Question Paper Name: BSc Mathematics
Subject Name: BSc Mathematics

Mathematics

Number of Questions: 100
Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 67809416619 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If sin x is an integrating factor of the differential equation dy/dx +Py = Q, then P is

Options :

1. log sin x

2. cot x

3. sin x

4. log cosx

Question Number : 2 Question Id : 67809416620 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation (x+y)(dx-dy) = dx−dy

Options :

1. $x-y = ce^{x-y}$

2. x-y = c

3. $x+y = xy\ e^{x-y}$

4. x+y =c

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Which of the following is a Clairut's equation? [ ]

Options :

1. $y = Px - o(P)$

2. $dx/P = dy/Q = dz/R$

3. $dy/x - Py = Q$

4. $y = Px - Q$

Question Number : 4 Question Id : 67809416622 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The integrating factor of $x^2y\,dx - (x^3 + y^3)\,dy = 0$ which makes the equation exact is

Options :

1. $\frac{-1}{y^4}$

2. $\frac{1}{y^4}$

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

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

Question Number : 5 Question Id : 67809416623 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The degree of $y = \cos(dy/dx)$ is

Options :

1. 0

2. 1

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4. Undefined

Question Number : 6 Question Id : 67809416624 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $p^2 - 2p\cosh x + 1 = 0$ is

Options :

1. $(y - x - c)(y + x - c) = 0$

2. $(y + x - c)(y + 2x - c) = 0$

3. $(y - e^x - c)(y + e^{-x} - c) = 0$

4. $(y + e^{-x} - c)(y + e^x + c) = 0$

Question Number : 7 Question Id : 67809416625 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $\frac{dy}{dx} - \frac{dx}{dy} = \frac{x}{y} - \frac{y}{x}$ is

Options :

1. $(xy - c)(x^2 - y^2 - c) = 0$

2. $(x - y - c)(x^2 - y^2 - c) = 0$

3. $(x + y - c)(x^2 - y^2 - c) = 0$

4. $(x + y - c)(x^2 + y^2 - c) = 0$

Question Number : 8 Question Id : 67809416626 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the equation $p = \sin(y - xp)$, $p = \frac{dy}{dx}$ is

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1.

2. $y = cx + \sin^{-1} c$

3. $xy = c\,y + x\ \sin^{-1} c$

4. $x = c\,y + \cos^{-1} c$

Question Number : 9 Question Id : 67809416627 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One of the integral solutions of the equation $\frac{dx}{x} = \frac{dy}{z} = \frac{dz}{y}$ is

Options :

1. $y^2 - z^2 = c$

2. $x^2 - y^2 = c$

3. $z^2 - x^2 = c$

4. $y^2 + z^2 = c$

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Question Number : 10 Question Id : 67809416628 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} + y = 0$

Options :

1. $y = e^{x/2}(c_1 \cos\frac{\sqrt{3}x^2}{2} + c_2 \sin\frac{\sqrt{3}x^2}{2})$

2. $y = e^{-x^2/2}(c_1 \cos\frac{\sqrt{3}x}{2} + c_2 \sin\frac{\sqrt{3}x}{2})$

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3. $y = e^{-x/2}(c_1 \cos\frac{\sqrt{3}x}{2} + c_2 \sin\frac{\sqrt{3}x}{2})$

4. $y = e^{-x/2}(c_1 \cos\frac{\sqrt{3}x}{2} + c_2 \sin\frac{\sqrt{3}x}{2})$

Question Number : 11 Question Id : 67809416629 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The C.F. of $(D^3-D)y = \sin x$ is

Options :

1. $a+bx+ce^x$

2. $a+be^x+ce^{-x}$

3. $a+be^x+cxe^{-x}$

4. $ax+be^x+ce^{-x}$

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Question Number : 12 Question Id : 67809416630 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The homogeneous linear differential equation whose auxiliary equation has roots 1. -1 is

Options :

1. $x^2y_2+xy_1 = 0$

2. $x^2y_2+xy_1 + y_1= 0$

3. $x^2y_2-xy_1 - y_1= 0$

4. $x^2y_2+xy_1 - y_1= 0$

Question Number : 13 Question Id : 67809416631 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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The particular integral of $\frac{1}{D-3}(x^2+1)=$ 13

Options :

1. $e^{4x}(x-1)$

2. $e^{-4x}(x-1)$

3. $e^{4x}(x+1)$

4. $e^{-4x}(x+1)$

Question Number : 14 Question Id : 67809416632 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $(D^3+4D)\,y=5$ is

Options :

1. $y=c_1+c_2\cos 2x+c_3\sin 2x+\frac{5x}{4}$

2. $y=c_1+c_2\cosh 2x+c_3\sinh 2x+\frac{5x}{4}$

3. $y=c_1\cos 2x+c_2\sin 2x+\frac{5x^2}{4}$

4. $y=c_1+c_2\cosh 2x+c_3\sinh 2x+\frac{5x^2}{4}$

Question Number : 15 Question Id : 67809416633 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is equal to $\frac{1}{D-2}(2x^2)$?

Options :

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1. $\log x - x + \frac{x^2}{2}$

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

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

4. $\log x + x + \frac{x^2}{2}$

Question Number : 16 Question Id : 67809416634 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Particular integral of $(D-1)^2 y = e^x \sec^2 x \tan x$ is [ ]

Options :

1. $e^x(\tan x - x)$

2. $\frac{e^x}{2}(\tan x - x)$

3. $e^x \tan x$

4. $\frac{e^x}{2}\tan x$

Question Number : 17 Question Id : 67809416635 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Solution of $(D^2 - 3D + 2)y = e^{3x}$ is

Options :

1. $e^x(\tan x - x)$

2. $\frac{e^x}{2}(\tan x - x)$

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4. $\frac{e^x}{2}\tan x$

Question Number : 18 Question Id : 67809416636 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \emptyset(x)$ is a particular solution of $y'' + (\sin x)y' + 2y = e^x$ and $y = \psi(x)$ is a particular solution of $y'' + (\sin x)y' + 2y = \cos 2x$ then particular solution of $y'' + \sin x\, y' + 2y = e^x + 2\sin^2 x$ is given by

Options :

1. $\phi(x) - \psi(x) + \frac{1}{2}$

2. $\psi(x) - \phi(x) + \frac{1}{2}$

3. $\phi(x) - \psi(x) + 1$

4. $\psi(x) - \phi(x) + 1$

Question Number : 19 Question Id : 67809416637 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Complementary function of $(D^4 - a^4)\, y = e^x$ is [ ]

Options :

1. $c_1 e^{ax} + c_2 e^{-ax} + c_3 \cos ax + c_4 \sin ax$

2. $c_1 e^{-ax} + c_2 e^{ax} + c_3 e^{ax} + c_4 \cos ax$

3. $c_1 e^{-ax} + c_2 e^{ax}$

4. $c_1 e^{2x} + c_2 e^{3x} + c_3 \cos ax - c_4 \sin ax$

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A particular integral of $\frac{d^2y}{dx^2} - (a + b)\frac{dy}{dx} + aby = Q(x)$ is [ ]

Options :

1. $e^{ax} \int\left\{e^{(a-b)x}\left(Qe^{bx}dx\right)\right\}dx$

2. $e^{ax} \int\left\{e^{(b-a)x}\left(Qe^{-bx}dx\right)\right\}dx$

3. $e^{ax} \int Q\, e^{bx}dx$

4. $e^{-ax} \int\left\{e^{(b-a)x}\left(Qe^{-bx}dx\right)\right\}dx$

Question Number : 21 Question Id : 67809416639 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The remainder obtained by dividing 1!+2!+3!.....+100! by 24 is

Options :

1. 9

2. 3

3. 0

4. 1

Question Number : 22 Question Id : 67809416640 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If * is a binary operation in A then [ ]

Options :

1. A is closed under *

2. A is not closed under *

3. A is not closed under +

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Question Number : 23 Question Id : 67809416641 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A monoid is always a [ ]

Options :

1. group

2. commutative group

3. non abelian group

4. groupoid

Question Number : 24 Question Id : 67809416642 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let G denote the set of all n x n non-singular matrices with rational numbers as entries. Then under multiplication. G is a/an [ ]

Options :

1. subgroup

2. Finite abelian group

3. Infinite. non abelian group

4. group

Question Number : 25 Question Id : 67809416643 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The product of two odd permutations

Options :

1. does not exist

2. is an Odd permutation

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is not a permutation

4.

Question Number : 26 Question Id : 67809416644 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

We can express the permutation $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 & 5 & 2 & 4 & 3 & 1 \end{pmatrix}$ as a disjoint cycle like [ ]

Options :

1. $(1,6)(2,5,3)$

2. $(1,5)(3,1,2)$

3. $(6,1)(1,3,1)$

4. $(1,3)(5,3,2)$

Question Number : 27 Question Id : 67809416645 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If G is an infinite cyclic group. then G has exactly [ ]

Options :

1. 2 generators

2. 4 generators

3. 1 generator

4. 6 generators

Question Number : 28 Question Id : 67809416646 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a and b are any two elements of group G and H is any subgroup of G and if $a \in bH$ then

Options :

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2. $H a \subset H b$

3. $a H = b H$

4. $a H \subset b H$

Question Number : 29 Question Id : 67809416647 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is correct ?

Options :

1. Every homomorphism is an isomorphism.

2. Every isomorphism is a homomorphism.

3. Homomorphism and isomorphism are not related

4. Group of isomorphisms are homomorphisms.

Question Number : 30 Question Id : 67809416648 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If N is a normal subgroup of a group G. and $a \in G$ then

Options :

1. $Na \cap aN=\phi$

2. $Na=aN$

3. $Na \neq aN$

4. $Na=a$

Question Number : 31 Question Id : 67809416649 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$o = x^2+y^2+z^2-3xyz$ then curl(grad o) is

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2. $6x+6y+6z$

3. $x+y+z$

4. 0

Question Number : 32 Question Id : 67809416650 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\bar{r} = xi+yj+zk$ then div $(\bar{r}) =$

Options :

1. 3

2. 2

3. 1

4. $\bar{0}$

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Question Number : 33 Question Id : 67809416651 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The divergence of $f = 3xz\,i+2xy\,j-yz^2k$ at the point (1, -1, 1) is

Options :

1. 3

2. 9

3. 7

4. 5

Question Number : 34 Question Id : 67809416652 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\bar{V} = (xyz)i+(3x^2y)j+(xz^2-y^2z)k$ at the point (2, -1, 1), then curl $(\bar{V}) =$

Options :

1. $2i+3j+14k$

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3. $2i-3j+14k$

4. $2i+3j-14k$

Question Number : 35 Question Id : 67809416653 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of p for which the vector field $\overline{F} = (x+3y)\,\bar{i} + (y-2z)\,\bar{j} + (x+pz)\,\bar{k}$ is solenoidal is

Options :

1. 2

2. -2

3. 1

4. $2/3$

Question Number : 36 Question Id : 67809416654 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\overline{F}$ is a solenoidal vector then $\text{curl}(\text{curl}\,\overline{F}) =$

Options :

1. $\nabla^2\overline{F}$

2. 0

3. $-\nabla^2\overline{F}$

4. F

Question Number : 37 Question Id : 67809416655 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\varphi = x^2 + y^2 + z^2 - 3xyz$ then $curl\ (grad\ \varphi) =$

Options :

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2. $x\,\bar{i} + y\,\bar{j} + z\,\bar{k}$

3. $(x-y)\,\bar{i} + (y-z)\,\bar{j} + (z-x)\,\bar{k}$

4. $xy\,\bar{i} + yz\,\bar{j} + zx\,\bar{k}$

Question Number : 38 Question Id : 67809416656 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If f, g are two scalar point functions then grad (fg) is

Options :

1. grad f + grad g

2. f grad g + g grad f

3. grad f x grad g

4. f grad g x g grad f

Question Number : 39 Question Id : 67809416657 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\nabla^2(\log r) =$

Options :

1. $1/r^2$

2. $x+y+z$

3. $x^2+y^2+z^2$

4. $1/r$

Question Number : 40 Question Id : 67809416658 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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$[\nabla f, \nabla g, \nabla h] =$

Options :

1. -1

2. 1

3. ± 1

4. 0

Question Number : 41 Question Id : 67809416659 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $F(t) = ti+3t^2j$. then $\int_1^2 F(t)dt =$

Options :

1. $2i+3j+k$

2. $2i+3/2\ j$

3. $i+j$

4. $3/2\ i+7j$

Question Number : 42 Question Id : 67809416660 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\iint_S \overline{F}.\dot{n}\ ds = \iint_S \overline{F}.d\,\overline{s} = \iint_R \overline{F}.\dot{n}\frac{dxdy}{|\dot{n}.\overline{K}|}$ then R is

Options :

1. projection of S in the zx plane

2. projection of S in the xy plane

3. projection of S in the yz plane

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Question Number : 43 Question Id : 67809416661 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\oint_c \bar{r}.\, d\bar{r} =$

Options :

1. 1

2. 2

3. 0

4. -1

Question Number : 44 Question Id : 67809416662 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\bar{F}$ is any vector over the sphere $s = x^2 + y^2 + z^2 = 1$ then $\iint_S$ curl $\bar{F}.\, d\bar{s}$ is

Options :

1. 1

2. 0

3. x

4. 2

Question Number : 45 Question Id : 67809416663 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\bar{F} = xi+yj+zk$ and S is the sphere $x^2+y^2+z^2 = 1$ then $\int_s \overline{F} d\bar{s} =$

Options :

1. 0

2. π

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4. 3π

Question Number : 46 Question Id : 67809416664 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If S is any closed surface enclosing a volume V, then $\int_S \bar{r}.\bar{n}\, ds =$

Options :

1. $4V$

2. $3V$

3. $2V$

4. V

Question Number : 47 Question Id : 67809416665 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The necessary and sufficient condition that the line integral $\int_c A.dr = 0$ for

every closed curve c is that

Options :

1. div A=0

2. div A≠0

3. curl A=0

4. curlA≠0

Question Number : 48 Question Id : 67809416666 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of the line integral $\int grad(x+y-z)d\bar{r}$ from (0.1.-1) to (1.2.0) is

Options :

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2. 0

3. 2

4. 3

Question Number : 49 Question Id : 67809416667 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\iint_S xdydx + ydzdx + zdxdy$ where $S: x^2 + y^2 + z^2 = a^2$ is _____

Options :

1. $4\pi a$

2. -4π

3. $4\pi a^3$

4. π

Question Number : 50 Question Id : 67809416668 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\overline{F} = a\bar{x}\bar{i} + by\bar{j} + cz\bar{k}$ a, b, c being constants then $\iint_S \overline{F}.\overline{n}\, ds$ is

Options :

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

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

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

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

Question Number : 51 Question Id : 67809416669 Display Question Number : Yes Single Line Question Option : No Option

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Options :

1. $ax+by+cz+d=0$

2. $by+cz+d=0$

3. $ax+by+d=0$

4. $ax+cz+d=0$

Question Number : 52 Question Id : 67809416670 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The planes $ax+by+cz+d=0$ and $a^1x+b^1y+c^1z+d^1=0$ are parallel. if

Options :

1. $\frac{a}{a^1} = \frac{b}{b^1} = \frac{c}{c^1}$

2. $\frac{a}{a^1} = \frac{b}{b^1} = \frac{d}{d^1}$

3. $aa^1+bb^1+cc^1=0$

4. $aa^1+bb^1+cc^1+dd^1=0$

Question Number : 53 Question Id : 67809416671 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two lines. which do not lie in the same plane. are called

Options :

1. parallel

2. intersecting

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4. skew

Question Number : 54 Question Id : 67809416672 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the plane passing through the point P(2. 3. -1) at right angle to OP is

Options :

1. 2x+y-z=14

2. 2x+y-z= -14

3. 2x-y+z=14

4. 2x-y-z= -14

Question Number : 55 Question Id : 67809416673 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The distance between the parallel lines $ax + by + cz + d_1 = 0,\ ax + by + cz + d_2 = 0$ is

Options :

1. $\frac{|d_1^2 - d_2^2|}{a^2+b^2+c^2}, d_1, d_2 < 0$

2. $\frac{|d_1 - d_2|}{\sqrt{a^2+b^2+c^2}}, d_1 < 0, d_2 < 0$

3. $\frac{|d_1 + d_2|}{\sqrt{a^2+b^2+c^2}}, d_1, d_2 < 0$

4. $\frac{|d_1 + d_2|}{\sqrt{a^2-b^2+c^2}}, d_1, d_2 < 0$

Question Number : 56 Question Id : 67809416674 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the sphere passing through (0. 0. 0). (a. 0. 0). (0. b. 0). (0. 0. c) is

Options :

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2. $x^2+y^2+z^2-2ax-2by-2cz=0$

3. $x^2+y^2+z^2-ax-by-cz=0$

4. $x^2+y^2+z^2+ax+by+cz=0$

Question Number : 57 Question Id : 67809416675 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two spheres of radii 3 and 4 units cut orthogonally. then the radius of the common circle is

Options :

1. $\frac{5}{12}$

2. $\frac{12}{5}$

3. $\frac{13}{4}$

4. $2\sqrt{3}$

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Question Number : 58 Question Id : 67809416676 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x^2 + y^2 + z^2 - a^2 = 0$ is a sphere then the pole of the plane $lx + my + nz = p \quad (p \neq 0)$ is

Options :

1. $\left(\frac{a^2l}{p}, \frac{a^2m}{p}, \frac{a^2n}{p}\right)$

2. $\left(-\frac{a^2l}{p}, \frac{a^2m}{p}, \frac{a^2n}{p}\right)$

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3. \ P P P /

4. $\left(\frac{a^2l}{p}, \frac{a^2m}{p}, -\frac{a^2n}{p}\right)$

Question Number : 59 Question Id : 67809416677 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of a sphere of radius r which touches the three co-ordinate axes is

Options :

1. $x^2+y^2+z^2+\sqrt{2}x+\sqrt{2}y+\sqrt{2}z+r^2=0$

2. $2(x^2+y^2+z^2)+\sqrt{2}x+\sqrt{2}y+\sqrt{2}z+r^2=0$

3. $2(x^2+y^2+z^2)+r\sqrt{2}x+r\sqrt{2}y+r\sqrt{2}z+r^2=0$

4. $x^2+y^2+z^2+r\sqrt{2}x+r\sqrt{2}y+r\sqrt{2}z+r^2=0$

Question Number : 60 Question Id : 67809416678 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the tangent line from the point (3, 1, -1) to the sphere

$x^2 + y^2 + z^2 - 3x + 5y + 7 = 0$ is

Options :

1. $\sqrt{14}$

2. 14

3. $\sqrt{12}$

4. 12

Question Number : 61 Question Id : 67809416679 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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Options :

1. lower bound

2. limit bound

3. infimum

4. supremum

Question Number : 62 Question Id : 67809416680 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. 1

2. e

3. $1/e$

4. $\sqrt{e}$

Question Number : 63 Question Id : 67809416681 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sequence converges if

Options :

1. bounded

2. bounded above

3. bounded below

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7.

Question Number : 64 Question Id : 67809416682 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The radius of convergence of $\sum n^m x^n$ is

Options :

1. 0

2. 1

3. ∞

4. 11

Question Number : 65 Question Id : 67809416683 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $a<0$. then $f(x)=e^{ax}+e^{-ax}$ is decreasing for

Options :

1. $x>0$

2. $x<0$

3. $x>1$

4. $x<1$

Question Number : 66 Question Id : 67809416684 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$f(x) = |x|$ is

Options :

1. continuous at $x = 0$

2. not continuous

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continuous for all values of x

4.

Question Number : 67 Question Id : 67809416685 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of c in Cauchy's Mean value theorem for $f(x) = \sqrt{x}$, $g(x) = \frac{1}{\sqrt{x}}$ in [a, b] is

Options :

1. $\frac{a}{2}$

2. $\frac{b}{2}$

3. $\frac{a+b}{2}$

4. $\sqrt{ab}$

Question Number : 68 Question Id : 67809416686 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The derivative of $x|x|$ for $x \varepsilon R$ is

Options :

1. $2x$

2. $-2x$

3. $2|x|$

4. x

Question Number : 69 Question Id : 67809416687 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If f is derivable at C, $f(c) \neq 0$ and $\log|f|$ is derivable at C, then $\frac{f'(c)}{f(c)} =$

Options :

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2. $(\log|f|)'(c)$

3. 0

4. $\log|f|$

Question Number : 70 Question Id : 67809416688 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$f(x) = \tan x$ is differentiable at every point in

Options :

1. R

2. $R - \{(2n + 1)\,\pi/2\}$

3. $R - \{n\pi/n\varepsilon z\}$

4. R^T

Question Number : 71 Question Id : 67809416689 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If f: [a , b] → R and M=sup f, m=inf f . then

Options :

1. $m(b-a) \leq \int_a^b f \leq M(b-a)$

2. $m(b-a) \geq \int_a^b f \leq M(b-a)$

3. $M(b-a) \leq \int_a^b f \leq M(b-a)$

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$m(c - d) = \int_a^{} f = m(c - d)$

4.

Question Number : 72 Question Id : 67809416690 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If f be integrable over E, If Aand B are disjoint measurable sets contained in E ,

then $\int_{A \cup B} f =$

Options :

1. $\int_A f - \int_B f$

2. $\int_A f + \int_B f$

3. 0

4. $\int_A f \pm \int_B f$

Question Number : 73 Question Id : 67809416691 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f \varepsilon R[a, c]$, $f \varepsilon R[c, b]$and $a < c < b$, then

Options :

1. $f \varepsilon R[c, c]$

2. $f \notin R[a, b]$

3. $f \varepsilon R[a, b]$

4. $f \varepsilon [a, b]$

Question Number : 74 Question Id : 67809416692 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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$1+|x|$

Options :

1. R

2. $R-\{0\}$

3. R^2

4. $(-\infty,\ \infty)$

Question Number : 75 Question Id : 67809416693 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the ring R is finite and commutative with unit element then

Options :

1. Every prime ideal is a minimal ideal

2. Every ideal is maximal ideal

3. Every maximal ideal is not a prime ideal

4. Every prime ideal is a maximal ideal

Question Number : 76 Question Id : 67809416694 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cardinality of a finite integral domain can not be

Options :

1. 5

2. 15

3. 2

4. 24

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Orientation : Vertical

Let $5Z = \{ 5x : x \in Z \}$ be the ring of 5 multiples of integers . Then the characteristic of $5Z$ is

Options :

1. 5

2. 4

3. 1

4. 0

Question Number : 78 Question Id : 67809416696 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x)$ and $g(x)$ are two polynomials. then

Options :

1. $\deg(f(x)g(x)) \leq \deg f(x).\ g(x) \neq 0$

2. $\deg(f(x)g(x)) \geq \deg f(x).\ g(x) \neq 0$

3. $\deg(f(x)g(x)) \geq \deg f(x).\deg g(x).\ g(x) \neq 0$

4. $\deg(f(x)g(x)) \geq \deg f(x) - \deg g(x).\ g(x) \neq 0$

Question Number : 79 Question Id : 67809416697 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The polynomial $f(x) = x^5 + 5$ is

Options :

1. Irreducible over C

2. Irreducible over R

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4. Not irreducible over Q

Question Number : 80 Question Id : 67809416698 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The set of all $\alpha \in R$ for which the vectors $(1, \alpha, 0)$, $(0, \alpha^2, 1)$,$(0, 1, \alpha)$

are linearly independent in R^3 is

Options :

1. $\{\alpha \in R : \alpha = 0\}$

2. $\{\alpha \in R : \alpha \neq 0\}$

3. $\{\alpha \in R : \alpha \neq 1\}$

4. $\{\alpha \in R : \alpha \neq -1\}$

Question Number : 81 Question Id : 67809416699 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two vectors are linearly dependent then one of them is the _____ of the other

Options :

1. Scalar multiple

2. Vector multiple

3. Multiple

4. finite basis

Question Number : 82 Question Id : 67809416700 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If dim V=n, then n+1 vectors in V are

Options :

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2. Linear independent

3. Multiples of V

4. Linearly dependent

Question Number : 83 Question Id : 67809416701 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Any two bases of finite dimensional vector space V have ____number of elements.

Options :

1. Same

2. Finite

3. Infinite

4. 0

Question Number : 84 Question Id : 67809416702 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let W be a subspace of a Finite dimensional vector space V. then $\dim \frac{V}{W} =$

Options :

1. dim V-dimW

2. dim V

3. dimW-dimV

4. dimV−dimW

Question Number : 85 Question Id : 67809416703 Display Question Number : Yes Single Line

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Options :

1. Linearly independent over F

2. Linearly dependent over F

3. Either independent or dependent

4. Polynomials on F

Question Number : 86 Question Id : 67809416704 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let A be a m x n matrix over F. then

Options :

1. Row rank of A=column rank of A

2. Row rank of A≠ column rank of A

3. No relation between rows and columns

4. Row rank of A=0

Question Number : 87 Question Id : 67809416705 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let X and W be subspaces of V .Then A(X+W)=

Options :

1. $A(x) \cap A(w)$

2. $A(x) \cup A(w)$

3. A(X)+A(W)

4. A(X)-A(W)

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Orientation : Vertical

The nullity of the transformation $T: R^2 \to R^3$ defined by $T(x, y) = (x + y, x - y, y)$ is

Options :

1. 1

2. 2

3. 0

4. 3

Question Number : 89 Question Id : 67809416707 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a linear transformation $T : R^2 \to R^2$ satisfies

$T(2, 5) = (1, 0)$, $T(1, 3) = (0, 1)$ then $T(1, 1) =$

Options :

1. $(4, 3)$

2. $(4, -3)$

3. $(-2, -3)$

4. $(2, -3)$

Question Number : 90 Question Id : 67809416708 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If 'r' is a rank of the matrix $A_{m \times n}$ then the number of linearly independent

solutions of the linear system $AX = 0$ is

Options :

1. $n - r$

2. $n + r$

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4. 0

Question Number : 91 Question Id : 67809416709 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The transpose of a column matrix is a

Options :

1. Null matrix

2. Row matrix

3. Scalar matrix

4. Column matrix

Question Number : 92 Question Id : 67809416710 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A^t = -A$ then A is said to be

Options :

1. square matrix

2. skew symmetric

3. transpose

4. symmetric

Question Number : 93 Question Id : 67809416711 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The distinct Eigen values of the matrix $A = \begin{bmatrix} 1 & 1 & 0 \\ 1 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$ are

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2. 1 and 2

3. 0 and 2

4. 1 and −1

Question Number : 94 Question Id : 67809416712 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A necessary and sufficient condition that an n x n matrix A over a field F be diagonalizable is that

Options :

1. A has n linearly independent characteristic vectors in $V_n(F)$

2. A has n linearly dependent characteristic vectors in $V_n(F)$

3. A has n vectors in $V_n(F)$

4. A has n characteristic roots in $V_n(F)$

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Question Number : 95 Question Id : 67809416713 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A square matrix A and its transpose A^T have the

Options :

1. Same Eigen Values

2. Different Eigen Values

3. Different Eigen Vectors

4. Same Eigen vectors

Question Number : 96 Question Id : 67809416714 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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Options :

1. Equal values

2. absolute value one

3. Negative Eigen values

4. zero value

Question Number : 97 Question Id : 67809416715 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If α, β are two vectors in a unitary space then $\|\alpha + \beta\|^2 - \|\alpha - \beta\|^2 =$

Options :

1. $4 \operatorname{Re} < \alpha, \beta >$

2. $2 \operatorname{Re} < \alpha, \beta >$

3. $\operatorname{Re} < \alpha, \beta >$

4. 0

Question Number : 98 Question Id : 67809416716 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a n x n matrix A has n distinct eigen values , then A is

Options :

1. orthonormal basis

2. normal basis

3. Diagonalizable

4. basis

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If T is a normal, c is a characteristic value of T, and W is the characteristic space of c that is

W is the set of all solutions of $T\alpha=c\alpha$, then

Options :

1. Both W and W transpose are invariant under T

2. only W is invariant under T

3. Only W transpose is invariant under T

4. Either W or W transpose is invariant under T.

Question Number : 100 Question Id : 67809416718 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The product of two self adjoint operators on an inner product space is self adjoint.

if the two operators are

Options :

1. Closure

2. Additive

3. Associative

4. Commute

Analytical Ability

Number of Questions:	36
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 67809416719 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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correct option to answer the question.

If cost price of an article is 120 rupees, then its selling price is

I. Demand is more for that Article.

II. Percentage of profit is 20%.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 102 Question Id : 67809416720 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

<u>Directions</u>: A question is 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 two- digit number?

I. The sum of the two digits is 6.

II. The difference between the two digits is 2.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 103 Question Id : 67809416721 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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correct option to answer the question.

What are the dimensions of a rectangle?

I. Its area is 12 sq.meters.

II. Its diagonal is 5 meters.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 104 Question Id : 67809416722 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

How old is the son?

I. Mother was 22 years when the son was born.

II. Present age of mother is 60 years.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 105 Question Id : 67809416723 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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correct option to answer the question.

Equation of the straight line is

I. It is passing through the Origin.

II. Slope of the line is $\sqrt{3}$.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 106 Question Id : 67809416724 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Directions: A question is 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 volume of the cone?

I. The height of the cone is 10cm.

II. The area of its base is 126sq.cm.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 107 Question Id : 67809416725 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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correct option to answer the question.

Will it be a Wednesday tomorrow?

I. It is not Tuesday today.

II. Coming Wednesday is holiday.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 108 Question Id : 67809416726 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

<u>Directions</u>: A question is 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 cost of painting a room which is of the form of a cube?

I. The base area of the room is 144 sq.ft.

II. The room has one door of size 6' x 4' and has no windows.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 109 Question Id : 67809416727 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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correct option to answer the question.

What is the value of a ?

I. a+b=12

II. 3a+3b=36

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 110 Question Id : 67809416728 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

<u>Directions</u>: A question is 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 present age of A?

I. A was married in his 25th year

II. A was central government employee and retired in 1998 after completing 60 years.

Options :

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

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

3. Data given in I and II put together is sufficient to answer the question

4. Data given in I and II is not sufficient to answer the question

Question Number : 111 Question Id : 67809416729 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series ABC, ZY

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1. [illegible]

2. VUT

3. UTS

4. UVW

Question Number : 112 Question Id : 67809416730 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **ZYX, WVU,_____,QPO, NML, KJI**

Options :

1. SRT

2. TSR

3. TRS

4. RST

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Question Number : 113 Question Id : 67809416731 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **3, 15, 35, 63,_____,143**

Options :

1. 80

2. 99

3. 120

4. 131

Question Number : 114 Question Id : 67809416732 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **1, 16, 81, _____ , 625**

Options :

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2. 169

3. 484

4. 225

Question Number : 115 Question Id : 67809416733 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: 36:5::81:_____

Options :

1. 9

2. 8

3. 7

4. 11

Question Number : 116 Question Id : 67809416734 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **EJO, DHL, CFI, BDF,_____**

Options :

1. ABC

2. ACE

3. ABD

4. ABE

Question Number : 117 Question Id : 67809416735 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: 2, 6, 12, 20_____,42

Options :

1. 28

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3. 32

4. 30

Question Number : 118 Question Id : 67809416736 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **V, S, P, M,_____ G**

Options :

1. L

2. K

3. J

4. I

Question Number : 119 Question Id : 67809416737 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **DFI, EGJ, FHK,_____**

Options :

1. GIM

2. GIL

3. HJN

4. HIM

Question Number : 120 Question Id : 67809416738 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the right option to fill up the blank in the series: **0, 7, 26, 63, _____ , 215, 342**

Options :

1. 126

2. 124

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4. 127

Question Id : 67809416739 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (121 to 127)

The following table gives the details of the production of five different types of cars A,B,C,D and E over the years from 1996 to 2001. Use the data to answer the question:

Type → / Year↓	A	B	C	D	E	Total
1996	18	23	21	12	40	114
1997	20	18	24	14	35	111
1998	18	21	20	18	42	119
1999	22	26	19	21	44	132
2000	23	30	22	25	48	150
2001	28	34	26	30	52	170

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Sub questions

Question Number : 121 Question Id : 67809416740 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In What Type of Cars the percentage increase in production is more from 1998 to 1999 ?

Options :

1. B

2. D

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4. A

Question Number : 122 Question Id : 67809416741 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In 1999, which type of Cars constitute approximately 20% of the total number of cars produced in that year?

Options :

1. E

2. B

3. C

4. D

Question Number : 123 Question Id : 67809416742 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Approximate percentage of increase in the total production of cars in the year 2001 over the year 1996 is?

Options :

1. 40%

2. 45%

3. 50%

4. 55%

Question Number : 124 Question Id : 67809416743 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The percentage increase in the Production of cars D from 1996 to 1998 is

Options :

1. 40%

2. 45%

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4. 55%

Question Number : 125 Question Id : 67809416744 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following years the number of cars of type B produced are exactly 20% of the Total cars produced?

Options :

1. 1997

2. 2000

3. 1999

4. 1998

Question Number : 126 Question Id : 67809416745 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the year 2001, the total number of cars produced is _____ times the number of type B cars produced.

Options :

1. 5

2. 4

3. 2

4. 8

Question Number : 127 Question Id : 67809416746 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of Type C cars produced in 1998 is _____ of the number of type E cars produced in 1996.

Options :

1. 50%

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3. 40%

4. 55%

Question Id : 67809416747 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Numbers : (128 to 130)

Note : In a code the r^{th} letter is shifted to $(27 - 2r)^{th}$

letter for r = 1, 2, ...13, the fourteenth letter is

shifted to 26^{th} letter and, for r = 15, 16, ...26,

the r^{th} letter is shifted to (2r – 28)th letter.

For decoding the inverse process of the above is followed .

Using this coding and decoding , answer the question:

Sub questions

Question Number : 128 Question Id : 67809416748 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which letter is coded as P?

Options :

1. J

2. D

3. L

4. W

Question Number : 129 Question Id : 67809416749 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which letter is coded as A?

Options :

1. Y

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3. B

4. M

Question Number : 130 Question Id : 67809416750 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the code for INDICA?

Options :

1. IUMPIL

2. IUPMIL

3. IUPLIM

4. IUPILM

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Question Id : 67809416751 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (131 to 135)

Directions :In a code language TANK is written as SZOL and FRIEND is written as EQHFOE.

Using the process of coding answer the question:

Sub questions

Question Number : 131 Question Id : 67809416752 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The code for JNTU is

Options :

1. IMSV

2. IMUV

3. INTU

4. INSV

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The code for ZENITH is

Options :

1. YDMJUI

2. ADMJUI

3. YFMJUI

4. ADMJUG

Question Number : 133 Question Id : 67809416754 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The code for PIPE is

Options :

1. QJOD

2. OHOD

3. OHQF

4. QJQF

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Question Number : 134 Question Id : 67809416755 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which word is coded as ECET?

Options :

1. FDDS

2. FDFU

3. DBFU

4. FDEU

Question Number : 135 Question Id : 67809416756 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the code for NUMBER?

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1.

2. MTLCFS

3. TLMFSC

4. MLTCFS

Question Number : 136 Question Id : 67809416757 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If 1st January of 2018 is Monday, then what is the day of 1st January 2019?

Options :

1. Sunday

2. Monday

3. Tuesday

4. Wednesday

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Question Number : 137 Question Id : 67809416758 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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 : 138 Question Id : 67809416759 Display Question Number : Yes Single Line Question Option : No Option

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Saturday in that month, will be

Options :

1. 16

2. 17

3. 18

4. 19

Question Number : 139 Question Id : 67809416760 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. Thursday

2. Monday

3. Friday

4. Wednesday

Question Number : 140 Question Id : 67809416761 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Person walks facing North 10 m and then he turns left and walks 5 m. He again turns left and walks 10 m. How far is he from his original position and towards which direction?

Options :

1. 20 m South

2. 15 m West

3. 10 m East

4. 5 m West

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Orientation : Vertical

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 : 67809416763 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a row Ajith is 16^{th} from left and 18^{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 : 67809416764 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. 5:1

2. 1:2

3. 3:4

4. 1:3

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Orientation : Vertical

A man walks 6 km to the east and then turns to the south 2 km.Again he turns to the east and walks 2 km. Next he turns northwards and walks 8 km. How far is he now from his starting point?

Options :

1. 18 km

2. 10 km

3. 16 km

4. 12 km

Question Number : 145 Question Id : 67809416766 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Number of 3's that preceded by 5 but not followed by 2 in the following sequence of digits is 3147531245321887538162537531675324

Options :

1. 7

2. 5

3. 4

4. 6

Question Number : 146 Question Id : 67809416767 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of two numbers is 4:7. If 14 is added to each number then the ratio becomes 5:7 . Then the numbers are

Options :

1. 12. 21

2. 20. 35

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4. 24. 42

Question Number : 147 Question Id : 67809416768 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If January 1st falls on Saturday in a year , then the number of Saturdays in that year is

Options :

1. 52

2. 51

3. 54

4. 53

Question Id : 67809416769 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (148 to 150)

Directions: Read the following information carefully and answer the questions based on it.

I. Six friends namely Ramesh. Dinesh. Lokesh. Nilesh. Shailesh and Hitesh work in different companies namely P.Q.R.S.T and U and each one wears company sponsored different coloured tie i.e. Blue. Green. Pink. Yellow. Purple and Red though not necessarily in the same order.

II. The One Wearing blue Tie works in company S and the one wearing green tie works in company P.

III. Hitesh does not work in company R or T.

IV. Ramesh Wears pink tie and works in company Q.

V. Nilesh does not work in company T and Purple colour tie is not sponsored by company R.

VI. Company T does not sponsor Purple or Yellow Coloured tie and Lokesh works in company P.

Sub questions

Question Number : 148 Question Id : 67809416770 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following Colour of tie-Company-Person combination is correct?

Options :

1. Green-R-Nilesh

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3. Red-T-Dinesh

4. Yellow-Q-Sailesh

Question Number : 149 Question Id : 67809416771 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is correct?

Options :

1. Company U sponsors green Tie

2. Shailesh wears Red Tie

3. Nilesh works in Company T

4. Pink colour is sponsored by company Q.

Question Number : 150 Question Id : 67809416772 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following sequence of companies represent tie colours, Pink, Yellow, Green and Blue respectively?

Options :

1. QPRS

2. QRPS

3. PQRS

4. QSRP

Communicative English

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

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Question Number : 151 Question Id : 67809416773 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Whatever _____ little money she earns, she spends it on cosmetics.

Options :

1. a

2. an

3. the

4. no article required

Question Number : 152 Question Id : 67809416774 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

I have known him since he was _____ child.

Options :

1. a

2. an

3. the

4. no article required

Question Number : 153 Question Id : 67809416775 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

I never wanted to apply _____ a job in my uncle's company.

Options :

1. to

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3. for

4. on

Question Number : 154 Question Id : 67809416776 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

The collector was shocked _____ the rude behavior of the MLA.

Options :

1. at

2. by

3. over

4. on

Question Number : 155 Question Id : 67809416777 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Complete the sentence with the correct form of the verb from the given options:

I _____ him only once in 2010.

Options :

1. have met

2. had met

3. has met

4. met

Question Number : 156 Question Id : 67809416778 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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If you _____ me. I would have surely helped you.

Options :

1. have asked

2. had asked

3. asked

4. were asked

Question Number : 157 Question Id : 67809416779 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the right option to fill in the blank to change the given sentence from active voice into passive voice:

I did not ask him for any help in the examination hall.

He _____ by me for any help in the examination hall.

Options :

1. is not asked

2. has not been asked

3. had not been asked

4. was not asked

Question Number : 158 Question Id : 67809416780 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Neither the student nor the teacher _____ the answer to this question.

Options :

1. know

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3. are known

4. have known

Question Number : 159 Question Id : 67809416781 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

The fact that many engineering graduates are applying for clerical jobs _____ distressing.

Options :

1. are

2. is

3. were

4. have been

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Question Number : 160 Question Id : 67809416782 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct question tag for the following statement:

She speaks very good English.

Options :

1. isn`t it?

2. doesn`t she?

3. does she

4. is it

Question Number : 161 Question Id : 67809416783 Display Question Number : Yes Single Line Question Option : No Option

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Options :

1. wealth

2. waste water

3. contamination

4. influence

Question Number : 162 Question Id : 67809416784 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the synonym for the word 'eloquent':

Options :

1. courageous

2. timid

3. advantageous

4. fluent

Question Number : 163 Question Id : 67809416785 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the antonym for the word 'transparent':

Options :

1. remote

2. opaque

3. belligerent

4. rash

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Identify the antonym for the word '<u>bless</u>':

Options :

1. encourage

2. praise

3. curse

4. benefit

Question Number : 165 Question Id : 67809416787 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the one word substitute for the given expression:

a plamed route or journey

Options :

1. map

2. agenda

3. itinerary

4. reservation

Question Number : 166 Question Id : 67809416788 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct one word substitute for the given expression:

a person who dies for a noble cause

Options :

1. hero

2. sage

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4. martyr

Question Number : 167 Question Id : 67809416789 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

You must cultivate the habit of reading to _____ (rich) your vocabulary.

Options :

1. ill-

2. ell-

3. elll-

4. lll-

Question Number : 168 Question Id : 67809416790 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the right word:

The reason for the accident is the failure of the car`s _____.

Options :

1. breaks

2. brakes

3. breakings

4. bickering

Question Number : 169 Question Id : 67809416791 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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Big _____ farms employ full time veterinary doctors.

Options :

1. dreary

2. diary

3. dairy

4. drowsy

Question Number : 170 Question Id : 67809416792 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the right word:

My brother is working as a _____ engineer in L&T Company.

Options :

1. sight

2. site

3. slight

4. cite

Question Number : 171 Question Id : 67809416793 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the part of the sentence that has a mistake:

She is/ one of the best/ and the most beautiful/ actress in India.

1 2 3 4

Options :

1. 1

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3. 3

4. 4

Question Number : 172 Question Id : 67809416794 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the part of the sentence that has a mistake:

The Indian government is trying / since 1950 / to make India / industrially self-reliant.

1 2 3 4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 173 Question Id : 67809416795 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the part of the sentence that has a mistake:

I was sent/ out of the lab / because / I did not brought my record book.

1 2 3 4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 174 Question Id : 67809416796 Display Question Number : Yes Single Line

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As the crime was proved / beyond doubt / the judge ordered / that the accused be hung.

1 2 3 4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 175 Question Id : 67809416797 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the part of the sentence that has a mistake:

Although I have known him/ for a while./ I still cannot believe / how much stubborn he is.

1 2 3 4

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 176 Question Id : 67809416798 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct alternative to replace the *italicized and underlined part* to improve the Sentence:

The truth *have known*. further lying is useless.

Options :

1. was being known

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3. had been known

4. has been known

Question Number : 177 Question Id : 67809416799 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct alternative to replace the *italicized and underlined part* to improve the Sentence:

If you ask him, he *would help* you.

Options :

1. can help

2. could help

3. will help

4. should help

Question Number : 178 Question Id : 67809416800 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct alternative to replace the *italicized and underlined part* to improve the Sentence:

I *could not be able* come to Hyderabad last month owing to my indifferent health.

Options :

1. would not be able

2. could not

3. would not

4. should not be able

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Orientation : Vertical

Choose the correct alternative to replace the *italicized and underlined part* to improve the Sentence:

It *is being* a rainy day. we did not go out last Sunday.

Options :

1. being

2. was being

3. were being

4. are being

Question Number : 180 Question Id : 67809416802 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct alternative to replace the *italicized and underlined part* to improve the Sentence:

You are preventing me *to do* my duty.

Options :

1. in doing

2. from doing

3. about doing

4. of doing

Question Number : 181 Question Id : 67809416803 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the meaning of the italicized words:

It`s time for me to *hit the sack*, I`m so tired.

Options :

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2. to beat someone

3. to go to sleep

4. to resign the job

Question Number : 182 Question Id : 67809416804 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Find the meaning of the italicized words:

If you *cry wolf* often. people will stop believing you.

Options :

1. invite trouble

2. give false alarm

3. imitate

4. shout loudly

Question Number : 183 Question Id : 67809416805 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the correct phrasal verb:

You can always _____ him for good advice.

Options :

1. count on

2. count down

3. count in

4. count up

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Orientation : Vertical

Fill in the blank with the correct phrasal verb:

Burglars _____ my house yesterday night.

Options :

1. broke down

2. broke up

3. break away

4. broke into

Question Number : 185 Question Id : 67809416807 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fill in the blank with the correct phrasal verb:

The fire fighters were able to _____ fire in ten minutes.

Options :

1. put off

2. put out

3. put up

4. put on

Question Id : 67809416808 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No
Question Numbers : (186 to 190)

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Check the correct option.

Bacteria are extremely small living things. While we measure small things in inches or centimeters. bacterial size is measured in microns. One micron is a thousandth of a millimeter. A pinhead is about a millimeter across. Rod shaped bacteria are usually two to four microns long. while rounded ones are generally one micron in diameter and are the smallest. Thus. if you enlarged a rounded bacterium a thousand times. it would be just about the size of a pinhead. An adult human magnified by the same amount would be over a mile (1.6 kilometers) tall.

Even with an ordinary microscope. you must look closely to see bacteria. Using a magnification of 100 times. one finds that bacteria are barely visible as tiny rods or dots. One cannot make out anything of their structure. Using special stains. one can see that some bacteria have attached to them wavy looking "hairs" called flagella. Others have only one flagellum. The flagella rotate. pushing the bacteria though the water. Many bacteria lack flagella and cannot move about by their own power while others can glide along over surfaces by some little understood mechanism.

Sub questions

Question Number : 186 Question Id : 67809416809 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the main topic of the passage?

Options :

1. the characteristics of bacteria

2. how bacteria reproduce

3. the various functions of bacteria

4. how bacteria contribute to disease

Question Number : 187 Question Id : 67809416810 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bacteria are measured in _____.

Options :

1. inches

2. centimeters

3. microns

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Question Number : 188 Question Id : 67809416811 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the smallest?

Options :

1. a pinhead

2. a rounded bacterium

3. a microscope

4. a rod-shaped bacterium

Question Number : 189 Question Id : 67809416812 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Many bacteria can not move because they

Options :

1. lack flagella

2. have "hairs"

3. are blind

4. are small

Question Number : 190 Question Id : 67809416813 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If you want to see bacteria, you shall use

Options :

1. Pinhead

2. Telescope

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4. Microscope

Question Number : 191 Question Id : 67809416814 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

and still loves you / who knows / a friend is some one / all about you
A B C D

Options :

1. CADB

2. DCBA

3. DBAC

4. CBDA

Question Number : 192 Question Id : 67809416815 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct option to rearrange the words in the jumbled sentence to make it meaningful:

you lose / you are angry / sixty seconds of happiness / for every minute
A B C D

Options :

1. DBAC

2. BADC

3. CBDA

4. CBAD

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Orientation : Vertical

Choose the correct option to rearrange the words in the jumbled sentence to make it meaningful:

can chew / you / more than / do not bite
A B C D

Options :

1. CBDA

2. BADC

3. DCBA

4. CBDA

Question Number : 194 Question Id : 67809416817 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Choose the correct option to rearrange the words in the jumbled sentence to make it meaningful:

like the wind / you cannot see it / love is / you can feel it /
A B C D

Options :

1. DBAC

2. DACB

3. CABD

4. BDAC

Question Number : 195 Question Id : 67809416818 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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meaningful:

to join / he ran away / the cinemas / from home
A B C D

Options :

1. DBCA

2. BDCA

3. BDAC

4. ADCB

Question Number : 196 Question Id : 67809416819 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

If I were you. I would not take a loan from a private bank.

Options :

1. requesting

2. advising

3. apologizing

4. commanding

Question Number : 197 Question Id : 67809416820 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

May I sit here for an hour?

Options :

1. requesting

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apologizing
3.

commanding
4.

Question Number : 198 Question Id : 67809416821 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Could I borrow a pen, please.

Options :

requesting
1.

seeking permission
2.

apologizing
3.

commanding
4.

Question Number : 199 Question Id : 67809416822 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Switch of your mobiles when you come into my office.

Options :

warning
1.

advising
2.

commanding
3.

requesting
4.

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Orientation : Vertical

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

You have very pleasant manners.

Options :

1. requesting

2. commanding

3. advising

4. complimenting

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