 10$. Then $\dim W^{\perp} =$

Options :

1. ✔ 7

2. ✖ -7

3. ✖ $\frac{10}{3}$

4. ✖ 13

Analytical Ability

Section Id : 15920788

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 :	159207102
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 1592074511 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix 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 statement I alone is sufficient to answer the question.

2. Select option 2 if the data given 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 statement I and statement II put together are not sufficient and additional data is needed to answer the question.

Sub questions

Question Number : 101 Question Id : 1592074512 Question Type : MCQ Option Shuffling : No 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 of $x - 2$, $y + 4$, $z - 6$ and 10?

Statement I: x, y, z are integers

Statement II: $x + y + z = 200$

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 102 Question Id : 1592074513 Question Type : MCQ Option Shuffling : No 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 surface area of the sphere?

Statement I : The sphere is made of steel

Statement II: The radius of the sphere is 8 cm

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 103 Question Id : 1592074514 Question Type : MCQ Option Shuffling : No 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

Is the value of K unique?

Statement I : $K < 0$

Statement II: $K^2 = 81$

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 104 Question Id : 1592074515 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If n(A) denotes the number of elements of set A, what is $n(A \cup B)$?

Statement I : $n(A) = 54$

Statement II: $n(B) = 60$

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 105 Question Id : 1592074516 Question Type : MCQ Option Shuffling : No 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 present age of the mother?

Statement I : The sum of the present age of the mother and her daughter is 64

Statement II: 8 years ago the mother age was 3 times that of her daughter

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 106 Question Id : 1592074517 Question Type : MCQ Option Shuffling : No 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 speed of the car?

Statement I : The car covers a distance of 100 km

Statement II: The time taken is 2 hours

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 107 Question Id : 1592074518 Question Type : MCQ Option Shuffling : No 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

Is $a > b$?

Statement I: $a > c$

Statement II: $Kc > Ka, K < 0$

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 108 Question Id : 1592074519 Question Type : MCQ Option Shuffling : No 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

Is the matrix A singular?

Statement I: A is a 4 x 4 matrix

Statement II: The trace of A is zero

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 109 Question Id : 1592074520 Question Type : MCQ Option Shuffling : No 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 brothers does Ramu have?

Statement I: Ramu's father has 3 children

Statement II: Ramu has two sisters

Options :

1. ✖ 1

2. ✖

2

3. ✔ 3

4. ✖ 4

Question Number : 110 Question Id : 1592074521 Question Type : MCQ Option Shuffling : No 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 integers are there of the form $\frac{3x}{7}$?

Statement I: x is an integer and $0 < x < 40$

Statement II: x is an even integer

Options :

1. ✔ 1

2. ✖ 2

3. ✖ 3

4. ✖ 4

Sub-Section Number : 2

Sub-Section Id : 159207103

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 111 Question Id : 1592074522 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 next number in the following sequence?
210, 336, 504, 720

Options :

1. ✖ 860

2. ✖ 824

3. ✔ 990

4. ✖ 1024

Question Number : 112 Question Id : 1592074523 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

216 : 720 :: 125 : __ .

Options :

1. ✖ 625

2. ✔ 120

3. ✖ 250

4. ✖ 200

Question Number : 113 Question Id : 1592074524 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

24 : 54 :: 54 : __ .

Options :

1. ✖ 110

2. ✖ 108

3. ✔ 113

4. ✖ 121

Question Number : 114 Question Id : 1592074525 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

Find the odd thing out.
Srilanka, Japan, Iceland, Netherlands, Australia.

Options :

1. ✖ Australia

2. ✖ Japan

3. ✖ Srilanka

4. ✔ Netherlands

Question Number : 115 Question Id : 1592074526 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 12, 32, 55, __, 121 is

Options :

1. ✖ 77

2. ✖ 101

3. ✖ 99

4. ✔ 110

Question Number : 116 Question Id : 1592074527 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

Find the odd thing out.
EV, IR, KP, LO, JN, FU.

Options :

1. ✖ IR

2. ✖ EV

3. ✔ JN

4. ✖ KP

Question Number : 117 Question Id : 1592074528 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 1E2, 2M3, 3Y4, 4O5 is

Options :

1. ✔ 5I6

2. ✖ 5O4

3. ✖ 2C5

4. ✖ 5H6

Question Number : 118 Question Id : 1592074529 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 odd one out in the sequence 21:66, 22:69, 23:71, 25:78, 26:81 is

Options :

26:81

1. ✖

25:78

2. ✖

21:66

3. ✖

23:71

4. ✔

Question Number : 119 Question Id : 1592074530 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 next term in the following sequence?
1, 2, 5, 10, 17, __ .

Options :

20

1. ✖

26

2. ✔

23

3. ✖

27

4. ✖

Question Number : 120 Question Id : 1592074531 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 pattern

627 : __ :: 498 : 7

Options :

3

1. ✖

7

2. ✖

8

3. ✖

5

4. ✔

Sub-Section Number :	3
Sub-Section Id :	159207104
Question Shuffling Allowed :	No

Is Section Default? : null

Question Id : 1592074532 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (121 to 125)

Directions: Study the following table and answer the question below

Table: Percentage of marks scored by students of B.Sc.

Marks Percentage	Men	Women
> 70 (Distinction)	12	20
60 – 70	10	13
50 – 59	20	22
35 – 49	10	8
< 35 (Fail)	8	2

Sub questions

Question Number : 121 Question Id : 1592074533 Question Type : MCQ Option Shuffling : No 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 total percentage of men who wrote B.Sc. examination is

Options :

48

1. ✔

50

2. ✖

52

3. ✖

46

4. ✖

Question Number : 122 Question Id : 1592074534 Question Type : MCQ Option Shuffling : No 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 percentage of students who scored distinction is

Options :

24.5

1. ✖

25

2. ✖

25.6

3. ✔

23

4. ✖

Question Number : 123 Question Id : 1592074535 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The fail percentage of students in the B.Sc. examination is

Options :

1. ✖ 10

2. ✔ 8

3. ✖ 9

4. ✖ 5

Question Number : 124 Question Id : 1592074536 Question Type : MCQ Option Shuffling : No 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 pass percentage of women in the B.Sc. examination is

Options :

1. ✔ 96.92

2. ✖ 97.27

3. ✖

99

98

4. ✖

Question Number : 125 Question Id : 1592074537 Question Type : MCQ Option Shuffling : No 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 percentage of students who scored more than 50 percent in the B.Sc. examination is

Options :

75.6

1. ✖

82

2. ✖

79

3. ✖

77.6

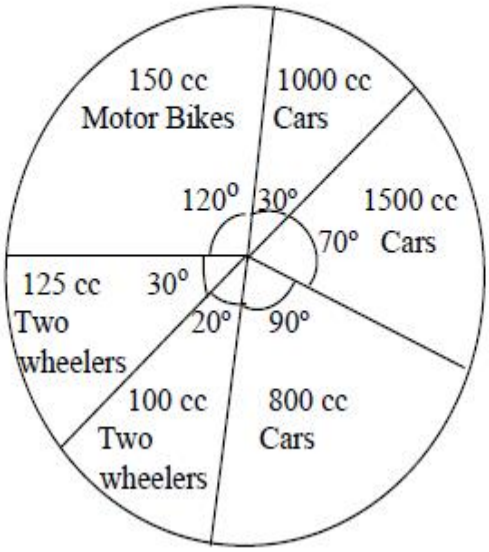
4. ✔

Sub-Section Number :	4
Sub-Section Id :	159207105
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 1592074538 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (126 to 130)

An automobile company manufactures vehicles as given in the Pie diagram.
Study this and answer the question below



Sub questions

Question Number : 126 Question Id : 1592074539 Question Type : MCQ Option Shuffling : No 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 ratio of 125 cc two wheelers to 100 cc two wheelers is

Options :

1. 2 : 3 ✖

2. 3 : 2 ✔

3 : 5

3. ✖

2 : 5

4. ✖

Question Number : 127 Question Id : 1592074540 Question Type : MCQ Option Shuffling : No 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 ratio of the four wheelers and two wheelers produced by the company is

Options :

18 : 16

1. ✖

19 : 16

2. ✖

18 : 17

3. ✖

19 : 17

4. ✔

Question Number : 128 Question Id : 1592074541 Question Type : MCQ Option Shuffling : No 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 percentage of 1000 cc cars in the total production of the company is

Options :

1. ✖ 7.23

2. ✔ 8.33

3. ✖ 9.10

4. ✖ 9.43

Question Number : 129 Question Id : 1592074542 Question Type : MCQ Option Shuffling : No 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 number of 150 cc two wheelers manufactured in a month is 2000, then the total number of vehicles manufactured by the company in that month is

Options :

1. ✖ 8000

2. ✖ 4000

3.

6000

4. 5500

Question Number : 130 Question Id : 1592074543 Question Type : MCQ Option Shuffling : No 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 period, if the total number of vehicles manufactured by the company is 10800, then the number of 1500 cc cars among them is

Options :

1. 2100

2. 3000

3. 2300

4. 3100

Sub-Section Number :	5
Sub-Section Id :	159207106
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 131 Question Id : 1592074544 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 "party" is written as "2#635" and "head" is written as "@9#4". What will be "hearty" in that code language?

Options :

1. @2#694 ✖

2. @6?954 ✖

3. @63#95 ✖

4. @9#635 ✔

Question Number : 132 Question Id : 1592074545 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 BOAT is coded as 201152, then the code for SAILOR is

Options :

1815129119

1. ✔

2192151818

2. ✖

1229511819

3. ✖

5129681522

4. ✖

Question Number : 133 Question Id : 1592074546 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 coding language SIT = 33, REST = 46, then RUN is

Options :

28

1. ✔

40

2. ✖

53

3. ✖

36

4. ✖

Question Number : 134 Question Id : 1592074547 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 "PAINTING" is written as "APNIITGN" then "BRUSHING" is written as

Options :

NBSUIGHR

1. ✖

RBSUIHGN

2. ✔

USHIBRGN

3. ✖

NRBSUIHG

4. ✖

Question Number : 135 Question Id : 1592074548 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 “Gold” is “Copper”, “Metal” is “Water”, “Plastic” is “Metal” and “Water” is “Plastic”, then which of the following does not conduct electricity?

Options :

1. ✖ Gold

2. ✖ Copper

3. ✖ Plastic

4. ✔ Metal

Question Number : 136 Question Id : 1592074549 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

BED : 40 :: DEAF : ___

Options :

1. ✖ 60

2. ✔ 120

46

3. ✖

100

4. ✖

Question Number : 137 Question Id : 1592074550 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 some language "Dog can run" is "rups gim ju", "Birds cannot run" is "gim pet ju kis" and "Ostrich cannot fly" is "chim bid to pet". Then which word stand for "Cannot" in that language?

Options :

gim

1. ✖

kis

2. ✖

pet

3. ✔

ju

4. ✖

Question Number : 138 Question Id : 1592074551 Question Type : MCQ Optio

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 BAT and BALL are coded as 23 and 27 respectively, then "WICKET" coded as

Options :

1. 25 ✖

2. 71 ✔

3. 60 ✖

4. 53 ✖

Question Number : 139 Question Id : 1592074552 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

Some code is used to convert "CODING" to "DSNYNQ". What is "DECODE" converted to using that code?

Options :

1. GILCOE ✖

2. ✔ EILECO

3. ✖ CLEOIC

4. ✖ OLOICE

Question Number : 140 Question Id : 1592074553 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 Biscuit = 14, Chips = 10, Chocolate = 18, then what is Cooldrink?

Options :

1. ✖ 16

2. ✔ 18

3. ✖ 10

4. ✖ 19

Sub-Section Number : 6

Sub-Section Id : 159207107

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 141 Question Id : 1592074554 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 today is Sunday, what day had fallen 200 days ago?

Options :

1. ✖ Sunday

2. ✖ Monday

3. ✖ Tuesday

4. ✔ Wednesday

Question Number : 142 Question Id : 1592074555 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 9th March of 1995 is Saturday, then the 9th March of 1996 is

Options :

1. ✔ Monday

2. ✖ Wednesday

3. ✖ Thursday

4. ✖ Saturday

Question Number : 143 Question Id : 1592074556 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 clock, the angle between the hour hand and minute hand at 5.10 is

Options :

1. ✖ 80°

2. ✖ 85°

3. ✔ 95^{o}

4. ✖ 90^{o}

Question Number : 144 Question Id : 1592074557 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 times in a day are the hands of a clock in straight line but opposite in direction?

Options :

1. ✔ 22

2. ✖ 26

3. ✖ 32

4. ✖ 28

Question Number : 145 Question Id : 1592074558 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 is the father of B, C and D is the husband of C, then A is related to D as

Options :

1. ✖ Mother

2. ✖ Mother in law

3. ✔ Father in law

4. ✖ Father

Question Number : 146 Question Id : 1592074559 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

Ramu reached the venue of his office board meeting at 9.15 AM. He found that he was 23 minutes earlier than the Chairman who came 8 minutes late. The meeting was scheduled at

Options :

1. ✖ 9.38 AM

2. ✔

9.30 AM

9.50 AM

3. ✖

9.58 AM

4. ✖

Question Number : 147 Question Id : 1592074560 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

5 Friends namely A, B, C, D, E are sitting in a row but not in the same order. D is not the neighbour of either A or E. E is not at the center. B sits at one end and third to the right of E. Then who sits exactly in the middle of the row?

Options :

D

1. ✖

B

2. ✖

A

3. ✖

C

4. ✔

Question Number : 148 Question Id : 1592074561 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 4's that are preceded by 8 but not followed by 6 in the following sequence of digits is 215 84326 84723 486123846

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 4

4. ✖ 5

Question Number : 149 Question Id : 1592074562 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 $4 \Delta 5 = 41$ and $6 \Delta 7 = 85$, then $5 \Delta 6 =$

Options :

1. ✖

41

59

2. ✖

61

3. ✔

73

4. ✖

Question Number : 150 Question Id : 1592074563 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 $a * b = a - b + ab$ for $a, b \in \mathbb{Z}$, then the value of K satisfying $(3 * 4) * K = 21$ is

Options :

1

1. ✔

9

2. ✖

–2

3. ✖

11

4. ✖

Communicative English

Section Id :	15920789
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 :	159207108
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 151 Question Id : 1592074564 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:

"Without proper sleep, susceptibility to our various health problems increases"

Options :

1. Vulnerability ✔

2. Resistance ✖

3. Inclination ✖

4. Provocation ✖

Question Number : 152 Question Id : 1592074565 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:

"Microsoft built a capacious hall in the office to hold its weekly meetings"

Options :

1. Congested ✖

2. Atrocious ✖

Declining

3. ✖

Expansive

4. ✔

Question Number : 153 Question Id : 1592074566 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 antonym of the underlined word in the sentence from the alternatives given below:

"Simplicity and modesty are very rare and royal human virtues"

Options :

Habits

1. ✖

Vices

2. ✔

Senses

3. ✖

Interests

4. ✖

Question Number : 154 Question Id : 1592074567 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 from the alternatives given below:

"The suggestion of the advisor that it will be tough to win the election nettled the politician"

Options :

1. Provoked ✖

2. Annoyed ✖

3. Comforted ✔

4. Vexed ✖

Question Number : 155 Question Id : 1592074568 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. ✖ Vaccum

2. ✔ Vacuum

3. ✖ Vaccuum

4. ✖ Vaccume

Question Number : 156 Question Id : 1592074569 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. ✖ Priviledge

2. ✖ Previlege

Privilege

3. ✔

Privillege

4. ✖

Question Number : 157 Question Id : 1592074570 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 one who walks in the sleep"

Options :

Somnambulist

1. ✔

Somniloquist

2. ✖

Insomniac

3. ✖

Somnolent

4. ✖

Question Number : 158 Question Id : 1592074571 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:

"One who is all powerful"

Options :

1. ✖ Omniscient

2. ✖ Omnipresent

3. ✖ Ubiquitous

4. ✔ Omnipotent

Question Number : 159 Question Id : 1592074572 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:

"A person who eats flesh"

Options :

Carnivore

1. ✔

Herbivore

2. ✖

Omnivore

3. ✖

Vegan

4. ✖

Question Number : 160 Question Id : 1592074573 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:
"Everyone trusts Radhika because her statements are_____."

Options :

Voracious

1. ✖

Veracious

2. ✔

Verbose

3. ✖

Verbatim

4. ✖

Question Number : 161 Question Id : 1592074574 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:
"Vinita could escape from the dangerous situation with _____ idea."

Options :

Ingenious

1. ✔

Ingenuous

2. ✖

Indigent

3. ✖

Indiscrete

4. ✖

Question Number : 162 Question Id : 1592074575 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:
"It was a truly _____ achievement for the team of RRR cinema to get an Oscar Award."

Options :

1. credible ✖

2. creditable ✔

3. credulous ✖

4. credulent ✖

Question Number : 163 Question Id : 1592074576 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 "bird's eye view"?

Options :

1. A general view ✔

A view of a bird

2. ✖

The way of a bird

3. ✖

The flying of a bird

4. ✖

Question Number : 164 Question Id : 1592074577 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 “at sixes and sevens”?

Options :

In a disorderly condition

1. ✔

Keeping things in order

2. ✖

Remembering the numbers

3. ✖

Be in a stationary condition

4. ✖

Question Number : 165 Question Id : 1592074578 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 "spill the beans"?

Options :

To throw the things

1. ✖

To be very careless

2. ✖

To be clumsy

3. ✖

To reveal a secret information

4. ✔

Question Number : 166 Question Id : 1592074579 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 appropriate phrasal verb from the options given below:
"The Chief Guest _____ the prizes yesterday/in the college day function"

Options :

1. ✖ gave up

2. ✖ gave way

3. ✔ gave away

4. ✖ gave over

Question Number : 167 Question Id : 1592074580 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 appropriate phrasal verb from the options given below:
"The management requested the employees to _____ their strike."

Options :

1. ✖ call up

2. ✔ call off

call on

3. ✖

call at

4. ✖

Question Number : 168 Question Id : 1592074581 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 “break into”?

Options :

Come to an end

1. ✖

Spread suddenly

2. ✖

Stop suddenly

3. ✖

Enter by force

4. ✔

Question Number : 169 Question Id : 1592074582 Question Type : MCQ Optio

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 suitable articles from the options given below:
"_____ Amazon is _____longest river in the world."

Options :

The, a

1. ✖

The, the

2. ✔

An, a

3. ✖

A, the

4. ✖

Question Number : 170 Question Id : 1592074583 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 suitable articles from the options given below:
"There was _____ ulcer on _____ face of the prisoner."

Options :

a, a

1. ✖

the, an

2. ✖

an, the

3. ✔

the, no article

4. ✖

Question Number : 171 Question Id : 1592074584 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:
"_____ one eyed beggar was crying for food."

Options :

A

1. ✔

An

2. ✖

The

3. ✖

No article

4. ✖

Question Number : 172 Question Id : 1592074585 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 options given below:
"_____ being fined, the culprit was sentenced."

Options :

Beside

1. ✖

Besides

2. ✔

Apart

3. ✖

Behind

4. ✖

Question Number : 173 Question Id : 1592074586 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 options given below:
"Distribute the sweets _____ the four children."

Options :

1. between ✖

2. around ✖

3. among ✔

4. up on ✖

Question Number : 174 Question Id : 1592074587 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 suitable prepositions from the options given below:
"The student apologized ____ the teacher _____ his mistake."

Options :

1. over, for ✖

2. to, for ✔

3. ✖ with, on

4. ✖ to, over

Question Number : 175 Question Id : 1592074588 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:
"I am a teacher, _____?"

Options :

1. ✖ isn't it

2. ✖ am I

3. ✔ aren't I

4. ✖ am I not

Question Number : 176 Question Id : 1592074589 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: 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 students won the prize, _____?"

Options :

1. ✖ did they

2. ✔ didn't they

3. ✖ don't they

4. ✖ do they

Question Number : 177 Question Id : 1592074590 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:
"They have opened a shop"

Options :

1. ✔ A shop has been opened by them.

2.

A shop they have opened.

✖

A shop have been opened by them.

3. ✖

A shop was opened by them.

4. ✖

Question Number : 178 Question Id : 1592074591 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:
"Ramu must complete the work"

Options :

The work has to be completed by Ramu.

1. ✖

The work will be completed by Ramu.

2. ✖

The work must be completed by Ramu.

3. ✔

4. ✖

The work will have to be completed by Ramu.

Question Number : 179 Question Id : 1592074592 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 options is the correct passive voice form of the sentence?

Attempt all the questions.

Options :

1. ✖ May all questions be attempted.

2. ✖ All questions are compulsory.

3. ✖ All questions are attempted.

4. ✔ Let all the questions be attempted.

Question Number : 180 Question Id : 1592074593 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 options is the correct verb form to make the sentence grammatically correct?

Many students ..... answering the paper before the bell rang.

Options :

1. had finished ✔

2. haven't finished ✖

3. finished ✖

4. will have finished ✖

Question Number : 181 Question Id : 1592074594 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 options is the correct verb form to make the sentence grammatically correct?

How many of you ..... the easier questions first?

Options :

1. answers ✖

answering

2. ✖

have answer

3. ✖

answer

4. ✔

Question Number : 182 Question Id : 1592074595 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 options is the correct verb form to make the sentence grammatically correct?

If you answer all the questions correctly, you ..... a seat in whatever course you want.

Options :

would have got

1. ✖

will get

2. ✔

got

3. ✖

will have got

4. ✖

Question Number : 183 Question Id : 1592074596 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 indicating grammatically accurate subject-verb agreement:

Options :

Each of the girls are carrying a backpack.

1. ✖

Each of the girls is carrying a backpack.

2. ✔

Each of the girl is carrying a backpack.

3. ✖

Each of the girls is carried a backpack.

4. ✖

Question Number : 184 Question Id : 1592074597 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 indicating grammatically accurate subject-verb agreement:

Options :

1. ✖ Neither the teacher nor the students is happy with the results.

2. ✖ Neither the teacher nor the student are happy with the results.

3. ✖ Neither the teachers nor the student are happy with the results.

4. ✔ Neither the teacher nor the students are happy with the results.

Question Number : 185 Question Id : 1592074598 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 indicating grammatically accurate subject-verb agreement:

Options :

1. ✖ One of my favorite songs are "naatu, naatu".

One of my favorite songs is "naatu, naatu".

2. ✔

One of my favorite song is "naatu, naatu".

3. ✖

One of my favorite song are "naatu, naatu".

4. ✖

Question Number : 186 Question Id : 1592074599 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 the grammatically correct sentence from the options given:

Options :

The daughter does whatever her mother was done.

1. ✖

The daughter does whatever her mother does.

2. ✔

The daughter does whatever her mother has done.

3. ✖

The daughter does whatever her mother did.

4. ✖

Question Number : 187 Question Id : 1592074600 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 the part in the following sentence that has a grammatical error:

The company plans to (A) expand it's (B) business overseas (C) and to increase its profits (D).

Options :

A

1. ✖

B

2. ✔

C

3. ✖

D

4. ✖

Question Number : 188 Question Id : 1592074601 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 the grammatically correct sentence from the options given:

Options :

I enjoy reading books, watching movies, and to play video games.

1. ✖

I enjoy to read books, watch movies, and to play video games.

2. ✖

I am enjoying read books, watch movies, and play video games.

3. ✖

I enjoy reading books, watching movies, and playing video games.

4. ✔

Question Number : 189 Question Id : 1592074602 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 the grammatically correct sentence from the options given:

Options :

After eating dinner, the movie started.

1. ✖

2. ✔

After we ate dinner, the movie started.

Once after we ate dinner, the movie started.

3. ✖

After we were eating dinner, the movie started.

4. ✖

Question Number : 190 Question Id : 1592074603 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 the grammatically correct sentence from the options given:

Options :

I cannot go to the party because I have an examination tomorrow.

1. ✔

I cannot go to the party because I had an examination yesterday.

2. ✖

I cannot go to the party owing to I have an examination tomorrow.

3. ✖

4. ✖

I could not go to the party because tomorrow I will be having an examination.

Sub-Section Number : 2

Sub-Section Id : 159207109

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 1592074604 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix 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 191-195 that follow:

India's infrastructure is creaking, its health-care system even more so. Poverty and inequality remain omnipresent, and now the economy is struggling. But there are three issues that, if dealt with, could bring about big improvements. The environment is one. Twelve of the world's 15 most polluted cities are in India, and the country ranks 120th of 122 on the global index of water quality. A second is education. As more people move to cities for the first time, it is crucial that they are trained to find jobs in India's 21st century economy. A third issue is administration. With its basic structures unchanged since the British Raj, India's government is undermanned, unevenly deployed and badly equipped to cope with.

Take the environment first. A visitor from the past would scarcely recognize the plains of Punjab and Haryana in northern India. Vast irrigation works, mechanized farming and hybrid seeds have greened the horizons, turning once-hungry India into a big exporter of grain. But now a visitor may not even be able to see the plains. Every year farmers setting fire to rice stubble create a dense seasonal smog. This mixes with diesel exhaust, smoke from coal-fired power stations and other noxious gases to form a toxic cocktail engulfing the whole north Indian plain from Lahore in Pakistan to Dhaka in Bangladesh, where some 800 million people live. The bad air may cause as many as 1.2 million premature deaths a year, and shave four years off the average lifespan.

Sub questions

Question Number : 191 Question Id : 1592074605 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Calculator : Non

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to the passage, the grouse that India's basic structure have remained unchanged since the British Raj can imply that

Options :

1. ✔ Adequate resources have not been channeled into updating or the resources have been directed elsewhere.

2. ✖ The population of the country has overwhelmed its structure.

3. ✖ The government has not authorized updating the structures

4. ✖ The government has no time to update the country's basic structures.

Question Number : 192 Question Id : 1592074606 Question Type : MCQ Option Shuffling : No 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

As more and more people move to cities, what are the twin responsibilities of government?

Options :

1. ✖ They should be provided potable water.

2. ✖ They should be provided with access to public transport.

3. ✖ They should be provided housing and healthcare.

They should be provided job training and employment.

4. ✔

Question Number : 193 Question Id : 1592074607 Question Type : MCQ Option Shuffling : No 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 in which the author suggests the three issues that the government "could bring about big improvements" is

Options :

Environment, education and administration.

1. ✔

Administration, education and environment.

2. ✖

Education, environment and administration.

3. ✖

Education, administration and environment.

4. ✖

Question Number : 194 Question Id : 1592074608 Question Type : MCQ Option Shuffling : No 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 word closest in meaning to 'omnipresent' is

Options :

1. ✖ Deficient

2. ✔ Pervasive

3. ✖ Absent

4. ✖ Lacking

Question Number : 195 Question Id : 1592074609 Question Type : MCQ Option Shuffling : No 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 antonym of the word “Noxious” in the passage is

Options :

1. ✖ Poisonous

2. ✖ Toxic

3. ✖ Deadly

Harmless

4. ✔

Sub-Section Number : 3

Sub-Section Id : 159207110

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 1592074610 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix 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 196-200 that follow:

The U.S. economy is finally getting stronger, but there seems to be one unsettling weakness: the apparent wholesale flight of technology jobs like computer programming and technical support to lower-cost nations, led by India. The trend is typically described in ungainly terms – as "offshore outsourcing" or "offshoring". But the theoretical hurdle has done nothing to lessen the recent public debate and expressions of angst over this kind of job migration. There are some early signs of political reaction. Last month, for example, the State of Indiana pulled out of a $15 million contract with an Indian company to provide technology services. And a proposed bill in New Jersey would restrict the use of offshore workers by companies doing work for the State.

Forrester Research, a technology consulting firm, published a report this month pointing out that the movement abroad is only gradual. It bemoaned "the rising tide of offshore-hype". Yet Forrester itself played a significant role in framing the debate, as well as stirring fears, with a report last year. It predicted that 3.3 million services jobs in America would move offshore by 2015, and that the information technology industry would "lead the initial overseas exodus".

Sub questions

Question Number : 196 Question Id : 1592074611 Question Type : MCQ Option Shuffling : No 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 passage focusses on:

Options :

1. ✖ Information technology

2. ✔ The fear of outsourcing in the U.S.

3. ✖ The strengths of the U.S. economy

4. ✖ The weaknesses of the U.S. economy

Question Number : 197 Question Id : 1592074612 Question Type : MCQ Option Shuffling : No 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 statements is untrue in relation to Forrester Research?

Options :

1. ✖ The research firm has observed that the movement of jobs to foreign shores is slowly picking up.

2. ✖ The firm has opined that jobs in the information technology industry would be the first to leave America.

3. ✔ Forrester Research has played a role in removing people's fears over outsourcing of jobs.

4. ✖ The research institute has prophesied that 3.3 million jobs will move off-shore by 2015.

Question Number : 198 Question Id : 1592074613 Question Type : MCQ Option Shuffling : No 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 connection is the word “trend” used in the passage?

Options :

1. ✖ The strong U.S. economy.

2. ✖ Technical support.

3. ✖ Computer programming.

4. ✔ Job migration from the U.S.

Question Number : 199 Question Id : 1592074614 Question Type : MCQ Option Shuffling : No 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 “migration” is

Options :

1. ✖ Migratory

2. ✔ Migrate

3. ✖ Immigrate

4. ✖ Emigrate

Question Number : 200 Question Id : 1592074615 Question Type : MCQ Option Shuffling : No 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 “apparent” in the passage is

Options :

1. ✖ Opaque

2. ✖ Vague

3. ✔ Evident

4. ✖ Indifferent