

Question Paper Preview

Question Paper Name:

BSc Mathematics

Subject Name:

BSc Mathematics

Number of Questions:

Mathematics

100

Display Number Panel:

Yes

Group All Questions:

No

Question Number : 1 Question Id : 6780949405 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The family of the straight lines passing through the origin is represented by the differential equation _____

Options :

1. $ydx + xdy = 0$

2. $ydx - x^2dy = 0$

3. $xdy - ydx = 0$

4. $y^2dx + x^2dy = 0$

Question Number : 2 Question Id : 6780949406 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The integrating factor of $x \frac{dy}{dx} = -y - 4$ is _____

Options :

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

2. x^2

3. x

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

Question Number : 3 Question Id : 6780949407 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation $ydx - 2xdy = 0$ represents a family of

Options :

1. Circles
2. Parabolas
3. Ellipses
4. Straight lines

Question Number : 4 Question Id : 6780949408 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} + \frac{y}{x} = x^2, y = 1$ when $x = 1$, is _____

Options :

1. $4xy = y^4 + 3$
2. $4xy - y^4 = c$
3. $4xy = x^4 + 3$
4. $y^4 - 4xy = c$

Question Number : 5 Question Id : 6780949409 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $xdy - ydx - 2x^3dx = 0$ is _____

Options :

1. $y + x^3 = cx$
2. $x^3 - y = cx$
3. $y - x^2 = cx$
4. $y^3 - x^3 = cx$

Question Number : 6 Question Id : 6780949410 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $p^2x^2 = y^2$ is _____

Options :

1. $(y - xc)(y + xc) = 0$

2. $(y - cx)(xy - c) = 0$

3. $(y + cx)(xy + c) = 0$

4. $(x - yc)(y + xc) = 0$

Question Number : 7 Question Id : 6780949411 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the general solution of $y = x \frac{dy}{dx} + \left(\frac{dy}{dx}\right)^2$

Options :

1. $y = cx + c^2$

2. $y = \frac{c}{x} + c^2$

3. $y = c + xc^2$

4. $y = c - cx^2$

Question Number : 8 Question Id : 6780949412 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The singular solution of $\left(\frac{dy}{dx}\right)^2 + x\left(\frac{dy}{dx}\right) - y = 0$ is _____

Options :

1. $x^2 + 4x = 0$

2. $x^2 + 4y = 0$

3. $x^2 + 4y = cx$

4. $x^2 + y^2 - xy = 0$

Question Number : 9 Question Id : 6780949413 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $y - 2px = -px^2$ is _____

Options :

1. $(y + c)^2 = 4cx$

2. $y - c = 4x$

3. $(x - c)^2 = 4cy$

4. $(x + c)^2 = 4cy$

Question Number : 10 Question Id : 6780949414 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dx}{y} = \frac{dy}{-x} = \frac{dz}{2x - 3y}$ is _____

Options :

1. $x^2 + y^2 = c_1, 2x + 3y - z = c_2$

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

3. $x^2 + y^2 = c_1, 3x + 2y + z = c_2$

4. $x^2 + y^2 = c_1, 2x + 3y + z = c_2$

Question Number : 11 Question Id : 6780949415 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^4 - 1)y = \cos x$ is _____

Options :

1. $\frac{x}{17}(4\sin x + \cos x)$

2. $-\frac{x}{17}(4\sin x - \cos x)$

3. $-\frac{x}{17}(4\sin x + \cos x)$

4. $\frac{x}{17}(4\sin x - \cos x)$

Question Number : 12 Question Id : 6780949416 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^3 + a^2D)y = \sin ax$ is _____

Options :

1. $\frac{x}{2} \cos ax$
2. $\frac{x}{2a} \cos ax$
3. $\frac{x}{2} \sin ax$
4. $\frac{x}{2a} \sin ax$

Question Number : 13 Question Id : 6780949417 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The two linearly independent solutions of the differential equation $x^2y'' + xy' - y = 0$ are _____

Options :

1. x, x^2
2. x, x^{-2}
3. $x, \frac{1}{x}$
4. x, x^n

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Question Number : 14 Question Id : 6780949418 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = x$ is a solution of $x^2y'' + xy' - y = 0$ then the second linearly independent solution of the above equation is _____

Options :

1. $\frac{1}{x}$
2. x^2
3. $\frac{1}{x^2}$
4. x^n

Consider the differential equation $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + y = 0$ with boundary conditions $y(0) = 1$ and $y(1) = 0$. The value of $y(2)$ is ____

Options :

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

Question Number : 16 Question Id : 6780949420 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Particular integral of $(D^2 + 2D + 1)y = 3^x$ is ____

Options :

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

Question Number : 17 Question Id : 6780949421 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of the differential equation $\frac{d^2y}{dx^2} - y = a^x$ is ____

Options :

1. $(\log a)^2 - 1$
2. 0

3. a^x

4. $\frac{a^x}{(\log a)^2 - 1}$

Question Number : 18 Question Id : 6780949422 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the total differential equation $yz \log z dx - zx \log z dy + xy dz = 0$ is

Options :

1. $z \log x = cy$

2. $x \log z = cy$

3. $y \log z = cx$

4. $z \log y = cx$

Question Number : 19 Question Id : 6780949423 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Particular integral of $(D^2 + 4)y = \cos(2x - 1)$ is _____

Options :

1. $-x \cos(2x - 1)$

2. $\frac{x}{4} \sin(2x - 1)$

3. $x \cos(2x - 1)$

4. $-x \sin(2x - 1)$

Question Number : 20 Question Id : 6780949424 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\frac{1}{D-1} e^x \log x =$ _____

Options :

1. $e^{-x}(x \log x - 1)$

2. $e^x(x \log x - 1)$

3. $e^x(x \log x + 1)$

$$e^{-x}(x \log x + 1)$$

4.

Question Number : 21 Question Id : 6780949425 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $e^{(2+2i)x}$ is a solution of the differential equation $y'' + ay' + by = 0$, where a and b are real, then

Options :

1. $a = 4, b = -5$

2. $a = -4, b = 5$

3. $a = -4, b = 8$

4. $a = 4, b = 8$

Question Number : 22 Question Id : 6780949426 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If P is an odd prime then $\phi(2P) = \underline{\hspace{2cm}}$ where ϕ is an Euler totient function

Options :

1. P

2. P^2

3. $\phi(P)$

4. $2P$

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Question Number : 23 Question Id : 6780949427 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a be an element in a group such that $O(a) = 20$ then $O(a^6) = \underline{\hspace{2cm}}$

Options :

1. 5

2. 10

3. 20

4. 7

Question Number : 24 Question Id : 6780949428 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of subgroups of a $(Z_{11}, +_{11})$ is $\underline{\hspace{2cm}}$

Options :

1. 0

2. 2
3. 10
4. 11

Question Number : 25 Question Id : 6780949429 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If G is a cyclic group such that $O(G) = 48$ then the number of proper subgroups of G is ____

Options :

1. 3
2. 4
3. 7
4. 8

Question Number : 26 Question Id : 6780949430 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The generators of a cyclic group of order $(G = \{1, 2, 3, 4, 5, 6\}, \times_7)$ are ____

Options :

1. 2 and 3
2. 4 and 5
3. 3 and 5
4. 3 and 4

Question Number : 27 Question Id : 6780949431 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $O(G) = 65$, $O(H) = 13$ then the number of distinct left cosets of H in G is

Options :

1. 4
2. 5
3. 6
4. 7

Question Number : 28 Question Id : 6780949432 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f : G \rightarrow G'$ is an onto homomorphism with kernel K , then

Options :

1. $\frac{G}{K} \cong G'$

2. $\frac{K}{G} \cong G$

3. $\frac{K}{G} \cong K$

4. $\frac{G}{K} \cong K$

Question Number : 29 Question Id : 6780949433 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If ϕ is a group homomorphism from Z_{24} onto Z_8 then $\text{Kernal}(\phi) = \underline{\hspace{2cm}}$

Options :

1. $\{0, 2, 8\}$

2. $\{0, 4, 16\}$

3. $\{0, 2, 16\}$

4. $\{0, 8, 16\}$

Question Number : 30 Question Id : 6780949434 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is NOT CORRECT?

Options :

1. Every subgroup of an abelian group is normal

2. Every abelian group of composite order possesses a proper normal subgroup

3. Every group of prime order has proper normal subgroups

4. The intersection of any two normal subgroups of a group is a normal subgroup.

Question Number : 31 Question Id : 6780949435 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If \vec{a} and \vec{b} are two arbitrary vectors with magnitudes a and b respectively then $|\vec{a} \times \vec{b}|^2$ will be equal to $\underline{\hspace{2cm}}$

Options :

1. $a^2b^2 - (\bar{a} \cdot \bar{b})^2$

2. $ab - \bar{a} \cdot \bar{b}$

3. $a^2b^2 + (\bar{a} \cdot \bar{b})^2$

4. $ab + \bar{a} \cdot \bar{b}$

Question Number : 32 Question Id : 6780949436 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The derivative of the vector field $3xz\bar{i} + 2xy\bar{j} - yz^2\bar{k}$ at $(1,1,1)$ is _____

Options :

1. 7

2. 4

3. 3

4. 0

Question Number : 33 Question Id : 6780949437 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\nabla^2(r^n) = \text{_____}$, where $r = |\bar{R}|$, $\bar{R} = x\bar{i} + y\bar{j} + z\bar{k}$.

Options :

1. m^{n-1}

2. m^{n-2}

3. $n(n+1)r^{n-2}$

4. $n(n-1)r^{n-2}$

Question Number : 34 Question Id : 6780949438 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The directional derivative of $\phi = x^2 + y^2 + z^2$ at $(1,1,1)$ in the direction of $\bar{i} - \bar{k}$ is

Options :

1. $\sqrt{2}$

2. $2\sqrt{2}$

3. 0

4. 1

Question Number : 35 Question Id : 6780949439 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of λ for which the vector field $\vec{V} = (x+3y)\vec{i} + (y-2z)\vec{j} + (x+\lambda z)\vec{k}$ is solenoidal

Options :

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

Question Number : 36 Question Id : 6780949440 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of the directional derivative of the function $\phi = 2x^2 + 3y^2 + 5z^2$ at a point (1,1,-1) is _____

Options :

1. 10
2. -4
3. $\sqrt{152}$
4. 152

Question Number : 37 Question Id : 6780949441 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If \vec{A}, \vec{B} are two constant vectors then $\text{grad}(\vec{A} \cdot \vec{B}) =$ _____

Options :

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

Question Number : 38 Question Id : 6780949442 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $F(t)$ has a constant direction, then

Options :

1. $F \cdot \frac{dF}{dt} = 0$

$$F \times \frac{dF}{dt} = \bar{0}$$

2.

$$F \cdot \frac{dF}{dt} = \text{constant}$$

3.

$$F \times \frac{dF}{dt} = F$$

4.

Question Number : 39 Question Id : 6780949443 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The relationship among the three vectors $\bar{i} + \bar{j} + \bar{k}$, $2\bar{i} + 3\bar{j} + \bar{k}$ and $5\bar{i} + 6\bar{j} + 4\bar{k}$ is

Options :

1. The vectors are mutually perpendicular

2.

2. The vectors are linearly independent

3.

3. The vectors are linearly dependent

4.

4. The vectors are unit vectors

Question Number : 40 Question Id : 6780949444 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vector field $\bar{F} = x\bar{i} - y\bar{j}$ (where \bar{i} and \bar{j} are unit vectors) is

Options :

1. divergence free but not irrotational

2.

2. irrotational but not divergence free

3.

3. divergence free and irrotational

4.

4. neither divergence free nor irrotational

Question Number : 41 Question Id : 6780949445 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If S is any closed surface then _____

Options :

$$1. \int_S (\nabla \cdot F) \cdot dS = 0$$

2.

$$2. \int_S (\nabla \times F) \cdot dS = 0$$

3. $\int_S (\nabla F) \cdot dS = 0$

4. $\int_S (\nabla \times F) \cdot dS \neq 0$

Question Number : 42 Question Id : 6780949446 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Given a vector field \vec{F} , the divergence theorem states that

Options :

1. $\int_S \vec{F} \cdot \vec{n} dS = \int_V (\nabla \cdot \vec{F}) dV$

2. $\int_S \vec{F} \cdot \vec{n} dS = \int_V (\nabla \times \vec{F}) dV$

3. $\int_S \vec{F} \times \vec{n} dS = \int_V (\nabla \cdot \vec{F}) dV$

4. $\int_S \vec{F} \times \vec{n} dS = \int_V (\nabla \times \vec{F}) dV$

Question Number : 43 Question Id : 6780949447 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is NOT TRUE?

Options :

1. The circulation along every closed surface is zero

2. Every solenoidal field is conservative

3. The flux across every closed surface is zero

4. In a solenoidal field for which $\nabla \cdot F = 0$, the vector F can always be expressed as the curl of a vector V

Question Number : 44 Question Id : 6780949448 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\vec{F} = ax\vec{i} + by\vec{j} + cz\vec{k}$, where a, b, c are constants and S is the surface of the unit sphere, then the value of $\iint_S \vec{F} \cdot \vec{N} dS$ is

Options :

1. 0

2. $\frac{4\pi}{3}(a+b+c)^2$

3. $\frac{4\pi}{3}(a+b+c)$

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

Question Number : 45 Question Id : 6780949449 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If \bar{N} is the unit outward drawn normal to any closed surface then

$$\int_V \text{div } \bar{N} dV =$$

Options :

1. S

2. 2S

3. 3S

4. 0

Question Number : 46 Question Id : 6780949450 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Stoke's theorem connects

Options :

1. a line integral and a surface integral

2. a surface integral and a volume integral

3. a line integral and a volume integral

4. gradient of a function and its surface integral

Question Number : 47 Question Id : 6780949451 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The necessary and sufficient condition that the line integral $\int_C \bar{F} \cdot d\bar{R} = 0$

for any closed curve C is that

Options :

1. $\nabla \cdot \bar{F} = 0$

2. $\nabla \cdot \bar{F} \neq 0$

3. $\nabla \times \bar{F} = \bar{0}$

4. $\nabla \times \vec{F} \neq \vec{0}$

Question Number : 48 Question Id : 6780949452 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The integral $\oint_C (y dx - x dy)$ is evaluated along the circle $x^2 + y^2 = \frac{1}{4}$ traversed in counter clock wise direction. The integral is equal to ---

Options :

1. 0
2. $-\frac{\pi}{4}$
3. $-\frac{\pi}{2}$
4. $\frac{\pi}{4}$

Question Number : 49 Question Id : 6780949453 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\vec{F} = x\vec{i} + 2y\vec{j} + 3z\vec{k}$, and S is any closed surface enclosing a volume V , then $\iiint_S \vec{F} \cdot \vec{N} dS =$ _____

Options :

1. V
2. $2V$
3. $3V$
4. $6V$

Question Number : 50 Question Id : 6780949454 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The work done in moving a particle in the force field $\vec{F} = 3x^2\vec{i} + (2xz - y)\vec{j} + z\vec{k}$, along the curve defined by $x^2 = 4y, 3x^3 = 8z$ from $x = 0$ to $x = 2$ is ____

Options :

1. 2
2. 0
3. 4
4. 16

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Question Number : 51 Question Id : 6780949455 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following points lie on the same side of the plane $x + y + z = 2$.

Options :

1. $(-1, -1, 1)$ and $(1, 1, 1)$
2. $(1, -1, 1)$ and $(1, 1, -1)$
3. $(-1, -1, -1)$ and $(1, 1, 1)$
4. $(-1, 1, -1)$ and $(1, 1, 1)$

Question Number : 52 Question Id : 6780949456 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The distance between the parallel planes $3x - y + 4z + 11 = 0$ and $6x - 2y + 4z + 5 = 0$ is

Options :

1. $\frac{17}{2\sqrt{14}}$
2. $\frac{14}{2\sqrt{17}}$
3. $\frac{2}{17\sqrt{14}}$
4. $\frac{17}{14\sqrt{2}}$

Question Number : 53 Question Id : 6780949457 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The lines $x = ay + b$, $z = cy + d$ and $x = a'y + b'$, $z = c'y + d'$ are perpendicular if

Options :

1. $ad' + cc' = 1$
2. $ad' + cc' = -1$
3. $bb' + dd' = 1$
4. $bb' + dd' = -1$

Question Number : 54 Question Id : 6780949458 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the plane passing through $(1, 0, -2)$ and perpendicular to each of the planes $2x + y - z - 2 = 0$ and $x - y - z = 3$ is _____

Options :

1. $2x + y + 3z + 4 = 0$
2. $2x - y - 3z - 4 = 0$
3. $2x - y - 3z + 4 = 0$
4. $2x - y + 3z + 4 = 0$

Question Number : 55 Question Id : 6780949459 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The perpendicular distance from the point $(1, 2, 3)$ to the line

$$\frac{x-6}{3} = \frac{y-7}{2} = \frac{z-7}{-2} \text{ is } \underline{\hspace{2cm}}$$

Options :

1. 14 units
2. 4 units
3. 7 units
4. 17 units

Question Number : 56 Question Id : 6780949460 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The power of the point $(1, 1, 1)$ with respect to the sphere

$$x^2 + y^2 + z^2 - 4x - 6y + 8z + 25 = 0 \text{ is } \underline{\hspace{2cm}}$$

Options :

1. 26
2. 20
3. 22
4. 24

Question Number : 57 Question Id : 6780949461 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the sphere $9(x^2 + y^2 + z^2) - 10x + 20y - 20z - 31 = 0$ is _____

Options :

1. $\left(\frac{5}{9}, -\frac{10}{9}, \frac{10}{9}\right)$

2. $(5, -10, 10)$

3. $(-5, 10, -10)$

4. $\left(\frac{10}{9}, -\frac{20}{9}, \frac{20}{9}\right)$

Question Number : 58 Question Id : 6780949462 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For what value of a , the plane $x + y + z = a\sqrt{3}$ is a tangent plane to the sphere $x^2 + y^2 + z^2 - 2x - 2y - 2z = 6$.

Options :

1. $\sqrt{3} + 3$

2. $\sqrt{3} \pm 3$

3. $\sqrt{3} - 3$

4. $\sqrt{3 \pm \sqrt{3}}$

Question Number : 59 Question Id : 6780949463 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the tangent drawn from $P(1, 2, -1)$ to the sphere

$x^2 + y^2 + z^2 - 3x - 7y - 9z + 4 = 0$ is ___

Options :

1. $5\sqrt{2}$

2. $3\sqrt{2}$

3. $2\sqrt{2}$

4. $\sqrt{2}$

Question Number : 60 Question Id : 6780949464 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The limiting points of the coaxial system of spheres

$(x^2 + y^2 + z^2 - 20x + 30y - 40z + 29) + \lambda(2x - 3y + 4z) = 0$ are ___

Options :

1. $(2, -3, 4)$ & $(-2, 3, -4)$

2. $(-3, 2, -4)$ and $(3, 2, 4)$

3. $(-4,3,-2)$ and $(4,3,2)$

4. $(-2,4,-3)$ and $(2,4,3)$

Question Number : 61 Question Id : 6780949465 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The values of infimum and supremum of the set $S = \{x \in \mathbb{R}^+ \mid x^3 < x\}$ are

Options :

1. 0 and 1

2. -1 and 1

3. 0 and 3

4. 1 and 3

Question Number : 62 Question Id : 6780949466 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sequence $\{s_n\}$ defined by $s_n = \frac{(-1)^n}{n}$ is _____

Options :

1. Increasing sequence

2. Decreasing increasing

3. Neither increasing nor decreasing

4. Both increasing and decreasing

Question Number : 63 Question Id : 6780949467 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The set of limit points of the sequence $\{s_n\} = \left\{ \sin \frac{n\pi}{2} \right\}$ is _____

Options :

1. $\{-1, 0\}$

2. $\{-1, 1\}$

3. $\{-1, 0, 1\}$

4. $\{0, 1\}$

Question Number : 64 Question Id : 6780949468 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following series is divergent

Options :

1. $\sum \frac{1}{4^n}$

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

3. $\sum \frac{1}{2n-1}$

4. $\sum \frac{1}{n(n+1)}$

Question Number : 65 Question Id : 6780949469 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function $f(x) = |x|$ in $[-1, 1]$ is

Options :

1. Continuous and derivable

2. Continuous but not derivable

3. Derivable but not continuous

4. neither continuous nor derivable

Question Number : 66 Question Id : 6780949470 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = \frac{1 - \cos ax}{x \sin x}$ is continuous at $x = 0$ where $f(0) = \frac{1}{2}$ then $a = \underline{\hspace{2cm}}$

Options :

1. 1

2. -1

3. ± 1

4. 0

Question Number : 67 Question Id : 6780949471 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = |x-1|$ then the left derivative of $f(x)$ at $x=1$ is $\underline{\hspace{2cm}}$

Options :

1. -1

2. 1
3. 0
4. 2

Question Number : 68 Question Id : 6780949472 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of c in Rolle's theorem for $f(x) = \frac{\sin x}{e^x}$ in $(0, \pi)$ is _____

Options :

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

Question Number : 69 Question Id : 6780949473 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Taylor series expansion of e^x about $x=2$, the coefficient of $(x-2)^4$ is

Options :

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

Question Number : 70 Question Id : 6780949474 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function $f(x) = x \sin \frac{1}{x}, (x \neq 0); f(x) = 0, (x = 0)$. At $x = 0, f(x)$ is _____

Options :

1. Continuous and differentiable

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2. Continuous but not differentiable
3. Differentiable but not continuous
4. not continuous and not differentiable

Question Number : 71 Question Id : 6780949475 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = x^2$ defined on $[0, 1]$ and $P = \left\{0, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, 1\right\}$ then $L(P, f) =$ _____

Options :

1. $\frac{2}{32}$
2. $\frac{5}{32}$
3. $\frac{7}{32}$
4. $\frac{15}{32}$

Question Number : 72 Question Id : 6780949476 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = [x]$ for $x \in [0, 3]$ then

Options :

1. $f(x)$ has infinite number discontinuous points in $[0, 3]$
2. $f(x)$ is unbounded on $[0, 3]$
3. $f(x)$ is Riemann integrable on $[0, 3]$
4. $f(x)$ is not Riemann integrable on $[0, 3]$

Question Number : 73 Question Id : 6780949477 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = 1$ when $x \in \mathcal{Q}$ and $f(x) = 0$ when $x \in \mathcal{R} - \{\mathcal{Q}\}$ then

Options :

1. $\int_0^1 f(x) dx$ exists
2. Lower and upper Riemann integrals both exist, but not equal

3. Neither lower nor upper Riemann integral exist

4. $f(x)$ is differentiable

Question Number : 74 Question Id : 6780949478 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f : [a, b] \rightarrow \mathbb{R}$ is bounded function and $P_1, P_2 \in \mathcal{P}[a, b]$ such that $P_1 \subset P_2$ then

Options :

1. $U(P_1, f) \geq U(P_2, f)$

2. $U(P_1, f) \leq U(P_2, f)$

3. $L(P_1, f) \geq L(P_2, f)$

4. $U(P_1, f) = U(P_2, f)$

Question Number : 75 Question Id : 6780949479 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If p is a prime then $(\mathbb{Z}_p, +_p, \times_p)$ is

Options :

1. Non commutative ring

2. Has zero divisors

3. A field

4. Not a field

Question Number : 76 Question Id : 6780949480 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If R is a commutative ring and $\forall a, b \in R$, then

Options :

1. $(a+b)^2 = a^2 + b^2$

2. $(a+b)^2 = a^2 - b^2$

3. $(a+b)^2 = a^2 + b^2 + 2ab$

4. $(a+b)^2 = (a-b)^2$

Question Number : 77 Question Id : 6780949481 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Consider the ring $R = \{0, 2, 4, 6, 8, 10\}$ under multiplication and addition modulo 12 then $\text{char}(R) = \underline{\hspace{2cm}}$

Options :

1. 2
2. 4
3. 6
4. 8

Question Number : 78 Question Id : 6780949482 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solutions of the equations $x^2 \oplus 1 = 0$ in the field $(\mathbb{Z}_5, \oplus, \otimes)$ are

Options :

1. 0, 1
2. 1, 2
3. 2, 3
4. 1, 4

Question Number : 79 Question Id : 6780949483 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let R be the ring of all 2×2 matrices over \mathbb{Z} , the set of integers, then

$$M = \left\{ \begin{bmatrix} a & 0 \\ b & 0 \end{bmatrix} \mid a, b \in \mathbb{Z} \right\} \text{ is } \underline{\hspace{2cm}}$$

Options :

1. Left ideal but not a right ideal
2. Right ideal but not a left ideal
3. Ideal
4. Neither left ideal nor right ideal

Question Number : 80 Question Id : 6780949484 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a and b are associates in an Euclidean ring then $\underline{\hspace{2cm}}$

Options :

1. $d(a) = d(b)$
2. $d(a) < d(b)$
3. $d(b) < d(a)$

4. $d(a) \leq d(b)$

Question Number : 81 Question Id : 6780949485 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. $\{(1, 1, 2), (1, 2, 5), (5, 3, 4)\}$

2. $\{(0, 0, 1), (0, 1, 1), (0, 0, 0)\}$

3. $\{(1, 3, 2), (1, -7, -8), (2, 1, -1)\}$

4. $\{(1, 0, 0), (1, 1, 0), (1, 1, 1)\}$

Question Number : 82 Question Id : 6780949486 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If W_1 is a subspace of $R^4(R)$ given by $W_1 = \{(a, b, c, d) : b - 2c + d = 0\}$ then $\dim W_1 =$ _____

Options :

1. 3

2. 4

3. 2

4. 1

Question Number : 83 Question Id : 6780949487 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $U = \{(1, 2, 1), (0, 1, 2)\}$ and $W = \{(1, 0, 0), (0, 1, 0)\}$ then the dimension of $U + W$ is _____

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 84 Question Id : 6780949488 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum number of linearly independent vectors in a vector space of dimension 5 is

Options :

1. 5
2. 4
3. 6
4. 8

Question Number : 85 Question Id : 6780949489 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $T : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ is a linear transformation given by $T(2, 3) = (4, 5)$ and $T(1, 0) = (0, 0)$, then $T(5, 3) =$ _____

Options :

1. $\left(\frac{5}{3}, 1\right)$
2. (8, 10)
3. (4, 5)
4. (7, 5)

Question Number : 86 Question Id : 6780949490 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $T_1 : \mathbb{R}^3 \rightarrow \mathbb{R}^2$ and $T_2 : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ are two linear transformations defined by $T_1(x, y, z) = (3x, 4y - z)$ and $T_2(x, y) = (-x, y)$ then T_2T_1 is _____

Options :

1. $(-3x, 4y+z)$
2. $(-3x, 4y-z)$
3. $(3x, 4y+z)$
4. not defined

Question Number : 87 Question Id : 6780949491 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $T : \mathbb{R}^6 \rightarrow \mathbb{R}^6$ is a linear transformation with nullity of T is 4 then rank of T is _____

Options :

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

If $T : V_2 \rightarrow V_3$ is a linear transformation defined by $T(x, y) = (x + y, 2x - y, 7y)$ then the matrix of T relative to B_1 and B_2 is _____, where B_1 and B_2 are the standard bases of V_2 and V_3 respectively.

Options :

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

2. $\begin{bmatrix} 1 & 2 & 0 \\ 2 & 1 & 7 \end{bmatrix}$

3. $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 0 & 7 \end{bmatrix}$

4. $\begin{bmatrix} 1 & 2 & 0 \\ 1 & -1 & -7 \end{bmatrix}$

Rank of the matrix $A = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ is _____

Options :

1. 2

2. 1

3. 3

4. 0

For what value of k the system of equations $x + y + z = 3, x + 2y + 3z = 4, x + 4y + kz = 6$ will NOT have a unique solution?

Options :

1. 6

- 2. 5
- 3. 0
- 4. 7

Question Number : 91 Question Id : 678094945 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} 1 & 1 & 0 \\ 2 & 1 & 3 \\ 0 & 1 & 2 \end{bmatrix}$, then $\det(\text{Adj}A) =$ _____

- Options :
- 1. $\det A$
 - 2. $\det A^2$
 - 3. $-\det A$
 - 4. $(\det A)^2$

Question Number : 92 Question Id : 678094946 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

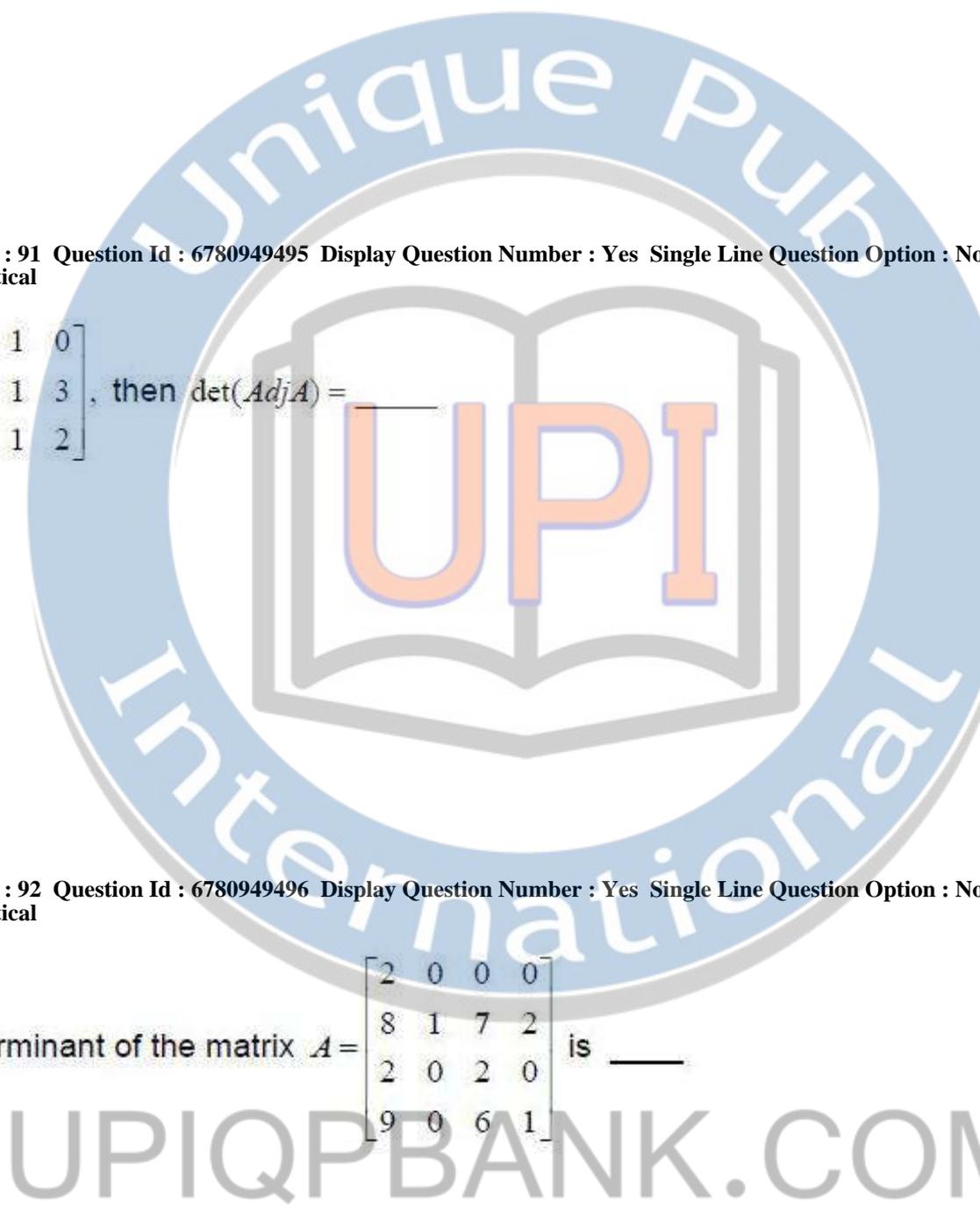
The determinant of the matrix $A = \begin{bmatrix} 2 & 0 & 0 & 0 \\ 8 & 1 & 7 & 2 \\ 2 & 0 & 2 & 0 \\ 9 & 0 & 6 & 1 \end{bmatrix}$ is _____

- Options :
- 1. 2
 - 2. 20
 - 3. 4
 - 4. 0

Question Number : 93 Question Id : 678094947 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of q for which the set of linear equations $2x + 3y = 0, 6x + qy = 0$ can have non trivial solution is _____

- Options :
- 1. 2
 - 2. 6
 - 3. 9



Question Number : 94 Question Id : 6780949498 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is TRUE for all real symmetric matrices?

Options :

1. All the eigen values are real
2. All the eigen values are positive
3. All the eigen values are distinct
4. Sum of all the eigen values is zero

Question Number : 95 Question Id : 6780949499 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One of the eigen vector of the matrix $A = \begin{bmatrix} -5 & 2 \\ -9 & 6 \end{bmatrix}$ is —

Options :

1. $\begin{bmatrix} -1 \\ 1 \end{bmatrix}$
2. $\begin{bmatrix} -2 \\ 9 \end{bmatrix}$
3. $\begin{bmatrix} 2 \\ -1 \end{bmatrix}$
4. $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$

Question Number : 96 Question Id : 6780949500 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The necessary condition to diagonalize a matrix is that

Options :

1. The matrix is non-singular
2. Its eigen values should be real

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Its eigen vectors should be independent

3.

Its all eigen values should be distinct

4.

Question Number : 97 Question Id : 6780949501 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\alpha = (-1, 0, 1)$ and $\beta = (2, 0, -2)$ then $\|\alpha + \beta\| =$ _____

Options :

1. 0

2. 1

3. 2

4. $\sqrt{2}$

Question Number : 98 Question Id : 6780949502 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For $\alpha, \beta \in V$, in an inner product space $V(F)$, the triangle inequality states that

Options :

1. $\|\alpha + \beta\| = \|\alpha\| + \|\beta\|$

2. $\|\alpha + \beta\| > \|\alpha\| + \|\beta\|$

3. $\|\alpha + \beta\| < \|\alpha\| + \|\beta\|$

4. $\|\alpha + \beta\| \leq \|\alpha\| + \|\beta\|$

Question Number : 99 Question Id : 6780949503 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an inner product space $V(F)$, for $a, b \in F$ and $\alpha, \beta \in V$, then $(a\alpha, b\beta) =$

Options :

1. $ab(\alpha, \beta)$

2. $a\bar{b}(\alpha, \beta)$

3. $\bar{a}b(\alpha, \beta)$

4. $\bar{a}\bar{b}(\alpha, \beta)$

Question Number : 100 Question Id : 6780949504 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If α, β are two vectors in an inner product space such that

$|(\alpha, \beta)| = \|\alpha\| \|\beta\|$ then α, β are _____

Options :

1. Linearly dependent
2. Linearly independent
3. Orthonormal
4. Orthogonal

Analytical Ability

Number of Questions: 44
Display Number Panel: Yes
Group All Questions: No

Question Number : 101 Question Id : 6780949505 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

What is the Average mark of three students joined recently in a class?

- I. The average mark of the class before joining these 3 students is 68 marks.
- II. Marks of newly joined students respectively are 62,75 and 78.

Options :

1. The data given in I alone is sufficient to answer the question
2. The data given in II alone is sufficient to answer the question
3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient
4. Both I and II put together are not sufficient to answer the question and additional data is needed

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

What is the difference between Ravi and Raja ages?

I. After 5 years the ratio of their ages would be 9:5.

II. Ravi is twice as old as Raja.

Options :

1. The data given in I alone is sufficient to answer the question

2. The data given in II alone is sufficient to answer the question

3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

4. Both I and II put together are not sufficient to answer the question and additional data is needed

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

A shop keeper sells some articles and got 5% profit. What is the exact amount of profit in rupees?

I. Number of articles sold are 10.

II. Transport cost of these articles is Rs. 150/-.

Options :

1. The data given in I alone is sufficient to answer the question

2. The data given in II alone is sufficient to answer the question

3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

Both I and II put together are not sufficient to answer the question and additional data is needed

4.

Question Number : 104 Question Id : 6780949508 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

What is the total of ten data items?

I. The average of first 4 data items is 65.

II. The average of next 6 data items is 76.

Options :

1. The data given in I alone is sufficient to answer the question

2. The data given in II alone is sufficient to answer the question

3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

4. Both I and II put together are not sufficient to answer the question and additional data is needed

Question Number : 105 Question Id : 6780949509 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

How much percentage of profit Ravi got by selling a T.V.?

I. He brought the T.V. with 25% discount on labeled price.

II. He sold the T.V. with 25% profit on the labeled price.

Options :

1. The data given in I alone is sufficient to answer the question

2. The data given in II alone is sufficient to answer the question

Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

3.

Both I and II put together are not sufficient to answer the question and additional data is needed

4.

Question Number : 106 Question Id : 6780949510 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

A and B started a partnership business and got rupees 20 thousands profit. What is B Share of profit?

I. A and B investment ratios are 3:2.

II. B share is Rs. 10,000 less than A share.

Options :

The data given in I alone is sufficient to answer the question

1.

The data given in II alone is sufficient to answer the question

2.

Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

3.

Both I and II put together are not sufficient to answer the question and additional data is needed

4.

Question Number : 107 Question Id : 6780949511 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

In how many days can Ram and Kumar together can complete the work?

I. Kumar can complete the job in 30 days.

II. Ram can complete the job in 20 days.

Options :

1. The data given in I alone is sufficient to answer the question
2. The data given in II alone is sufficient to answer the question
3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient
4. Both I and II put together are not sufficient to answer the question and additional data is needed

Question Number : 108 Question Id : 6780949512 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

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

- I. A can fill the tank in 20 minutes.
- II. B can empty the full tank in 10 minutes.

Options :

1. The data given in I alone is sufficient to answer the question
2. The data given in II alone is sufficient to answer the question
3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient
4. Both I and II put together are not sufficient to answer the question and additional data is needed

Question Number : 109 Question Id : 6780949513 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

Two cities are connected by railway line. What is the distance between two cities?

- I. The speed of the express train is 20 km/hr more than the passenger train.
- II. The passenger train takes 5 hours to cover the distance.

Options :

- 1. The data given in I alone is sufficient to answer the question
- 2. The data given in II alone is sufficient to answer the question
- 3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient
- 4. Both I and II put together are not sufficient to answer the question and additional data is needed

Question Number : 110 Question Id : 6780949514 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions : A question is given followed by data in the form of two statements labeled as I and II. Choose the correct option to answer the question.

In how many years will a sum of money at simple interest become treble?

- I. The rate of interest is 12.5%.
- II. The interest earned in 4 years is half of the sum invested.

Options :

- 1. The data given in I alone is sufficient to answer the question
- 2. The data given in II alone is sufficient to answer the question
- 3. Both I and II put together are sufficient to answer the question and any single statement alone is not sufficient

Both I and II put together are not sufficient to answer the question and additional data is needed

4.

Question Number : 111 Question Id : 6780949515 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the next number in the series 1,1,2,4,7,11,-----?

Options :

1. 18

2. 17

3. 19

4. 16

Question Number : 112 Question Id : 6780949516 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the next fraction in the series $1/5, 5/7, 8/9, \text{-----?}$

Options :

1. $9/11$

2. $10/11$

3. $10/10$

4. $11/11$

Question Number : 113 Question Id : 6780949517 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill up the missing number in the ratio $15:3::75:---$.

Options :

1. 150

2. 6

3. 15

4. 60

Question Number : 114 Question Id : 6780949518 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the next in the series? DGK, KNR, RUY, ----.

Options :

1. YZD
2. YBF
3. YBE
4. YBG

Question Number : 115 Question Id : 6780949519 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill up the missing numbers in the series 1,5,4,7,7,9,---,11,13,----.

Options :

1. 10,12
2. 10,14
3. 10,13
4. 10,14

Question Number : 116 Question Id : 6780949520 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $5*4 = 9$, $8*19 = 27$ then what is $11*20 = ?$

Options :

1. 30
2. 31
3. 9
4. 27

Question Number : 117 Question Id : 6780949521 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the odd man out: Bulb, T.V., Fan, Car, A.C., Computer.

Options :

1. A.C
2. T.V.
3. Computer

4. Car

Question Number : 118 Question Id : 6780949522 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the odd man out: 75, 84, 66, 93, 88, 48, 57.

Options :

1. 66
2. 75
3. 88
4. 93

Question Number : 119 Question Id : 6780949523 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A + 10 = 15$ and $10 - B = 8$ then what is $A * B = ?$

Options :

1. 5
2. 10
3. 7
4. 3

Question Number : 120 Question Id : 6780949524 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the missing number

1	3	5	10	8
1	9	25	0	?
1	3	5	0	2

Options :

1. 4
2. 16
3. 6
4. 64

Question Id : 6780949525 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (121 to 127)

Hint: Use the following table to answer the question .

Sale of batteries sold by a company in 3 years is as follows:

Year/type	2014	2015	2016	Total.
32AH	102	85	63	250
35AH	105	120	135	360
55AH	110	155	125	390
Total.	317	360	323	1000

Sub questions

Question Number : 121 Question Id : 6780949526 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which year batteries sold are highest?

Options :

1. 2014
2. 2015
3. 2016
4. 2017

Question Number : 122 Question Id : 6780949527 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which type of Battery has continuous increase of demand?

Options :

1. 32 AH
2. 55AH
3. 30 AH
4. 35 AH

Question Number : 123 Question Id : 6780949528 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the approximate rate of increased sale of 55AH battery from 2014 to 2015?

Options :

1. 40.91
2. 40.19
3. 49.91
4. 49.19

Question Number : 124 Question Id : 6780949529 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Throughout the period which type of battery has popular sale?

Options :

1. 32 AH
2. 55AH
3. 30 AH
4. 35 AH

Question Number : 125 Question Id : 6780949530 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Which year which type batteries are sold highest?

Options :

1. 2014,55AH
2. 2015,35 AH
3. 2016, 55AH
4. 2015, 55AH

Question Number : 126 Question Id : 6780949531 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which year which type battery has least demand?

Options :

1. 216,32AH
2. 2016, 55AH
3. 2015, 32AH
4. 2016, 35AH

Question Number : 127 Question Id : 6780949532 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which type of battery has lowest demand?

Options :

1. 32 AH
2. 55AH

3. 30 AH

4. 35 AH

Question Number : 128 Question Id : 6780949533 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If COMPUTER is coded as RECOTUMP then CALENDER is coded as -----?

Options :

1. RELEDNCA

2. RECADNLE

3. RELECADN

4. REDNLECA

Question Number : 129 Question Id : 6780949534 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If TABLE is coded as UBCMF then BENCH is coded as -----?

Options :

1. CFODI

2. ODICF

3. FCOID

4. CFDOI

Question Number : 130 Question Id : 6780949535 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If LIFE is coded as 9253, RIPPLE is coded as 724493 then PILLER is coded as

Options :

1. 499237

2. 994237

3. 429937

4. 423799

Question Number : 131 Question Id : 6780949536 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If APPLE is coded as ZKKOV and BANK is coded as YZMP then BLACK is coded as -----?

Options :

1. YZOXF
2. ZYOPX
3. YOZXP
4. YZXPO

Question Number : 132 Question Id : 6780949537 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If BUTTER is coded as 123345 then RUBBER is coded as -----?

Options :

1. 521145
2. 125541
3. 554511
4. 512145

Question Number : 133 Question Id : 6780949538 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a certain code 438271 is coded as 529180 then what is the decode of 325742-----?

Options :

1. 416651
2. 233384
3. 234833
4. 234831

Question Number : 134 Question Id : 6780949539 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a certain language Pen is called black, black is called book, book is called blue, blue is called bag, bag is called read and read is called marks. In that language what is the color of the Sky?

Options :

1. Blue

2. Black
3. Book
4. Bag

Question Number : 135 Question Id : 6780949540 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a certain code '1 2 3' is coded as 'CUP' and '3 4 5' is coded as 'PEN' and '5 6 7' is coded as 'NOT'. Then the word 'PUT' is decoded as -----?

Options :

1. 2 3 4
2. 3 6 7
3. 5 7 3
4. 3 2 7

Question Number : 136 Question Id : 6780949541 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A leap year consists of how many odd days?

Options :

1. Zero
2. One
3. Two
4. Three

Question Number : 137 Question Id : 6780949542 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The calendar of 2017 is the same as the calendar of the following year

Options :

1. 2007
2. 2008
3. 2009
4. 2010

Question Number : 138 Question Id : 6780949543 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Among the following, which is not a leap year?

Options :

1. 1948
2. 2000
3. 2004
4. 2100

Question Number : 139 Question Id : 6780949544 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Number of odd days in 100 years is -----.

Options :

1. 2
2. 3
3. 5
4. 6

Question Number : 140 Question Id : 6780949545 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What was the day of the week on 6th June, 2002?

Options :

1. Tuesday
2. Thursday
3. Friday
4. Sunday

Question Number : 141 Question Id : 6780949546 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle between hours hand and minutes hand in a clock wise direction at 3.00 p.m. is -----.

Options :

1. 0 degrees
2. 90 degrees
3. 180 degrees

4. 270 degrees

Question Number : 142 Question Id : 6780949547 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Between 11.00 a.m. to 1.00 p.m. both hands of the clock coincide how many times?

Options :

1. 3 times
2. 1 time
3. 2 times
4. zero times

Question Number : 143 Question Id : 6780949548 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many times both hands in a clock are in right angles in a day?

Options :

1. 22 times
2. 11 times
3. 44 times
4. 48 times

Question Number : 144 Question Id : 6780949549 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many times both hands in a clock point in opposite direction in 12 hours?

Options :

1. 12 times
2. 11 times
3. 60 times
4. 30 times

Question Number : 145 Question Id : 6780949550 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a digital watch at a Railway station displaying hours and minutes show how many times all the Four digits same in a day?

Options :

1. 1 time
2. 2 times
3. 3 times
4. 4 times

Question Number : 146 Question Id : 6780949551 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In how many different ways 5 books can be arranged in a shelf?

Options :

1. 201 Ways
2. 100 Ways
3. 120 Ways
4. 80 Ways

Question Number : 147 Question Id : 6780949552 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In how many ways one can select any two different books from five books?

Options :

1. 20 ways
2. 15 ways
3. 10 ways
4. 5 ways

Question Number : 148 Question Id : 6780949553 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In how many ways 4 girls and 6 boys are to be arranged in cinema theater consisting of 10 seats in a Row such that all girls must sit together.

Options :

1. $10!$ Ways
2. $6!4!$ Ways
3. $5!5!$ Ways

7!4! Ways

4.

Question Number : 149 Question Id : 6780949554 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the value of $30! / 28!$?

Options :

1. 870

2. 780

3. 670

4. 760

Question Number : 150 Question Id : 6780949555 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the value of 4P_4 ?

Options :

1. 1

2. 18

3. 20

4. 24

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Number of Questions:	46
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 151 Question Id : 6780949556 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Mr. Ratnam is _____ honorary member of the Temple Committee.

Options :

1. A

2. An

3. the

No article needed

4.

Question Number : 152 Question Id : 6780949557 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

_____ attempt has been made to collect funds to start _____
Public Library.

Options :

1. The, a
2. An, a
3. A, an
4. A, the

Question Number : 153 Question Id : 6780949558 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

_____ the teacher there are forty students in the class.

Options :

1. With
2. Beside
3. Besides
4. Along

Question Number : 154 Question Id : 6780949559 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

The members are discussing _____ the issue.

Options :

1. On
2. about
3. over

4. no preposition needed

Question Number : 155 Question Id : 6780949560 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

No one _____ notice the change in you till today.

Options :

1. does not
2. does
3. do not
4. did

Question Number : 156 Question Id : 6780949561 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

The show _____ before I entered the theatre

Options :

1. was started
2. did start
3. started
4. had started

Question Number : 157 Question Id : 6780949562 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

He _____ by the police, already.

Options :

1. arrested
2. is arrested

3. has arrested

4. has been arrested

Question Number : 158 Question Id : 6780949563 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the best word from the following to make the sentence complete and meaningful.

So far none of the Ministers _____ allotted portfolio.

Options :

1. are

2. were

3. has been

4. have been

Question Number : 159 Question Id : 6780949564 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the best word from the following to make the sentence complete and meaningful.

Many of the workers _____ to be paid the remuneration.

Options :

1. need

2. needs

3. needed

4. is needing

Question Number : 160 Question Id : 6780949565 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct question tag for the following :

I am a good citizen.

Options :

1. Amn't I?

Am I?

2.

Aren't I?

3.

Don't I?

4.

Question Number : 161 Question Id : 6780949566 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the synonym for the word, 'VERDICT'

Options :

Pronounce

1.

Prompt

2.

Agreement

3.

Judgment

4.

Question Number : 162 Question Id : 6780949567 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the synonym for the word, 'ABOLISH'

Options :

Embellish

1.

Eradicate

2.

Endure

3.

Export

4.

Question Number : 163 Question Id : 6780949568 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the antonym of the word, 'CONDENSE'

Options :

Move

1.

Expand

2.

Recede

3.

Abscond

4.

Question Number : 164 Question Id : 6780949569 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the antonym of the word, 'ABUNDANT'

Options :

Reluctant

1.

Minor

2.

Meager

3.

Dull

4.

Question Number : 165 Question Id : 6780949570 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

The science that deals with birds :

Options :

Ornithology

1.

Pathology

2.

Ophthalmology

3.

Biology

4.

Question Number : 166 Question Id : 6780949571 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

One who is present everywhere :

Options :

Omniscient

1.

Omnipresent

2.

3. Nonviolent

4. Ambivalent

Question Number : 167 Question Id : 6780949572 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

One must be aware of one's own _____ (abilities).

Options :

1. Non-

2. un-

3. in-

4. en-

Question Number : 168 Question Id : 6780949573 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the right word from the following to fill in the blank:

He received a _____ for Rs. 1000/- from the Principal as a prize.

Options :

1. check

2. cheque

3. chalk

4. cheek

Question Number : 169 Question Id : 6780949574 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the right word from the following to fill in the blank:

There was no _____ Board indicating way out in the theatre.

Options :

1. Exit

- 2. Excite
- 3. Exite
- 4. Exist

Question Number : 170 Question Id : 6780949575 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the right word from the following to fill in the blank:

The machine has been _____ for use in kitchen.

Options :

- 1. adopted
- 2. aborted
- 3. adapted
- 4. averted

Question Number : 171 Question Id : 6780949576 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify which part of the sentence is wrong:

One/ should love / his own / country

- 1
- 2
- 3
- 4

Options :

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

Question Number : 172 Question Id : 6780949577 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify which part of the sentence is wrong:

Prime Minister, Mr. Modi / congratulated / the ISRO scientists / for their success, recently.

1

2

3

4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 173 Question Id : 6780949578 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify which part of the sentence is wrong:

The Police Inspector / said that / he had arrested the thief / yesterday.

1

2

3

4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 174 Question Id : 6780949579 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify which part of the sentence is wrong:

One of my relatives / is having / three Tea Estates / in this valley.

1

2

3

4

Options :

1. 1

2. 2

3. 3

4. 4

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turned in

2.

turned down

3.

turned away

4.

Question Number : 178 Question Id : 6780949583 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Had he come earlier, he *should have met* the celebrity.

Options :

could have met

1.

will have met

2.

would meet

3.

would have met

4.

Question Number : 179 Question Id : 6780949584 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Being very hungry *he not only ate food but also fruits.*

Options :

not only food but ate also fruits

1.

he ate not only but also

2.

he ate not only food but also fruits

3.

not only ate food also fruits.

4.

Question Number : 180 Question Id : 6780949585 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

It is against to the professional ethics for any officer to run behind illegal money.

Options :

1. run along
2. running besides
3. run after
4. run beyond

Question Number : 181 Question Id : 6780949586 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the exact meaning of the idiom/phrase used in the sentence below:

Parental property has become a bone of contention between the siblings.

Options :

1. a unifying factor
2. something that cause quarrel
3. a firm view
4. a strong agreement

Question Number : 182 Question Id : 6780949587 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the exact meaning of the idiom/phrase used in the sentence below:

The foreman hit the nail on the head when he said that the machine had malfunctioned because of a faulty spark plug.

Options :

1. do or say exactly the right thing
2. to hit hard on the head
3. to hide the fact and hit the nail

say inaccurately right about something.

4.

Question Number : 183 Question Id : 6780949588 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the correct phrasal verb choosing from the options given below

Slowly, her fear of flying _____ .

Options :

1. died up

2. died on

3. died down

4. died along

Question Number : 184 Question Id : 6780949589 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the correct phrasal verb choosing from the options given below

The High court has _____ the appeal of the Government.

Options :

1. set in

2. set aside

3. set out

4. set up

Question Number : 185 Question Id : 6780949590 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the correct phrasal verb choosing from the options given below

The doctor says, the patient will _____ , positively.

Options :

1. pull off

2. pull out
3. pull through
4. pull down

Question Id : 6780949591 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (186 to 190)

To answer the question read the passage carefully
and choose the appropriate option.

Pondicherry became famous and continues to be so because of the Aurobindo Ashram. This great philosopher and revolutionary of Bengal chose Pondicherry to settle down and propagate his teachings. He founded the Ashram at the turn of the century, and which has grown in size and number. He founded an admirable disciple in a French woman who, on a visit to India from France, came so much under the spell of the philosophy of Aurobindo that she came a second time never to return to her country. She become such an ardent devotee of Aurobindo that he nominated her as his successor and told people that she was capable of greater things. The Mother of La Mere as she was known continued to preside over the Ashram till her end at the ripe age of 95.

The Ashram has a lot of Indians and foreigners staying in it. The philosophy being 'perfection of man through work'- every man or woman can pursue any type of work he or she likes but do it with perfection.

Auroville – the City of Dawn sponsored by the Sri Aurobindo Society is just across the Pondicherry border in Tamil Nadu. It was established in 1968 with the cooperation of many nations whose soils are found here and the impetus provided by the Mother. Its main work is to work for the advent of a progressive universal harmony.

Sub questions

Question Number : 186 Question Id : 6780949592 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What was the founder of the Ashram before he went to Pondicherry?

Options :

He had a society of service of his own.

1.

2. He was the ardent disciple of the Mother.

3. He was a revolutionary Bengali and Philosopher.

4. He was a veteran Freedom Fighter.

Question Number : 187 Question Id : 6780949593 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the philosophy of the Ashram ?

Options :

1. perfection of man through work

2. perfection of woman through work

3. perfection work through woman

4. perfection work through man

Question Number : 188 Question Id : 6780949594 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The word, 'Impetus' means:

Options :

1. Thirst

2. Thrust

3. Cooperation

4. Perfection

Question Number : 189 Question Id : 6780949595 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How was the life-time successor of Aurobindo known?

Options :

1. La Mere

2. The Mother La Mere

La Mere the French

3.

La Mere, an admirable disciple.

4.

Question Number : 190 Question Id : 6780949596 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What was the reason for the French woman not to return to her country?

Options :

The spell of Aurobindo's philosophy

1.

The growth of the Ashram in size and number

2.

The desire to succeed Aurobindo in the Ashram

3.

Reasons 2 and 3.

4.

Question Number : 191 Question Id : 6780949597 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct order of sentence parts which gives meaningful sentence.

Rohit / in-spite-of warning/ lavishly / spent money

A

B

C

D

Options :

ABCD

1.

ADCB

2.

ACBD

3.

BDAC

4.

Question Number : 192 Question Id : 6780949598 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct order of sentence parts which gives meaningful sentence

103 satellites / India could / into the space / successfully launch at once

A

B

C

D

Options :

1. CBDA
2. CABD
3. BDAC
4. DCBA

Question Number : 193 Question Id : 6780949599 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct order of sentence parts which gives meaningful sentence

The plan / by the engineer / yesterday itself / was finalized.

A B C D

Options :

1. ADBC
2. ABDC
3. ABCD
4. BCDA

Question Number : 194 Question Id : 6780949600 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct order of sentence parts which gives meaningful sentence

Students / the classes regularly / should attend / of engineering.

A B C D

Options :

1. ABCD
2. DACB
3. ADCB
4. ADBC

Question Number : 195 Question Id : 6780949601 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct order of sentence parts which gives meaningful sentence

praying lips / hands / are better than / helping

A B C D

Options :

1. ADCB
2. DBCA
3. DBAC
4. BCDA

Question Number : 196 Question Id : 6780949602 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the mood of the following sentence:

“Shall we come home for breakfast, madam?”

Options :

1. Requesting
2. Seeking permission
3. commanding
4. apologizing

Question Number : 197 Question Id : 6780949603 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the mood of the following sentence:

“Excuse me if I am rude, but the arrangements are poor.”

Options :

1. Requesting
2. Seeking permission
3. commenting

4. apologizing

Question Number : 198 Question Id : 6780949604 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the mood of the following sentence:

“Divya, your dance was marvelous!”

Options :

1. Commenting
2. Complementing
3. commanding
4. Criticizing

Question Number : 199 Question Id : 6780949605 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the mood of the following sentence:

“Could you repeat what you said again, please?”

Options :

1. Requesting
2. Seeking permission
3. commanding
4. apologizing

Question Number : 200 Question Id : 6780949606 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the mood of the following sentence:

“I know I have committed a mistake. Sorry, I should not have done it.”

Options :

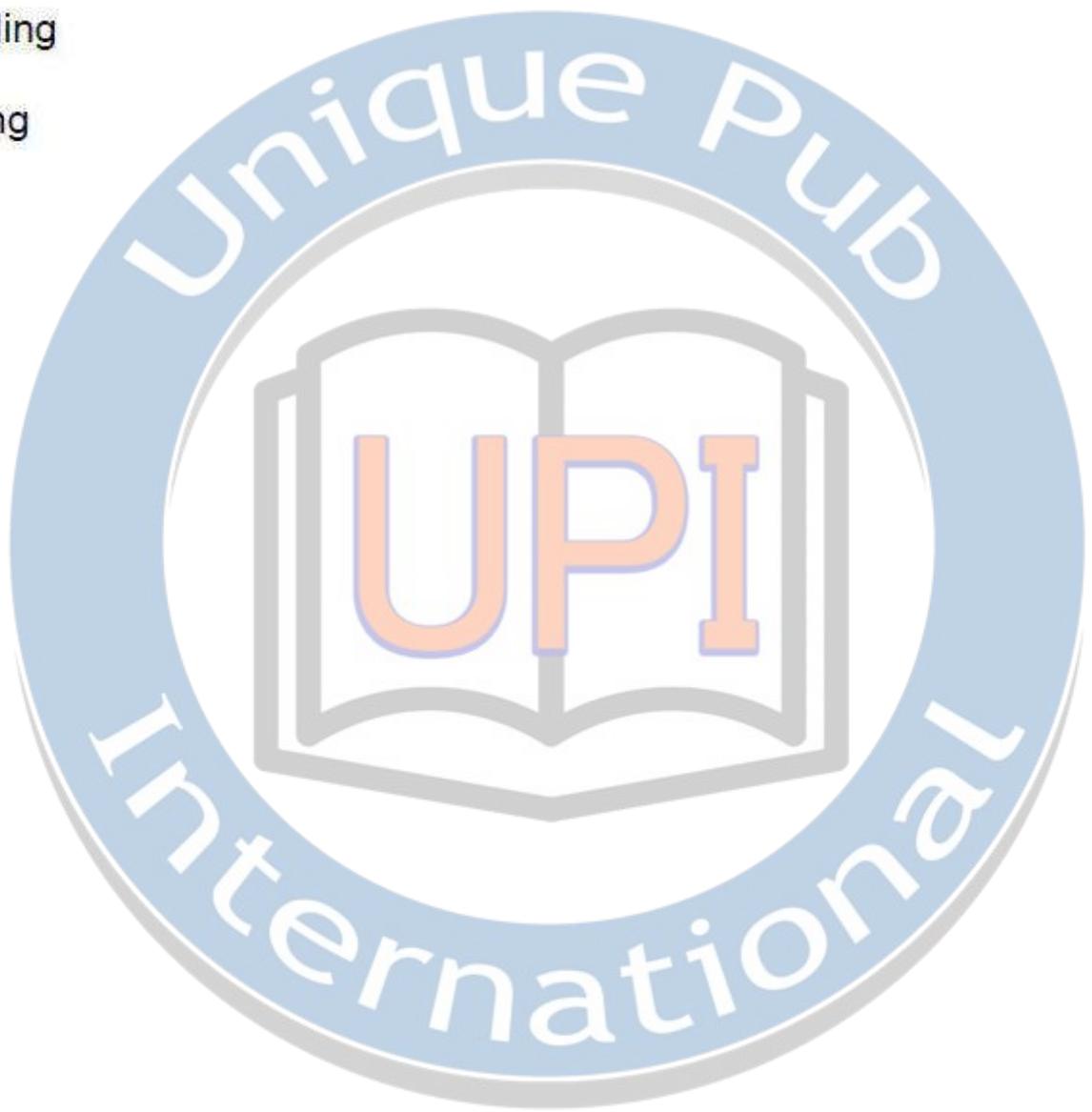
1. Commenting
2. appreciating

commanding

3.

apologizing

4.



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