Andhra Pradesh State Council of 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 08th May 2024 Shift 1
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	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
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	210688147
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 2106887405 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the differential equation of all circles passing through origin and having their centers on the x-axis?

Options :

1. ✖ $2y' = x^2 - y^2$

2. ✔ $2xyy' = y^2 - x^2$

3. ✖

$2xy' = y^2$

4. ✖ $xy' = x^2 - y^2$

Question Number : 2 Question Id : 2106887406 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The integrating factor of $\frac{dy}{dx} + y\cos x = \frac{1}{2}\sin 2x$ is

Options :

1. ✖ $e^{\sin^2 x}$

2. ✖ $e^{\sin^3 x}$

3. ✔ $e^{\sin x}$

4. ✖ $\sin x$

Question Number : 3 Question Id : 2106887407 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Solution of $x\frac{dy}{dx} + \cot y = 0,\ y\left(\sqrt{2}\right) = \frac{\pi}{4}$ is

Options :

1. ✖ $x = \sqrt{2}\cos y$

2. ✔ $x = 2\cos y$

3. ✖ $y = \sqrt{2}\cos x$

4. ✖ $y = 2\cos x$

Question Number : 4 Question Id : 2106887408 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of the differential equation $3y\frac{dy}{dx} + 2x = 0$ represents a family of

Options :

1. ✖ Parabolas

2. ✖ Circles

3. ✖ Straight lines

4. ✔ Ellipses

Question Number : 5 Question Id : 2106887409 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of $x\,dy - y\,dx = xy^2 dx$ is

Options :

1. ✖ $xy^2 + 2x = 2cy$

2. ✖ $yx^2 + 2y = 2cx$

3. ✔ $yx^2 + 2x = 2cy$

4. ✖ $y^2x^2 + 2y = 2cx$

Question Number : 6 Question Id : 2106887410 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The singular solution of the equation $y = px - \log p$ is ____, where $p = \frac{dy}{dx}$.

Options :

1. ✖ $y = 1 - \log\left(\frac{1}{x}\right)$

2. ✖ $y = \log x - 2x$

3. ✖ $y = \log x + 2x$

4. ✔ $y = 1 - \log x$

Question Number : 7 Question Id : 2106887411 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The general solution of $y = px + \frac{a}{p}$, $p = \frac{dy}{dx}$ is

Options :

1. ✖ $y = cx + ac^2$

2. ✖ $xy = c^2x + c$

3. ✖ $x = c^2y + c$

4. ✔ $cy = c^2x + a$

Question Number : 8 Question Id : 2106887412 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of $y + px = x^4p^2$, $p = \frac{dy}{dx}$, is

Options :

1. ✖ $\frac{x}{y}=c^2x+c$

2. ✖ $xy=c^2y+c$

3. ✔ $xy=c^2x+c$

4. ✖ $\frac{y}{x}=c^2x+c$

Question Number : 9 Question Id : 2106887413 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The general solution of $4xp^2=(3x-a)^2$, $p=\frac{dy}{dx}$, is

Options :

1. ✔ $(y+c)^2=x(x-a)^2$

2. ✖ $(x-a)^3=y^2+c$

3. ✖ $(y+c)^2=(x-a)^2$

4. ✖ $(y-c)^2=(x+a)^2$

Question Number : 10 Question Id : 2106887414 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Solution of $y=2px+4yp^2$ is (where p= dy/dx)

Options :

1. ✖ $y=cx-4c^2$

2. ✔ $y^2=cx+4c^2$

3. ✖ $y^2=\frac{c}{x}-\frac{c^2}{4}$

4. ✖ $y=cx-c^2$

Question Number : 11 Question Id : 2106887415 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The P.I. of $\left(D^2-6D+9\right)y=\log 2,\ D\equiv\frac{d}{dx}$, is

Options :

1.

1. $\frac{1}{9}\log(\log 2)$ ✖

2. $\frac{1}{9}\log 2$ ✔

3. $\frac{1}{4}\log 2$ ✖

4. $\log(\log 2)$ ✖

Question Number : 12 Question Id : 2106887416 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of arbitrary constants involved in general solution of the differential equation

$\frac{d^5y}{dx^5}+4\frac{d^4y}{dx^4}=\sin 3x$ is _____.

Options :

1. 5 ✔

2. 4 ✖

3. 1 ✖

4. ✖ 3

Question Number : 13 Question Id : 2106887417 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The general solution of $\frac{d^2x}{dt^2}+4\frac{dx}{dt}+4x=0$ is

Options :

1. ✖ $x=c_1+c_2e^{-2t}$

2. ✖ $t=(c_1+c_2x)e^{2x}$

3. ✖ $t=(c_1+c_2x)e^{-2x}$

4. ✔ $x=(c_1+c_2t)e^{-2t}$

Question Number : 14 Question Id : 2106887418 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of $\frac{dx}{yz}=\frac{dy}{zx}=\frac{dz}{xy}$ is

Options :

1. ✖ $x^2+y^2=c_1,\ x^2-z^2=c_2$

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

3. ✔ $x^2 - y^2 = c_1,\ x^2 - z^2 = c_2$

4. ✖ $x - y = c_1,\ x - z = c_2$

Question Number : 15 Question Id : 2106887419 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The particular integral of $\frac{d^2y}{dx^2} + 4y = 8\cos 2x$ is

Options :

1. ✖ $c_1 \cos 2x + c_2 \sin 2x$

2. ✖ $2\sin 2x$

3. ✖ $2x\cos 2x$

4. ✔ $2x\sin 2x$

Question Number : 16 Question Id : 2106887420 Display Question Number : Yes Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of the equation $\frac{d^2y}{dx^2} = 3x - 2$ with boundary conditions $y(0) = 2$ and $y'(1) = -3$ is _____.

Options :

1. ✖ $y = \frac{x^3}{3} - \frac{x^2}{2} - 3x - 2$

2. ✖ $y = 3x^3 - \frac{x^2}{2} + 5x + \frac{3}{2}$

3. ✔ $y = \frac{x^3}{2} - x^2 - \frac{5x}{2} + 2$

4. ✖ $y = 3x^3 - \frac{x^2}{2} - 5x + 2$

Question Number : 17 Question Id : 2106887421 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is a differential equation whose auxiliary equation has roots $0, -1, -1$?

Options :

1. ✖ $\frac{d^3y}{dx^3} - 2 = 0$

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

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

4. ✖ $\frac{d^3y}{dx^3}+1=0$

Question Number : 18 Question Id : 2106887422 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is NOT **a solution** of the differential equation $\frac{d^2y}{dx^2}+y=1$?

Options :

1. ✖ $y=1$

2. ✖ $y=1+\cos x$

3. ✔ $y=2+\sin x+\cos x$

4. ✖ $y=1+\sin x$

Question Number : 19 Question Id : 2106887423 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\frac{1}{D+2}e^{-2x}\log x =$$

Options :

1. ✖ $e^{2x}(x\log x-1)$

2. ✔ $e^{-2x}(x\log x-x)$

3. ✖ $e^{2x}(x\log x-x)$

4. ✖ $e^{-2x}(x\log x-1)$

Question Number : 20 Question Id : 2106887424 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The complementary function of $\frac{d^2y}{dx^2}+p^2y=e^{px}$ is

Options :

1. ✖ $(c_1\cos px+c_2\sin px)e^{px}$

2. ✔ $c_1 \cos px + c_2 \sin px$

3. ✖ $(c_1 + c_2 x)e^{px}$

4. ✖ $c_1 e^{px} + c_2 e^{-px}$

Question Number : 21 Question Id : 2106887425 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The congruence $3x \equiv 5 (\mathrm{mod}\, 7)$ has

Options :

1. ✔ Unique solution

2. ✖ no solution

3. ✖ 7 solutions

4. ✖ infinitely many solutions

Question Number : 22 Question Id : 2106887426 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The algebraic structure $\left(\{0.1,2,3\},+_4,X_4\right)$ is

Options :

1. ✔ a ring

2. ✖ an integral domain

3. ✖ a field

4. ✖ a skew field

Question Number : 23 Question Id : 2106887427 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of subgroups of a group $\left(Z_{11},+_{11}\right)$ is

Options :

1. ✖ 0

2. ✔ 2

3. ✖ 10

4. ✖ 11

Question Number : 24 Question Id : 2106887428 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the non trivial subgroup of a multiplicative group $G=\{1,-1,i,-i\}$.

Options :

1. ✖ $\{1,i\}$

2. ✖ $\{1\}$

3. ✔ $\{1,-1\}$

4. ✖ $\{i,-i\}$

Question Number : 25 Question Id : 2106887429 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\phi: Z_{30} \to G$ where G is a group of order 5 then $\ker\phi =$

Options :

1. ✖ $\{e\}$

2. ✖ Z_5

3. ✔ $\langle 5 \rangle$

4. ✖ $5Z$

Question Number : 26 Question Id : 2106887430 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$f:(Z,+)\to(Z,+)$ is defined as $f(x)=x+2$ is

Options :

1. ✖ Homomorphism

2. ✖ Isomorphism

3. ✔ not a homomorphism

4. ✖ Automorphism

Question Number : 27 Question Id : 2106887431 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of left cosets of a subgroup $H=\{1,4\}$ of a group $G=\{1,2,3,4\}$ with respect to multiplication modulo 5 is ____.

Options :

1. ✖ 4

2. ✔ 2

3. ✖ 3

4. ✖ 1

Question Number : 28 Question Id : 2106887432 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A group contains two elements a and b such that $|a|=4$ and $|b|=2$ and $a^3b=ba$ then $|ab|=$

Options :

1. ✖ 8

2. ✖ 6

3. ✔ 2

4. ✖ 4

Question Number : 29 Question Id : 2106887433 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is a groupoid but not semi-group ?

Options :

1. ✖ $(R,+)$

2. ✖ $(Q,+)$

3. ✔ $(Z,-)$

4. ✖ $(N,+)$

Question Number : 30 Question Id : 2106887434 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If G is a cyclic group of order 125 then the number of generators of G is

Options :

1. ✔ 100

2. ✖ 75

3. ✖ 50

4. ✖ 25

Question Number : 31 Question Id : 2106887435 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $u = x^2 + y^2 + z^2$ and $\overline{A} = x\overline{i} + y\overline{j} + z\overline{k}$ then $\nabla \cdot \left(u\overline{A}\right) =$ _

Options :

1. ✖ 0

2. ✖ $3u$

3. ✖ $2u$

4. ✔ $5u$

Question Number : 32 Question Id : 2106887436 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\overline{F} = e^{x+y+z}\left(\overline{i} + \overline{j} + \overline{k}\right)$ then $\nabla \times \overline{F} =$

Options :

1. ✔ $\overline{0}$

2. ✖ $\overline{F}$

3. ✖ $\frac{\overline{F}}{3}$

4. ✖ $3\overline{F}$

Question Number : 33 Question Id : 2106887437 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The vector $\bar{r}\, r^n$ is solenoidal if $n =$ _____, where $\bar{r} = x\bar{i} + y\bar{j} + z\bar{k}$ and $r = |\bar{r}|$.

Options :

1. ✖ 3

2. ✖ 2

3. ✔ -3

4. ✖ -2

Question Number : 34 Question Id : 2106887438 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\bar{r} = x\bar{i} + y\bar{j} + z\bar{k}$, and $r = |\bar{r}|$ then which of the following is NOT TRUE?

Options :

1. ✖ $\nabla^2\left(\frac{1}{r}\right) = 0$

2. ✖ $\nabla^2(\log r) = \frac{1}{r^2}$

3. ✖ $\nabla^2\left(r^n\right) = n(n-1)r^{n-2}$

4. ✔ $\nabla^2\left(r^n\right) = n(n+1)r^{n-2}$

Question Number : 35 Question Id : 2106887439 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A fluid element has a velocity $\bar{V} = -xy^2\bar{i} + 2x^2y\bar{j}$. The motion at $\left(\frac{1}{\sqrt{2}}, 1\right)$ is

Options :

1. ✖ rotational and compressible

2. ✔

rotational and incompressible

3. ✖ irrotational and compressible

4. ✖ irrotational and incompressible

Question Number : 36 Question Id : 2106887440 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum value of the directional derivative of the function $\phi = 3x^2 + 3y^2 + 6z^2$ at $(0,1,-1)$ is

Options :

1. ✖ $2\sqrt{5}$

2. ✖ $5\sqrt{2}$

3. ✔ $6\sqrt{5}$

4. ✖ $-5\sqrt{2}$

Question Number : 37 Question Id : 2106887441 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\overline{r} = x\overline{i} + y\overline{j} + z\overline{k}$, and $r = |\overline{r}|$ then $\nabla(\log r) =$

Options :

1. ✖ $\frac{1}{r}\overline{r}$

2. ✔ $\frac{\overline{r}}{r^2}$

3. ✖ $\frac{1}{r}$

4. ✖ $\frac{1}{\overline{r}}$

Question Number : 38 Question Id : 2106887442 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If V_1 and V_2 be two vectors joining the fixed points (x_1, y_1, z_1) and (x_2, y_2, z_2) respectively to a variable point (x, y, z) then $\nabla(V_1 \cdot V_2) =$ _____.

Options :

1. ✖ 0

2. ✖ $V_1 - V_2$

3. ✔

$V_1 + V_2$

4. ✖ $2(V_1 - V_2)$

Question Number : 39 Question Id : 2106887443 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The unit normal to the surface $\phi = x^2y + 2xz = 4$ at $(2,-2,3)$ is

Options :

1. ✖ $\frac{1}{3}\left(-\bar{i} + 2\bar{j} + 3\bar{k}\right)$

2. ✔ $\frac{1}{3}\left(-\bar{i} + 2\bar{j} + 2\bar{k}\right)$

3. ✖ $3\left(-\bar{i} + 2\bar{j} + 2\bar{k}\right)$

4. ✖ $\frac{1}{6}\left(-\bar{i} + 2\bar{j} + 2\bar{k}\right)$

Question Number : 40 Question Id : 2106887444 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The angle of intersection of the spheres $x^2+y^2+z^2=29$ and $x^2+y^2+z^2+4x-6y-8z-47=0$ at the point $(4,-3,2)$ is ____.

Options :

1. ✖ $\cos\theta=\sqrt{\frac{19}{304}}$

2. ✖ $\cos\theta=\sqrt{\frac{152}{116}}$

3. ✔ $\cos\theta=\sqrt{\frac{19}{29}}$

4. ✖ $\cos\theta=\sqrt{\frac{152}{304}}$

Question Number : 41 Question Id : 2106887445 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The work done by the force $\overline{F}=yz\bar{i}+zx\bar{j}+xy\bar{k}$, in moving a particle from the point $(1,1,1)$ to the point $(3,3,2)$ along a path C is_____.

Options :

1. ✖ 0

2. ✖ 10

3. ✖ 11

4. ✔ 17

Question Number : 42 Question Id : 2106887446 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If S is any closed surface then $\int_S \left(\nabla \times \overline{F}\right) \cdot dS =$

Options :

1. ✖ $-\overline{F}$

2. ✖ $\overline{0}$

3. ✔ 0

4. ✖ $\overline{F}$

Question Number : 43 Question Id : 2106887447 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is TRUE?

Options :

1. ✔ The circulation along every closed surface is Zero

2. ✖ Every rotational field is conservative

3. ✖ Stoke's theorem states the relation between volume integral and surface integral

4. ✖ The flux across every closed surface is non-zero

Question Number : 44 Question Id : 2106887448 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\bar{F} = x\bar{i} + 2y\bar{j} + 3z\bar{k}$ and S is any closed surface enclosing a volume V then $\iint_S curl\bar{F} \cdot \bar{n}\, ds$ is

Options :

1. ✖ V

2. ✖ 2V

3. ✖ 3V

4. ✔ 6V

Question Number : 45 Question Id : 2106887449 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If C is the circle $x^2+y^2=4$ then $\int_C (3x+4y)dx+(2x-3y)dy=$.

Options :

1. ✖ 8π

2. ✔ -8π

3. ✖ 4π

4. ✖ -4π

Question Number : 46 Question Id : 2106887450 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The value of $\int grad(x+y-z)d\bar{R}$ from $(0,1,-1)$ to $(1,2,0)$ is

Options :

1. ✖ 0

2. ✔ 3

3. ✖ -1

4. ✖ 1

Question Number : 47 Question Id : 2106887451 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\overline{F}$ is a velocity of a fluid (flowing across S in the direction of $\bar{n}$) then the flux of $\overline{F}$ across S in the direction of $\bar{n}$ is ____.

Options :

1. ✖ $\int_S \overline{F} \times \bar{n}\, ds$

2. ✖ $\int_S \left(\nabla \times \overline{F}\right) dv$

3. ✔ $\int_S \overline{F} \cdot \bar{n}\, ds$

4. ✖ $\int_S \left(\nabla \cdot \overline{F}\right) \cdot \bar{n}\, ds$

Question Number : 48 Question Id : 2106887452 Display Question Number : Yes Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\overline{N}$ is the unit outward drawn normal to any closed surface S then $\int_V (\nabla \cdot \overline{N})\, dV =$

Options :

1. ✔ S

2. ✖ $2S$

3. ✖ $3S$

4. ✖ 0

Question Number : 49 Question Id : 2106887453 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The line integral $\int \overline{V} \cdot d\overline{R}$, where $\overline{V} = 2x\bar{i} + x^2\bar{j}$ along the x-axis from $x = 1$ to $x = 2$, is

Options :

1. ✖ 0

2. ✔ 3

3. ✖

$\frac{4}{3}$

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

Question Number : 50 Question Id : 2106887454 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The divergence theorem states that

Options :

1. $\int_S \overline{F} \cdot d\overline{S} = \int_V \nabla \cdot \overline{F}\, dV$

2. $\int_S \overline{F} \cdot d\overline{S} = \int_V \nabla \times \overline{F}\, dV$

3. $\int_S \overline{F} \times d\overline{S} = \int_V \nabla \cdot \overline{F}\, dV$

4. $\int_S \overline{F} \times d\overline{S} = \int_V \nabla \times \overline{F}\, dV$

Question Number : 51 Question Id : 2106887455 Display Question Number : Yes Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the direction ratios of two lines are given by $a+b+c=0$ and $2ab+2ac-bc=0$,

then the angle between the lines is _____.

Options :

1. ✖ π

2. ✔ $\frac{\pi}{3}$

3. ✖ $\frac{\pi}{2}$

4. ✖ $\frac{\pi}{6}$

Question Number : 52 Question Id : 2106887456 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the line joining the points $(2,3,4)$, $(0,1,2)$ is perpendicular to the line joining the points

$(x,0,4)$, $(7,-4,3)$ then $x=$ _____.

Options :

1. ✖ 3

2. ✔ 2

3. ✖ 4

4. ✖ 1

Question Number : 53 Question Id : 2106887457 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of the plane passing through the point $(2,-3,5)$ and parallel to ZX-plane is

Options :

1. ✔ $y+3=0$

2. ✖ $z-7=0$

3. ✖ $x-2=0$

4. ✖ $x+2=0$

Question Number : 54 Question Id : 2106887458 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The plane XoZ divides the line joining of $(1,-1,5)$ and $(2,3,4)$ in the ratio $\lambda:-1$, Then $\lambda=$

Options :

1. ✖ -3

2. ✖ 3

3. ✖ $\frac{-1}{2}$

4. ✔ $\frac{1}{3}$

Question Number : 55 Question Id : 2106887459 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the equation of the plane and is parallel to Y- axis, making intercepts of lengths 3 and 4 on X- axis and Z- axis is _____.

Options :

1. ✖ $2x+2z=20$

2. ✖ $4x-3z=12$

3. ✔ $4x+3z=12$

4. ✖ $6x+13z=15$

Question Number : 56 Question Id : 2106887460 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The spheres of radii r_1 and r_2 cut orthogonally then the radius of the common circle is

Options :

1. ✖ $\frac{2r_1r_2}{r_1+r_2}$

2. ✖ $\frac{r_1^2+r_2^2}{2r_1r_2}$

3. ✔ $\frac{r_1r_2}{\sqrt{r_1^2+r_2^2}}$

4. ✖ $\frac{\sqrt{r_1^2+r_2^2}}{r_1r_2}$

Question Number : 57 Question Id : 2106887461 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The length of the tangent from $(3,1,-1)$ to the sphere $x^2+y^2+z^2-3x+5y+7=0$ is

Options :

1. ✖ 12

2. ✖ 3

3. ✔ $\sqrt{14}$

4. ✖ 2

Question Number : 58 Question Id : 2106887462 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The plane $2x+y-z=12$ touches the sphere $x^2+y^2+z^2=24$ at the point

Options :

1. ✖ $(2,2,-2)$

2. ✔ $(4,2,-2)$

3. ✖ $(-4,2,2)$

4. ✖ $(2,-2,2)$

Question Number : 59 Question Id : 2106887463 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $(2,3,5)$ is one end of diameter of the sphere $x^2+y^2+z^2-6x-12y-2z+20=0$ then the other end of diameter is ____.

Options :

1. ✖ $(4,3,5)$

2. ✔ $(4,9,-3)$

3. ✖ $(4,3,-3)$

4. ✖ $(4,-3,5)$

Question Number : 60 Question Id : 2106887464 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The image of the point $(3,2,-1)$ in the $yz-plane$ is

Options :

1. ✔ $(-3,2,-1)$

2. ✖ $(-3,-2,1)$

3. ✖ $(-3,-2,-1)$

4. ✖

$(3,-2,1)$

Question Number : 61 Question Id : 2106887465 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Let $S=\left\{1,\frac{1}{2},\frac{1}{3},\frac{1}{4},\cdots\right\}$. Then which of the following is correct?

Options :

1. ✖ S is an open but not closed

2. ✖ S is closed but not open

3. ✖ S is both closed and open

4. ✔ S is neither open nor closed

Question Number : 62 Question Id : 2106887466 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For the given sequence $\left\langle (-1)^n\left(1+\frac{1}{n}\right)\right\rangle$, which of the following is CORRECT?

Options :

1. ✖ Limit superior = Limit inferior

2. ✖ Limit superior = 1 and Limit inferior = –1

3. ✔ Limit superior = 1 and Limit inferior = 0

4. ✖ Neither limit superior nor limit inferior exists.

Question Number : 63 Question Id : 2106887467 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a positive series $\sum u_n$, if $\underset{n\to\infty}{Lt}\,(u_n)^{1/n} = \lambda$, then the series diverges for

Options :

1. ✔ $\lambda > 1$

2. ✖ $\lambda < 1$

3. ✖ $\lambda = 1$

4. ✖ any λ

Question Number : 64 Question Id : 2106887468 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

$$\lim_{x\to 0} \frac{e^{1/x}-1}{1+e^{1/x}} = .$$

Options :

1. ✖ 0

2. ✖ 1

3. ✖ ∞

4. ✔ does not exist

Question Number : 65 Question Id : 2106887469 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a function f is continuous in an interval $[a,b]$ and $f(a) \neq f(b)$, then f assumes every value between

Options :

1. ✖ $f(a)$ and 0

2. ✖ 0 and $f(b)$

3. ✔ $f(a)$ and $f(b)$

4. ✖ $-\infty$ and $+\infty$

Question Number : 66 Question Id : 2106887470 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The points at which $f(x)=[x]$ is discontinuous are___, (here $[x]$ is the greatest integer less than or equal to x)

Options :

1. ✖ set of all rational numbers

2. ✖ set of all irrational numbers

3. ✔ set of all integers

4. ✖ set of all prime numbers

Question Number : 67 Question Id : 2106887471 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Let f be defined in $\mathbb{R}$ by setting $f(x) = |x-1| + |x| + |x+1|, \forall x \in \mathbb{R}$. Then which of the following statements is TRUE ?

Options :

1. ✖ f is not continuous at $x=-1$

2. ✖ f is derivable at $x=-1$

3. ✖ f is continuous and derivable at $x=-1$

4. ✔ f is continuous but not derivable at $x=-1$

Question Number : 68 Question Id : 2106887472 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(x+y)=f(x)f(y)$ for all x and y. Suppose that $f(3)=3$ and $f'(0)=11$. Then $f'(3)$ is equal to

Options :

1. ✖ 22

2. ✔ 33

3. ✖ 28

4. ✖ 0

Question Number : 69 Question Id : 2106887473 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The function f is defined by $f(x)=\begin{cases} x^2+3x+a, & \text{if } x\le 1 \\ bx+2, & \text{if } x>1 \end{cases}$, is given to be derivable for every x. Then, the value of a is

Options :

1. ✔ 3

2. ✖ 5

3. ✖ -3

4. ✖ -5

Question Number : 70 Question Id : 2106887474 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The function $f(x)=\begin{cases} x\sin\left(\frac{1}{x}\right), & \text{if } x\neq 0 \\ 0, & \text{if } x=0 \end{cases}$ is

Options :

1. ✖ differentiable at $x=0$

2. ✔ not differentiable at $x=0$

3. ✖ differentiable at $x=1$

4. ✖ differentiable at $x=2$

Question Number : 71 Question Id : 2106887475 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(x)=x^2, \forall x \in [0,1]$ and $p=\left\{0,\frac{1}{4},\frac{2}{4},\frac{3}{4},1\right\}$ be a partition of $[0,1]$ then $U(p,f)=$

Options :

1. ✖ $\frac{3}{8}$

2. ✖ $\frac{5}{8}$

3. ✔ $\frac{15}{32}$

4. ✖ $\frac{7}{32}$

Question Number : 72 Question Id : 2106887476 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the function $f(x)$ is bounded and integrable on $[a,b]$ such that $f(x) \geq 0, \forall\, x \in [a,b]$,

where $b \geq a$, then $\int_a^b f(x)dx$ is _____.

Options :

1. ✖ ≤ 0

2. ✖ $= 0$

3. ✔ ≥ 0

4. ✖ $\neq 0$

Question Number : 73 Question Id : 2106887477 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a Riemann integrability, condition of continuity is

Options :

1. ✖ necessary

2. ✔ sufficient

3. ✖ not necessary

4. ✖ not sufficient

Question Number : 74 Question Id : 2106887478 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If f is monotonic in $[a,b]$, then f is

Options :

1. ✖ not bounded in $[a,b]$

2. ✖ not integrable in $[a,b]$

3. ✔ integrable in $[a,b]$

4. ✖ bounded in (a,b) only

Question Number : 75 Question Id : 2106887479 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\phi: F \to R$ is a ring homomorphism, where F is a field such that $\ker\phi = \{0\}$ then ϕ is a

Options :

1. ✖ Monomorphism

2. ✖ Automorphism

3. ✖ Zeromorphism

4. ✔ Isomorphism

Question Number : 76 Question Id : 2106887480 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Let $M=\left\{\begin{bmatrix} a & 0 \\ b & 0 \end{bmatrix} \middle/ a,b \in Z\right\}$ for the ring of $\mathbb{R}$ of 2×2 matrices over Z of integers then M is

Options :

1. ✖ ideal

2. ✔ left ideal

3. ✖ right ideal

4. ✖ subring

Question Number : 77 Question Id : 2106887481 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not an integral domain?

Options :

1. ✖ $Z[x]$

2. ✖ $R[x]$

3. ✖ $Z/6Z$

4. ✔ $Z(\sqrt{2})$

Question Number : 78 Question Id : 2106887482 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of zeros of x^2+3x+2 in Z_6 is

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 79 Question Id : 2106887483 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Let F is a field, $a \in F$ and $f(x) \in F[x]$. Then _____ is the remainder in the division of $f(x)$ by $(x-a)$.

Options :

1. ✔ $f(a)$

2. ✖ $f(x)\cdot(x-a)$

3. ✖ $f(x)$

4. ✖ $(x-a)$

Question Number : 80 Question Id : 2106887484 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The polynomial x^2+1 is reducible over which of the following fields?

Options :

1. ✖ Z_3

2. ✔ Z_5

3. ✖ R

4. ✖ Q

Question Number : 81 Question Id : 2106887485 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following set of vectors is linearly dependent set in $R^3(R)$.

Options :

1. ✖ $\{(1,0,1)(0,1,1)(1,1,0)\}$

2. ✖ $\{(0,1,2)(0,0,1)\}$

3. ✔ $\{(0,0,1)(0,1,1)(0,0,0)\}$

4. ✖ $\{(-1,0,1)(2,-2,-1)(0,1,1)\}$

Question Number : 82 Question Id : 2106887486 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum number of linearly independent vectors in a vector space of dimension 7 is

Options :

1. ✖ 6

2. ✔ 7

3. ✖ 5

4. ✖ 8

Question Number : 83 Question Id : 2106887487 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $T:R^6 \to R^6$ is a linear transformation with nullity of T is 5 then the rank of T is

Options :

1. ✔ 1

2. ✖ 3

3. ✖ 5

4. ✖ 2

Question Number : 84 Question Id : 2106887488 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $W=\{(a,b,c,d)/a=d,b=2c,c=d\}$ is a subspace of R^4 then $\dim(W)=$

Options :

1. ✖ 4

2. ✖ 3

3. ✔ 1

4. ✖ 2

Question Number : 85 Question Id : 2106887489 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $T_1:R^3\to R^2$ and $T_2:R^2\to R^2$ be two Linear transformations defined as $T_1(x,y,z)=(3x,\ 4y-z)$ and $T_2(x,y)=(-x,y)$ then

Options :

1. ✖ T_2T_1 is not defined

2. ✖ $T_1T_2(x,y,z)=(3x,\ 4y-z,z)$

3. ✔ $T_2T_1(x,y,z)=(-3x,\ 4y-z)$

4. ✖ $T_2T_1(x,y,z)=(3x+4y,\ -z)$

Question Number : 86 Question Id : 2106887490 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider £ as a vector space over R. Let the linear map $T:£\to £$ is given by

$T(z)=iz, \forall z\in £$. The matrix of T with respect to the standard basis $B=\{1,\ i\}$ is

Options :

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

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

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

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

Question Number : 87 Question Id : 2106887491 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rank of the linear transformation $T:R^3\to R^3$ defined by $T(x,y,z)=(y,0,z)$ is

Options :

1. ✖ 3

2. ✖ 1

3. ✔ 2

4. ✖ 0

Question Number : 88 Question Id : 2106887492 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $T:U \to V$ be a linear transformation then $rank(T)+nullity(T)=$

Options :

1. ✔ $\dim U$

2. ✖ $\dim V$

3. ✖ $\dim(U+V)$

4. ✖ $\dim\left(\frac{U}{V}\right)$

Question Number : 89 Question Id : 2106887493 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The system of equations $2x+y+z=0$, $y-z=0$ and $x+y=0$ has

Options :

1. ✖ A unique solution

2. ✔ infinite number of solutions

3. ✖ No solution

4. ✖ Three solutions

Question Number : 90 Question Id : 2106887494 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution for the system of equations $x_1+3x_2+x_3=7$, $4x_1-2x_2+x_3=0$, $5x_1+4x_2+10x_3=13$ is

Options :

1. ✖ $x_1=0,\ x_2=1,\ x_3=2$

2. ✖ $x_1=2,\ x_2=1,\ x_3=1$

3. ✔ $x_1=1,\ x_2=2,\ x_3=0$

4. ✖ $x_1 = 1,\ x_2 = 0,\ x_3 = 2$

Question Number : 91 Question Id : 2106887495 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $A = \begin{bmatrix} 5a & -b \\ 3 & 2 \end{bmatrix}$ and $A \cdot adjA = A \cdot A^T$ then $5a + b =$

Options :

1. ✔ 5

2. ✖ 4

3. ✖ 13

4. ✖ -1

Question Number : 92 Question Id : 2106887496 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\begin{vmatrix} a & a^2 & a^3 - 1 \\ b & b^2 & b^3 - 1 \\ c & c^2 & c^3 - 1 \end{vmatrix} = 0$ and a, b, c are different then the value of $abc =$

Options :

1. ✖ 0

2. ✔ 1

3. ✖ $a+b+c$

4. ✖ $2(a+b+c)$

Question Number : 93 Question Id : 2106887497 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rank of the matrix $A=\begin{bmatrix}1 & 2 & 3\\ 2 & 3 & 4\\ 3 & 4 & 5\end{bmatrix}$ is

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 0

Question Number : 94 Question Id : 2106887498 Display Question Number : Yes Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The eigen values of skew symmetric matrix is

Options :

1. ✖ Always zero

2. ✖ Always real

3. ✖ Always pure imaginary

4. ✔ Either zero or purely imaginary

Question Number : 95 Question Id : 2106887499 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a matrix has Eigen values -1 and -2 and the corresponding eigen vectors are $\begin{bmatrix} 1 \\ -1 \end{bmatrix}, \begin{bmatrix} 1 \\ -2 \end{bmatrix}$ respectively, then the matrix is

Options :

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

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

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

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

Question Number : 96 Question Id : 2106887500 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The necessary condition to diagonalize a matrix is that

Options :

1. ✖ the matrix is non-singular

2. ✔ it's eigen vectors should be independent

3. ✖ it's eigen values should be real

4. ✖ it's all eigen values should be same

Question Number : 97 Question Id : 2106887501 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If α, β are orthogonal unit vectors then $\|\alpha - \beta\| =$.

Options :

1. ✖ 0

2. ✖ 1

3. ✖ 2

4. ✔ $\sqrt{2}$

Question Number : 98 Question Id : 2106887502 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If α, β are two vectors in an inner product space such that $|(\alpha, \beta)| = \|\alpha\| \|\beta\|$, then α, β are

Options :

1. ✖ Linearly independent

2. ✔ linearly dependent

3. ✖ orthogonal

4. ✖ orthonormal

Question Number : 99 Question Id : 2106887503 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A unit vector orthogonal to $(1,2)$ in R^2 is

Options :

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

2. ✔ $\left(\frac{2}{\sqrt{5}},\frac{-1}{\sqrt{5}}\right)$

3. ✖ $(1,0)$

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

Question Number : 100 Question Id : 2106887504 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is NOT TRUE?

Options :

1. ✖ Every finite dimensional vector space V is an inner product space.

2. ✖ Every orthonormal set of vectors is linearly independent.

Every finite dimensional vector space V with an inner product has an orthonormal basis.

3. ✖

4. ✔ An orthornormal set contains zero vector.

Analytical Ability

Section Id :	210688148
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	44
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 101 Question Id : 2106887505 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the average marks of 25 students?

I. The average marks of 24 of the them is 75

II. The marks obtained by one of them is 72

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✖ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✔ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 102 Question Id : 2106887506 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the volume of the cone?

I. The height of the cone is 10cm
II. The Radius of its base is 7 cm

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3.

Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

Both the statements I and II together are not sufficient to answer the question and additional data is required.

4. ✖

Question Number : 103 Question Id : 2106887507 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the area of the Trapezium?

I. Sum of its two parallel sides is 15 cm
II Perpendicular distance between two parallel sides is 5 cm

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✔ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖

Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 104 Question Id : 2106887508 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the sum of the real numbers a, b, c?

I. a+c = 12
II. a, b, c are in A.P

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✔ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 105 Question Id : 2106887509 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the slope of the straight line?

I. The straight line passes through the origin and the point (3,2)
II. The straight line passes through (6,5)

Options :

1. ✔ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✖ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 106 Question Id : 2106887510 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

Is the positive integer X odd?

I. ' 2X ' is even
II. X^2 is odd

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✔ Statement II alone is sufficient to answer the question.

3. ✖ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 107 Question Id : 2106887511 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the cost of painting a room which is of the form of a cube?

I. The base area of the room is 400 sq.ft
II. The room has one door of size 6' x 4' and has 3 windows of size 4'X3'

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

3. ✖

Both the statements I and II together are not sufficient to answer the question and additional data is required.

4. ✔

Question Number : 108 Question Id : 2106887512 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

Will it be a Tuesday tomorrow?

I. Coming Tuesday is holiday
II. It is not Monday today

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✔ Statement II alone is sufficient to answer the question.

Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

3. ✖

Both the statements I and II together are not sufficient to answer the question and additional data is required.

4. ✖

Question Number : 109 Question Id : 2106887513 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

What is the value of x?

I. $3x + 4y = 17$
II. $2x + y = 8$

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✔ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 110 Question Id : 2106887514 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Note: A question is followed by data in the form of two statements labeled as I and II. Using the data choose the correct option:

Number of students in a class?

I. Pass percentage of the class is 75% in an examination
II. Number of students passed in that examination is 45

Options :

1. ✖ Statement I alone is sufficient to answer the question.

2. ✖ Statement II alone is sufficient to answer the question.

3. ✔ Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.

4. ✖ Both the statements I and II together are not sufficient to answer the question and additional data is required.

Question Number : 111 Question Id : 2106887515 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing number in the sequence:
5, 5, 10, 30, _____ , 600

Options :

1. ✖ 96

2. ✔

120

3. ✖ 144

4. ✖ 216

Question Number : 112 Question Id : 2106887516 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing number in the sequence:
3, 15, 35, 63, _____, 143

Options :

1. ✖ 88

2. ✖ 68

3. ✖ 120

4. ✔ 99

Question Number : 113 Question Id : 2106887517 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing number in the sequence:
1, 2, 5, 16, _____, 326

Options :

1. ✖ 68

2. ✔ 65

3. ✖ 72

4. ✖ 75

Question Number : 114 Question Id : 2106887518 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing number in the sequence:
10, 68, 222, 520, _____

Options :

1. ✖ 990

2. ✔ 1010

3. ✖ 1000

4. ✖ 1008

Question Number : 115 Question Id : 2106887519 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing number in the sequence:
3, 4, 7, 11, 18, 29, _____

Options :

1. ✔ 47

2. ✖ 42

3. ✖ 37

4. ✖ 43

Question Number : 116 Question Id : 2106887520 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing in the blank:

2: 27:: 4:_____

Options :

1. ✖ 64

2. ✖ 81

3. ✖ 27

4. ✔ 125

Question Number : 117 Question Id : 2106887521 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing in the blank:

a: e:: i :_____

Options :

1. ✖ u

2. ✔ o

3. ✖ e

4. ✖ a

Question Number : 118 Question Id : 2106887522 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

What is the missing in the blank:

ABC: ZYX:: GHI: _____

Options :

1. ✖ RST

2. ✖ RQP

3. ✖ TUV

4. ✔ TSR

Question Number : 119 Question Id : 2106887523 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing in the blank:

ACE: GIK:: MOQ :_____

Options :

1. ✔ SUW

2. ✖ STU

3. ✖ RTV

4. ✖ PRT

Question Number : 120 Question Id : 2106887524 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the missing in the blank:

A4C: D25F:: G64I: _____

Options :

1. ✖ J100L

2. ✔ J121L

3. ✖ J121K

4. ✖ J100K

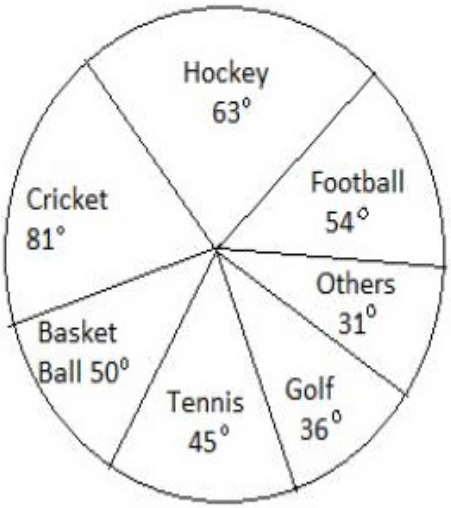
Is Section Default? : null

Question Id : 2106887525 Sub Question Shuffling Allowed : Yes 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 127)

Study the Pi-chart carefully and answer the questions from 121 to 127.

The Pi-chart gives the details of the spending of a country on various sports during a particular year.



Sub questions

Question Number : 121 Question Id : 2106887526 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What percent of the total spending is spent on Football?

Options :

1. ✔ 15%

2. ✖ 12.5%

3. ✖ 22.5%

4. ✖ 25%

Question Number : 122 Question Id : 2106887527 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How much percent more is spent on Cricket than on Tennis?

Options :

1. ✔ 80%

2. ✖ 75%

3. ✖ 35 %

4. ✖ 37.5%

Question Number : 123 Question Id : 2106887528 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

Options :

1. ✖ 22 ⅔ %

2. ✖ 27%

3. ✔ 33 ⅓ %

4. ✖ 37 ⅓ %

Question Number : 124 Question Id : 2106887529 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

. If the total amount spent on sports during the year was Rs.5 crores. the amount spent on Cricket and Hockey together was

Options :

1. ✖ Rs. 1.6 crores

2. ✔ Rs. 2 crores

3. ✖ Rs. 1.5 crores

4. ✖ Rs.1.2 crores

Question Number : 125 Question Id : 2106887530 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the amount spent on Golf in a particular year is Rs.10.00 Lakhs, then the amount spent on Tennis in that year is

Options :

1. ✖ Rs.10.0 Lakhs

2. ✔ Rs. 12.5 Lakhs

3. ✖ Rs. 15.0 Lakhs

4. ✖ Rs. 45.0 Lakhs

Question Number : 126 Question Id : 2106887531 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the amount spent on Hockey in a particular year is Rs.30.00 Lakhs, then how much more amount is spent on Cricket?

Options :

1. ✖ Rs.7.852 Lakhs

2. ✖ Rs. 6.754 Lakhs

3. ✔ Rs. 8.571 Lakhs

4. ✖ Rs. 5. 785 Lakhs

Question Number : 127 Question Id : 2106887532 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

What percentage of total amount is spent on Hockey ?

Options :

1. ✖ 12.3%

2. ✔ 17.5%

3. ✖ 25.5%

4. ✖ 18.5%

Is Section Default? : null

Question Number : 128 Question Id : 2106887533 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language, the r^{th} letter is coded as $(r+1)^{th}$ letter if r is odd and as $(r-1)^{th}$ letter if r is even. Then what is the code letter for T ?

Options :

1. ✔ S

2. ✖ U

3. ✖ V

4. ✖ R

Question Number : 129 Question Id : 2106887534 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language, the r^{th} letter is coded as $(r+1)^{th}$ letter if r is odd and as $(r-1)^{th}$ letter if r is even. Then which letter is coded as J ?

Options :

1. ✖ H

2. ✔ I

3. ✖ K

4. ✖ L

Question Number : 130 Question Id : 2106887535 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language, the r^{th} letter is coded as $(r+1)^{th}$ letter if r is odd and as $(r-1)^{th}$ letter if r is even. Then what is the code word for QUALITY ?

Options :

1. ✖ RVBKJUX

2. ✖ RVBKJUZ

3. ✔ RVBKJSZ

4. ✖ RVBKIUZ

Question Number : 131 Question Id : 2106887536 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language, the r^{th} letter is coded as $(r+1)^{th}$ letter if r is odd and as $(r-1)^{th}$ letter if r is even. Then which word is coded as CPNJMP ?

Options :

1. ✔ DOMINO

2. ✖ DOLINO

3. ✖ DOMAIN

4. ✖ DOLMEN

Question Number : 132 Question Id : 2106887537 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language TANK is written as SZOL and FRIEND is written as EQHFOE. Then the code for ZENITH is

Options :

1. ✔ YDMJUI

2. ✖ ADMJUI

3. ✖ YFMJUI

4. ✖ ADMJUG

Question Number : 133 Question Id : 2106887538 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language TANK is written as SZOL and FRIEND is written as EQHFOE.
Then the code for PIPE is

Options :

1. ✖ QJOD

2. ✖ OHOD

3. ✔ OHQF

4. ✖ QJQF

Question Number : 134 Question Id : 2106887539 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language TANK is written as SZOL and FRIEND is written as EQHFOE.
Then which word is coded as ECET

Options :

1. ✔ FDDS

2. ✖ FDFU

3. ✖ DBFU

4. ✖ FDEU

Question Number : 135 Question Id : 2106887540 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a code language TANK is written as SZOL and FRIEND is written as EQHFOE.
Then which word is coded as NUMBER

Options :

1. ✖ OVNBES

2. ✔ OVNADQ

3. ✖ OVOZEQ

4. ✖ OVOADQ

Question Number : 136 Question Id : 2106887541 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many integers from 1 to 100 exist such that each is divisible by 6 and also has 6 as a digit?

Options :

1. ✖ 4

2. ✔ 5

3. ✖ 6

4. ✖ 7

Question Number : 137 Question Id : 2106887542 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $a\Delta b = a^2-ab+b^2$ then $(a\Delta a)\Delta(a\Delta a) = ?$

Options :

1. ✖ a^2

2. ✖ a^3

3. ✔ a^4

4. ✖ a^8

Question Number : 138 Question Id : 2106887543 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The time in the clock is 3.00 PM. If the hours hand is pointing towards West, then the direction of the minutes hand is

Options :

1. ✖ North

2. ✔ South

3. ✖ South-West

4. ✖ East

Question Number : 139 Question Id : 2106887544 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a month in an year starts with Monday , then the date of the fourth day after the second Saturday in that month , will be

Options :

1. ✖ 15

2. ✔ 17

3. ✖ 18

4. ✖ 19

Question Number : 140 Question Id : 2106887545 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 9^{th} May of 2008 was Friday , then what day was February 14^{th} of the same year ?

Options :

1. ✔ Thursday

2. ✖ Monday

3. ✖ Friday

4. ✖ Wednesday

Question Number : 141 Question Id : 2106887546 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

. The ratio of the present ages of a father and his son is 2 : 1 . If the ratio 10 years ago is 5 : 2 , then the present age of the son is

Options :

1. ✔ 30

2. ✖ 25

3. ✖ 24

4. ✖ 32

Question Number : 142 Question Id : 2106887547 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

. In a row Ajith is 19^{th} from left and 15^{th} from right, then total number of persons in the row is

Options :

1. ✖ 32

2. ✖ 34

3. ✖ 31

4. ✔ 33

Question Number : 143 Question Id : 2106887548 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ravi drove 6 km towards East. He then turned right and drove 10 km. He again turned to his right and drove 6 km. He then turned to his left and drove 15 km. At what distance is he from the starting point and in which direction?

Options :

1. ✔ 25 km, South

2. ✖ 21 km, South

3. ✖ 15 km, South

4. ✖ 21 km, North

Question Number : 144 Question Id : 2106887549 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

. Pointing to a man, a woman said "His Mother is the only Daughter of My Mother". How is the woman related to man?

Options :

1. ✔ Mother

2. ✖ Grand Mother

3. ✖ Sister

4. ✖ Daughter

Question Number : 145 Question Id : 2106887550 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A dozen Mirrors are falling from certain height. Then the ratio of broken to unbroken mirrors may not be in the ratio

Options :

1. ✖ 5:1

2. ✖ 1:2

3. ✔ 3:4

4. ✖ 1:3

Question Number : 146 Question Id : 2106887551 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 2 @ 3 = 13 and 4 @ 5 = 41 then 6 @ 8 = ?

Options :

1. ✖ 98

2. ✖ 90

3. ✖ 120

4. ✔ 100

Question Number : 147 Question Id : 2106887552 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of two numbers is 3:5. If 15 is added to each number then the ratio becomes 3:4 then the numbers are

Options :

1. ✖ 12, 20

2. ✖ 9, 15

3. ✔ 15, 25

4. ✖ 21, 35

Question Number : 148 Question Id : 2106887553 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A group of six friends are sitting around a hexagonal table, each one at one corner of the hexagon. Ram is sitting opposite to Ramesh, Jyoti is sitting next to Seema, Neeta is sitting opposite to Seema, but not next to Ram, Amrit has a person sitting between Ramesh and himself. Neeta is sitting to the right of Amrit.

Who is sitting to the left of Amrit ?

Options :

1. ✖ Ramesh

2. ✖ Neeta

3. ✖ Amrit

4. ✔ Ram

Question Number : 149 Question Id : 2106887554 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A group of six friends are sitting around a hexagonal table, each one at one corner of the hexagon. Ram is sitting opposite to Ramesh, Jyoti is sitting next to Seema, Neeta is sitting opposite to Seema, but not next to Ram, Amrit has a person sitting between Ramesh and himself. Neeta is sitting to the right of Amrit.

Who is sitting between Amrit and Ramesh?

Options :

1. ✖ Ramesh

2. ✔ Neeta

3. ✖ Amrit

4. ✖ Ram

Question Number : 150 Question Id : 2106887555 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A group of six friends are sitting around a hexagonal table, each one at one corner of the hexagon. Ram is sitting opposite to Ramesh, Jyoti is sitting next to Seema, Neeta is sitting opposite to Seema, but not next to Ram, Amrit has a person sitting between Ramesh and himself. Neeta is sitting to the right of Amrit.

Who is sitting between Jyoti and Neeta?

Options :

1. ✔ Ramesh

2. ✖ Neeta

3. ✖ Amrit

4. ✖ Seema

Communicative English

Section Id : 210688149

Section Number :	3
Mandatory or Optional :	Mandatory
Number of Questions :	46
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 151 Question Id : 2106887556 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blanks with the correct article from the given options:

They sat under _____ eucalyptus tree.

Options :

1. ✖ No article needed

2. ✔ A

3. ✖ the

4. ✖ An

Question Number : 152 Question Id : 2106887557 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blanks with the correct article from the given options:

Ashoka was _____ greatest emperor that ruled India

Options :

1. ✖ A

2. ✖ An

3. ✔ the

4. ✖ No article is necessary.

Question Number : 153 Question Id : 2106887558 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Complete the sentence with right preposition from the options given below:

He stopped me _____ going there

Options :

1. ✖ On

2. ✔ from

3. ✖ of

4. ✖ upon

Question Number : 154 Question Id : 2106887559 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Complete the sentence with right preposition from the options given below:

She poured hot tea ____ the cup.

Options :

1. ✔ into

2. ✖ in

3. ✖ for

4. ✖ to

Question Number : 155 Question Id : 2106887560 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Use the correct form of the tense given in the options to fill in the blank.

It _____ (rain) since 8'o clock.

Options :

1. ✖ is raining

2. ✔ has been raining

3. ✖ had been raining

4. ✖ had rained

Question Number : 156 Question Id : 2106887561 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Use the correct form of the tense given in the options to fill in the blank.

Rama_____ (leave) the Party before they arrived.

Options :

1. ✖ leave

2. ✖ is left

3. ✔ had left

4. ✖ left

Question Number : 157 Question Id : 2106887562 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the right option to fill in the blank to convert the voice of the sentence from active into passive.

I have done my work.(AV) My work _____ by me.(PV)

Options :

1. ✖ Is done

2. ✖ was done

3. ✖ has done

4. ✔ has been done.

Question Number : 158 Question Id : 2106887563 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with appropriate form of the verb from the given options.

One of my friends _____from Bombay recently.

Options :

1. ✔ has come

2.

have come

3. come

4. was come

Question Number : 159 Question Id : 2106887564 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with appropriate form of the verb from the given options.

Neither Ramya nor her friends _____ at the party last night.

Options :

1. Is present

2. were present

3. are present

4. will be present

Question Number : 160 Question Id : 2106887565 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct question tag for the following statement.

She completed her task successfully, _____ ?

Options :

1. ✖ Isn't she

2. ✔ didn't she

3. ✖ did she

4. ✖ is she

Question Number : 161 Question Id : 2106887566 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the **synonym** for the word, **RIGID.**

Options :

1. ✖ Expensive

2. ✖ Secular

3. ✔ Adamant

4. ✖

Close

Question Number : 162 Question Id : 2106887567 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the **synonym** for the word, **FRUGAL.**

Options :

1. ✔ Economical

2. ✖ spendthrift

3. ✖ fortunate

4. ✖ unfortunate

Question Number : 163 Question Id : 2106887568 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the **antonym** for the word, **PERISHABLE**

Options :

1. ✖ dis-perishable

2. ✔ imperishable

3. ✖ pardonable

4. ✖ punishable

Question Number : 164 Question Id : 2106887569 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the **antonym** for the word, **EXPAND.**

Options :

1. ✖ Stretch

2. ✖ Frank

3. ✔ Contract

4. ✖ grow

Question Number : 165 Question Id : 2106887570 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the one which can be substituted for the given words/expression:

The person who does not have faith in the goodness of Humanity;

Options :

1. optimist ✖

2. cynic ✔

3. angel ✖

4. opportunist ✖

Question Number : 166 Question Id : 2106887571 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the one which can be substituted for the given words/sentence:

A person who collects coins;

Options :

1. Numismatics ✖

2. Numismatist ✔

3. Numerologist ✖

4. ✖ Nephrologists

Question Number : 167 Question Id : 2106887572 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose a prefix/suffix to fill in the blank with the right form of the word given in the bracket

The economy is undergoing severe _____(Finance) crisis.

Options :

1. ✔ -cial

2. ✖ -ing

3. ✖ -cer

4. ✖ -tial

Question Number : 168 Question Id : 2106887573 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the right word:

An _____ student is sure to succeed.

Options :

1.

✔ industrious

2. ✖ industry

3. ✖ lazy

4. ✖ industrial

Question Number : 169 Question Id : 2106887574 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the right word:

Everybody should _____ his efforts in completing the task.

Options :

1. ✖ price

2. ✔ praise

3. ✖ precise

4. ✖ precious

Question Number : 170 Question Id : 2106887575 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the right word .

He has purchased a _____ for constructing a new house.

Options :

1. ✔ site

2. ✖ sight

3. ✖ cite

4. ✖ ground

Question Number : 171 Question Id : 2106887576 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the part of the sentence that has a mistake.

He exclaimed / with joy / that they / have won the match.

1 2 3 4

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 172 Question Id : 2106887577 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the part of the sentence that has a mistake.

The boy / which money / was lost / felt sorry.

1 2 3 4

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 173 Question Id : 2106887578 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the part of the sentence that has a mistake.

Madhuri and I / have done / my work diligently/ for our secured future.

1 2 3 4

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 174 Question Id : 2106887579 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the part of the sentence that has a mistake.

He feels / that he is far more better/ than his brother/ at English.

1 2 3 4

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 175 Question Id : 2106887580 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the part of the sentence that has a mistake.

The student / has never / attended a class, / hasn't he?

1 2 3 4

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 176 Question Id : 2106887581 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct alternative to replace the *italicized and underlined* part which may improve the sentence:

All his family members are in a posh area in Bangalore city.

Options :

1. ✖ All of his family members

2. ✖ All the family members of his

3. ✔ All the members of his family

4. ✖ Members of his family

Question Number : 177 Question Id : 2106887582 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct alternative to replace the *italicized and underlined* part which may improve the sentence:

The boy *told his teacher* to explain the passage.

Options :

1. ✖ called his teacher

2. ✖ ordered his teacher

3. ✔ requested his teacher

4. ✖ suggested his teacher

Question Number : 178 Question Id : 2106887583 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct alternative to replace the *italicized and underlined* part which may improve the sentence:

You need not worry about your dog *in your absence.*

Options :

1. ✔ No improvement is necessary

2. ✖ in being your absent

3. ✖ for your absence

4. ✖ by your absent

Question Number : 179 Question Id : 2106887584 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct alternative to replace the *italicized and underlined* part which may improve the sentence:

It was one of *the great disasters* of 18th century.

Options :

1. ✖ greater disaster

2. ✖ great disaster

3. ✔ the greatest disasters

4. ✖ No improvement is necessary

Question Number : 180 Question Id : 2106887585 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct alternative to replace the *italicized and underlined* part which may improve the sentence:

The river *has overflown* its banks due to heavy rains.

Options :

1. ✔ Has overflowed

2. ✖ has overfled

3. ✖ has overflew

4. ✖ overflies

Question Number : 181 Question Id : 2106887586 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the meaning of the italicized words:

At the district level, the game ended in ***a stalemate***

Options :

1. ✖ Loosing a friend

2. ✔ draw

3. ✖ huge profit

4. ✖ old style

Question Number : 182 Question Id : 2106887587 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the meaning of the italicized words:

Her ***illegible*** handwriting created problems for us.

Options :

1. ✖ unlawful

2. ✖ illegal

3. ✔ difficult to read

4. ✖ punishable

Question Number : 183 Question Id : 2106887588 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the correct phrasal verb. .

The strike was _____ by the union leaders.

Options :

1. ✖ call off

2. ✔ called off

3. ✖ call in

4. ✖ called for

Question Number : 184 Question Id : 2106887589 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the correct phrasal verb.

Her health _____ due to over work last week.

Options :

1. ✔ broke down

2. ✖ broke up

3. ✖ broke away

4. ✖ broke out

Question Number : 185 Question Id : 2106887590 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Fill in the blank with the correct phrasal verb.

The president _____ the prizes to the students last Saturday.

Options :

1. ✖ gave in

2. ✖ gave over

3. ✖ gave up

4. ✔ gave away.

Is Section Default? : null

Question Id : 2106887591 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (186 to 190)

To answer the questions from 186 to 190 read the following passage carefully and choose the correct option.

Knowledge has been the prime mover of prosperity and power. The acquisition of Knowledge has therefore been the thrust area throughout the world. Additionally, in India, there has been a culture of sharing it, not only through the tradition of guru-shishya but also by its spread to neighboring countries through travelers who came to Nalanda and other universities drawn by their reputation as centres of learning. India is endowed with natural and competitive advantages as also certain distinctive competencies. But these are scattered in isolated pockets and the awareness of these is inadequate.

Sub questions

Question Number : 186 Question Id : 2106887592 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the thrust area throughout the world?

Options :

1. ✖ prosperity

2. ✔ acquiring knowledge

3. ✖ knowledge

4. ✖ culture

Question Number : 187 Question Id : 2106887593 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The travelers came to Nalanda and other universities, because they _____

Options :

1. ✔ were attracted by its reputation

2. ✖ wanted to acquire prosperity

3. ✖ wanted culture

4. ✖ wanted to have reputation.

Question Number : 188 Question Id : 2106887594 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The word,“ Prime ” means:

Options :

1. ✔ chief

2. ✖ sole

3. ✖ normal

4. ✖ centre

Question Number : 189 Question Id : 2106887595 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to the writer about what the awareness is inadequate?

Options :

1. ✖ certain centres of power

2. ✖ certain neighboring countries

3. ✔ certain distinctive competencies

4. ✖ certain areas of knowledge

Question Number : 190 Question Id : 2106887596 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

" Knowledge has always been the prime mover of prosperity and power. "

Find out the adverb in this sentence:

Options :

1. ✖ and

2. ✖ the

3. ✖ has

4. ✔ always

Is Section Default? : null

Question Number : 191 Question Id : 2106887597 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to arrange the words in the jumbled sentence to make it meaningful.

The Nobel Prize / won / Ravindranath Tagore / in 1913.

A B C D

Options :

1. ✖ ABCD

2. ✔ CBAD

3. ✖ ACBD

4. ✖ BDAC

Question Number : 192 Question Id : 2106887598 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to arrange the words in the jumbled sentence to make it meaningful.

For how long / been waiting / have / all of you.

A B C D

Options :

1. ✖ BADC

2. ✖ BCAD

3. ✔ ACDB

4. ✖ CBAD

Question Number : 193 Question Id : 2106887599 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to arrange the words in the jumbled sentence to make it meaningful.

A very popular book / to her / by him / has been given.

A B C D

Options :

1. ✖ ACBD

2. ✔ ADCB

3. ✖ BACD

4. ✖ BCDA

Question Number : 194 Question Id : 2106887600 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to arrange the words in the jumbled sentence to make it meaningful.

Most of the children / any interest / in out door games / do not show

A B C D

Options :

1. ✖ ABCD

2. ✔ ADBC

3. ✖ DBAC

4. ✖ CBAD

Question Number : 195 Question Id : 2106887601 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to arrange the words in the jumbled sentence to make it meaningful.

Some politicians / regarding the constitution / do not have / a minimum knowledge.

A B C D

Options :

1. ✖ BADC

2. ✖ BCAD

3. ✔ ACDB

4. ✖ ACBD

Question Number : 196 Question Id : 2106887602 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to show the function of the following sentence.

Will you please allow me to speak?

Options :

1. ✔ Request

2. ✖ comment

3. ✖ suggestion

4. ✖ complement

Question Number : 197 Question Id : 2106887603 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to show the function of the following sentence.

Shall I send a letter to the head office, sir?

Options :

1. ✖ complaining

2. ✔ seeking permission

3. ✖ suggestion

4. ✖ order

Question Number : 198 Question Id : 2106887604 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to show the function of the following sentence.

Why don't you visit us on Sunday?

Options :

1. ✔ Invitation

2. ✖ commanding

3. ✖ suggesting

4. ✖ Criticizing

Question Number : 199 Question Id : 2106887605 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to show the function of the following sentence.

I am sorry, I could not see your message.

Options :

1. ✖ threatening

2. ✔

apologising

3. ✖ requesting

4. ✖ suggesting

Question Number : 200 Question Id : 2106887606 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Choose the correct option to show the function of the following sentence.

Sir, that boy has cheated me, though you warned him.

Options :

1. ✖ Commenting

2. ✖ appreciating

3. ✔ complaining

4. ✖ apologizing