

# Question Paper Preview

<b>Question Paper Name :</b>	BSc Mathematics 14th Sep 2020 S1
<b>Subject Name :</b>	BSc Mathematics
<b>Duration :</b>	180
<b>Total Marks :</b>	200
<b>Display Marks:</b>	No
<b>Share Answer Key With Delivery Engine :</b>	Yes
<b>Actual Answer Key :</b>	Yes
<b>Is this Group for Examiner? :</b>	No

## Mathematics

<b>Section Number :</b>	1
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	100
<b>Number of Questions to be attempted :</b>	100
<b>Section Marks :</b>	100
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes
<b>Mark As Answered Required? :</b>	Yes

**Question Number : 1 Question Id : 61097512825 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $a, b \in G$  and  $*$  is a binary operation on  $G$ , then

**Options :**

1.  $a*b = \text{identity element}$
2.  $a*b \in G$
3.  $a*a^{-1} \in G$
4.  $a*b \notin G$

**Question Number : 2 Question Id : 61097512826 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The algebraic structure  $(G, *)$  is called a semi group, if the operation  $*$  is binary and

**Options :**

1. commutative
2. distributive
3. Associative
4. closure

**Question Number : 3 Question Id : 61097512827 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The algebraic structure  $(G, *)$  is called monoid if

**Options :**

1. identity element exists in G
2.  $a^{-1}$  exists for all a in G
3. \* is distributive
4. \* follows cancellation law

**Question Number : 4 Question Id : 61097512828 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $G = \{1, -1, i, -i\}$  then

**Options :**

1.  $(G, \cdot)$  is a group
2.  $(G, +)$  is a group
3.  $(G, +)$  is a semi group
4.  $(G, -)$  is a semi group

**Question Number : 5 Question Id : 61097512829 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $G = \{x / x = 2^a \cdot 3^b, a, b \in Z\}$ , then  $(G, \cdot)$

**Options :**

1. has no identity element
2. has no inverse element
3. is a group
4. is not commutative on  $G$

**Question Number : 6 Question Id : 61097512830 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $a*b = a + b - ab$ , then for integer set  $Z$ ,  $(Z, *)$  is

**Options :**

1. not closed for  $*$
2. not associative for  $*$
3. a semi group
4. a group

**Question Number : 7 Question Id : 61097512831 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Lagrange's theorem:

**Options :**

1. order of a subgroup divides order of the group

2. order of a subgroup divides the order of a semi group
3. order of the group divides the order of the power group
4. order of the normal subgroup divides the order of the kernel.

**Question Number : 8 Question Id : 61097512832 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $H$  is a normal subgroup of  $G$  and  $h \in H, x \in G$  then

**Options :**

1.  $xhx^{-1} \in G$
2.  $hxx^{-1} \in G$
3.  $hxx^{-1} \in H$
4.  $xhx^{-1} \in H$

**Question Number : 9 Question Id : 61097512833 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $H$  is a improper normal subgroup of  $G$ , then  $H =$

**Options :**

1.  $\{e\}$

2.  $\{\phi\}$

3.  $xH$

4.  $x^{-1}H$

**Question Number : 10 Question Id : 61097512834 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Every group of prime order is a

**Options :**

1. normal subgroup

2. symmetric group

3. permutation group

4. improper group.

**Question Number : 11 Question Id : 61097512835 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

$f:G \rightarrow G'$  and  $f$  is a homomorphism of  $G$  into  $G'$ , then kernel of  $f$  is

**Options :**

1. in  $G'$

2. in  $G$

3.  $\{e\}$

4.  $\{e'\}$

**Question Number : 12 Question Id : 61097512836 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The set of all limit points of a set is called

**Options :**

1. open set

2. closed set

3. interior set

4. derived set

**Question Number : 13 Question Id : 61097512837 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $G = \{1, -1, i, -i\}$ ,  $(G, \cdot)$  is a cyclic group with generator

**Options :**

1. 0

2. 1

3. -1

4. i

**Question Number : 14 Question Id : 61097512838 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $G$  is an infinite cyclic group, then  $G$  has  $n$  number of generators where  $n =$

**Options :**

1. 1

2. 2

3. 3

4.  $\infty$

**Question Number : 15 Question Id : 61097512839 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A function  $f$  is said to be bounded on a domain  $D$  if for any  $x \in D$

**Options :**

1.  $|f(x)| \geq k$



2.  $|f(x)| \leq k$

3.  $|f(x)| > 0$

4.  $f(x) > 0$

**Question Number : 16 Question Id : 61097512840 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

$$\lim_{x \rightarrow 0} (1+x)^{1/x} =$$

**Options :**

1.  $e$

2.  $e^{-1}$

3.  $1$

4.  $0$

**Question Number : 17 Question Id : 61097512841 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Darboux's theorem: If  $f: [a, b] \rightarrow \mathbb{R}$  and i)  $f$  is differentiable in  $(a, b)$  ii)  $f'(a)f'(b) < 0$  then for a value  $c$  in  $(a, b)$

**Options :**

1.  $f(c) = 0$

2.  $f'(c) = 0$

3.  $f(c) > k$

4.  $f'(c) > k$

**Question Number : 18 Question Id : 61097512842 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $f:[a,b] \rightarrow \mathbb{R}$ ,  $f$  is differentiable on  $[a, b]$  and  $f'(a) \neq f'(b)$ , then for a value of  $c$  in  $(a, b)$  and

for constant  $k$  such that  $f'(a) < k < f'(b)$ ,

**Options :**

1.  $f(c) = k$

2.  $f(c) = 0$

3.  $f'(c) = 0$

4.  $f'(c) = k$

**Question Number : 19 Question Id : 61097512843 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $f:[a, a+h] \rightarrow \mathbb{R}$ ,  $f$  is continuous on  $[a, a+h]$  and  $f'(x)$  exists on  $(a, a+h)$ , then for a value of  $\theta$  such that  $0 < \theta < 1$ ,  $f(a+\theta h) =$

**Options :**

1.  $f(a) + \theta h$
2.  $f(a) + hf'(a\theta)$
3.  $f(a) + h\theta f'(a)$
4.  $f(a) + hf'(a+h\theta)$

**Question Number : 20 Question Id : 61097512844 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Maclaurin's series for  $\sin x$  is

**Options :**

1.  $x + \frac{x^3}{3!} + \frac{x^5}{5!} + \dots$
2.  $x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$
3.  $x - \frac{x^3}{3!} + \frac{x^5}{5!} - \dots$
4.  $x - \frac{x^2}{2!} + \frac{x^3}{3!} - \dots$

**Question Number : 21 Question Id : 61097512845 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $f:[a, b] \rightarrow \mathbb{R}$ ,  $f$  has  $m$  and  $M$  as its minimum and maximum values, then

**Options :**

$$1. \quad m \leq \frac{\int_a^b f(x) dx}{b-a} \leq M$$

$$2. \quad m \leq (b-a)f(x) \leq M$$

$$3. \quad m \leq f'(x) \leq M$$

$$4. \quad m \leq (b-a)f'(x) \leq M$$

**Question Number : 22 Question Id : 61097512846 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The necessary condition for  $f(x)$  to be Riemann integrable on  $[a, b]$  is

**Options :**

$$1. \quad |U - L| \leq \varepsilon$$

$$2. \quad |U| \leq |L| + \varepsilon$$

$$3. \quad |L| \geq \varepsilon + |U|$$

$$4. \quad |U - L| < \delta \text{ if } |b-a| < \varepsilon$$

**Question Number : 23 Question Id : 61097512847 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $f$  and  $g$  are Riemann integrable on  $[a, b]$  and  $g$  is positive and decreasing on  $[a, b]$ , then

for a value of  $t$  in  $(a, b)$ ,  $\int_a^t f(x)g(x)dx =$

**Options :**

1.  $g(t) \int_a^b f(x)dx$

2.  $f(t) \int_a^b g(x)dx$

3.  $g(a) \int_a^t f(x)dx$

4.  $f(a) \int_a^t g(x)dx$

**Question Number : 24 Question Id : 61097512848 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The series  $\sum_{n=1}^{\infty} \frac{\cos nx}{n^2}$  is

**Options :**

1. uniformly convergent

2. Riemann integrable on  $[1, \infty)$

3. convergent if  $\sum_{n=1}^{\infty} \cos nx$  is convergent

4. Divergent

**Question Number : 25 Question Id : 61097512849 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

$\sum a_n x^n$  converges uniformly on  $[0,1]$  if

**Options :**

1.  $\sum a_n$  converges absolutely

2.  $|a_n| < M_n$

3.  $|a_n| > M_n$

4.  $\lim_{n \rightarrow \infty} a_n = 0$

**Question Number : 26 Question Id : 61097512850 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If non zero term series  $\sum a_n$  is divergent, then  $\sum 1/a_n$  is

**Options :**

1. divergent
2. convergent
3. oscillates
4. nothing can be said

**Question Number : 27 Question Id : 61097512851 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $a$  is a vector of constant magnitude, then  $a$  and  $da/dt$  are

**Options :**

1. constant
2. constant in direction
3. parallel to  $a \times da/dt$
4. perpendicular to each other

**Question Number : 28 Question Id : 61097512852 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The unit normal vector to the XOY plane is

**Options :**

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

**Question Number : 29 Question Id : 61097512853 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The unit normal vector to the plane  $x + y + z = 1$  is

**Options :**

1.  $i+j+k$
2.  $(i+j-k)/3$
3.  $(i-j+k)/\sqrt{3}$
4.  $(i+j+k)/\sqrt{3}$

**Question Number : 30 Question Id : 61097512854 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The magnitude of the gradient of  $xy + yz + zx = 6$  at  $(1, 1, 1)$  is

**Options :**



1. 6
2.  $2\sqrt{3}$
3.  $\sqrt{3}$
4.  $3\sqrt{3}$

**Question Number : 31 Question Id : 61097512855 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The directional derivative of the surface  $x^2 + y^2 + z^2 = 1$  at  $(1, 1, 1)$  along x axis is

**Options :**

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

**Question Number : 32 Question Id : 61097512856 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The line of intersection of the planes  $x=a, y=b$  is perpendicular to

**Options :**

1. XOY plane
2. YOZ plane
3. ZOX plane
4.  $x + y + z = 1$

**Question Number : 33 Question Id : 61097512857 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Divergence of  $a = x^2i + y^2j + z^2k$  at  $(1, 1, 1)$  is

**Options :**

1. 1
2. 3
3. 9
4. 6

**Question Number : 34 Question Id : 61097512858 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Curl of divergence of  $a$  where  $a = x^2i + y^2j + z^2k$  at  $(1, 1, 1)$  is

**Options :**

1. 0
2. 6
3. 3
4. 2

**Question Number : 35 Question Id : 61097512859 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $S$  is any closed surface enclosing volume  $V$  and  $a = axi + byj + czk$ , then over the surface  $S$ ,  $\iint a \cdot ndS =$

**Options :**

1.  $(a+b+c)V$
2.  $abcV$
3.  $abc$
4.  $(ab + bc + ca)V$

**Question Number : 36 Question Id : 61097512860 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $a$  and  $b$  are solenoidal, then  $a \times b$  is

**Options :**

1. also solenoidal
2. irrotational
3. zero
4. constant

**Question Number : 37 Question Id : 61097512861 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $a = x^2i + 2y^2j + 3z^2k$  is force field, the work done in moving a particle along the sides of a  $\Delta OPQ$  is

**Options :**

1. 0
2. area of  $\Delta OPQ$
3. 2.  $\Delta OPQ$
4. perimeter of  $\Delta OPQ$

**Question Number : 38 Question Id : 61097512862 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

When  $\phi = 3x^2y + xz^3 + yz + \text{constant}$ , the value of  $\nabla \times \nabla \phi =$

**Options :**

1.  $\nabla\phi$
2.  $0$
3.  $2 \nabla\phi$
4.  $3\nabla\phi$

**Question Number : 39 Question Id : 61097512863 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The area of region R inside a closed contour C can be obtained by employing

**Options :**

1. Green's theorem in plane
2. Gauss divergence theorem
3. Stokes theorem
4. Frenet – Serret formula

**Question Number : 40 Question Id : 61097512864 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The direction cosines of the straight line from the origin to the point (6, 2, 3) are

**Options :**

1.  $\frac{7}{6}, \frac{7}{2}, \frac{7}{3}$
2.  $\frac{6}{7}, \frac{2}{7}, \frac{3}{7}$
3.  $7, 7, 7$
4.  $8, 8, 8$

**Question Number : 41 Question Id : 61097512865 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The cosine of the acute angle between the planes  $x + 2y - 2z = 5$  and  $3x - 5y + 4z = 2$  is

**Options :**

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

**Question Number : 42 Question Id : 61097512866 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The equation of a plane which makes intercepts a, b, c on X, Y, Z axes respectively is

**Options :**

1.  $ax + by + cz = 1$
2.  $(x-a) + (y-b) + (z-c) = 1$
3.  $x/a + y/b + z/c = 1$
4.  $x/a + y/b + z/c = 0$

**Question Number : 43 Question Id : 61097512867 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The number of conditions required to determine the equation of a plane is

**Options :**

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

**Question Number : 44 Question Id : 61097512868 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The plane passing through the points  $(0, 1, 1)$ ,  $(1, 1, 2)$  and  $(-1, 2, -2)$  is

**Options :**

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

**Question Number : 45 Question Id : 61097512869 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The line  $(x - 3)/2 = (y - 4)/3 = (z - 5)/4$  lies in the plane

**Options :**

1.  $4x - 4y + 5z = 3$
2.  $4x + 4y - 5z = 3$
3.  $4x + 4y + 5z = 3$
4.  $4x - 4y + 5z + 3 = 0$

**Question Number : 46 Question Id : 61097512870 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**



The magnitude of shortest distance between the lines  $x/2 = -y/3 = z$  and  $(x - 2)/3 = (y - 1)/(-5) = (z + 2)/2$  is

**Options :**

1.  $1/\sqrt{3}$
2.  $\sqrt{3}$
3. 3
4.  $1/3$

**Question Number : 47 Question Id : 61097512871 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The equation of sphere with points  $(2, -1, 4)$  and  $(-2, 2, -2)$  as diameter is

**Options :**

1.  $x^2 + y^2 + z^2 + y + 2z + 14 = 0$
2.  $x^2 + y^2 + z^2 - y - 2z - 14 = 0$
3.  $2x^2 + y^2 - z^2 + x + 2z + 14 = 0$
4.  $x^2 - y^2 - z^2 + y + 2z + 14 = 0$

**Question Number : 48 Question Id : 61097512872 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The degree of equation to a cone depends on

**Options :**

1. guiding curve
2. vertex
3. generator
4. angle

**Question Number : 49 Question Id : 61097512873 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The angle between the planes  $x = 0$  and  $x = y$  is

**Options :**

1.  $\pi$
2.  $\pi/3$
3.  $\pi/4$
4.  $\pi/6$

**Question Number : 50 Question Id : 61097512874 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If three vectors  $a, b, c$  are coplanar, then

**Options :**

1. one is perpendicular to other two
2.  $a \times (b \times c) = 0$
3.  $[a, b, c] = 0$
4.  $r = a + b + c$  where  $r \neq 0$

**Question Number : 51 Question Id : 61097512875 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The angular velocity of a particle can be given in terms of

**Options :**

1. curl(velocity)
2. Div( velocity)
3. grad(velocity)
4. Div( torque)

**Question Number : 52 Question Id : 61097512876 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The equation of a line normal to the plane  $ax + by + cz = d$  and passing through a point  $(x_0, y_0, z_0)$  is

**Options :**

1.  $(x - x_0)/a = (y - y_0)/b = (z - z_0)/c$
2.  $x/a = y/b = z/c$
3.  $ax/(x-x_0) = by/(y-y_0) = cz/(z-z_0)$
4.  $x/(a-x_0) = y/(b-y_0) = z/(c-z_0)$

**Question Number : 53 Question Id : 61097512877 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

A vector  $r$  in the plane of two vectors  $a, b$  is given by

**Options :**

1.  $r = xa + yb$
2.  $r = a \times b$
3.  $r \cdot (a - b) = 0$
4.  $xr = y(a \times b)$

**Question Number : 54 Question Id : 61097512878 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The determinant of the matrix  $\begin{bmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{bmatrix}$  is

**Options :**

1. 0
2. 1
3.  $(a - b)(b - c)(c - a)$
4.  $(a+b)(b+c)(c+a)$

**Question Number : 55 Question Id : 61097512879 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If matrix M is orthogonal , then  $\det M =$

**Options :**

1. 0
2.  $\pm 1$
3.  $\pm i$
4. 2

**Question Number : 56 Question Id : 61097512880 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If matrix  $M$  is orthogonal, then

**Options :**

1.  $M=M^2$

2.  $M^T = M^{-1}$

3.  $M = M^T$

4.  $M=\sqrt{2}. M$

**Question Number : 57 Question Id : 61097512881 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Sum of principal diagonal elements of a square matrix is called

**Options :**

1. rank

2. eigen value

3. trace

4. determinant

**Question Number : 58 Question Id : 61097512882 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The rank of  $I_{4 \times 4}$  is

**Options :**

1. 0
2. 4
3. 16
4. 8

**Question Number : 59 Question Id : 61097512883 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $\lambda$  is an eigen value of the matrix  $M$ , then  $\lambda^{-1}$  is an eigen value of

**Options :**

1.  $M$
2.  $M^2$
3.  $M^{-1}$
4.  $M^T$

**Question Number : 60 Question Id : 61097512884 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $M$  is symmetric matrix, then  $M^{-1}$  is certainly

**Options :**

1. singular
2. symmetric
3. orthogonal
4. skew-symmetric

**Question Number : 61 Question Id : 61097512885 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $\rho(A) = 2$ ,  $\rho(B) = 3$ , then  $\rho(AB) =$

**Options :**

1. 2
2. 3
3. 6
4. 0



**Question Number : 62 Question Id : 61097512886 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The maximum value of rank of any matrix  $M_{3 \times 4}$  is

**Options :**

1. 3
2. 4
3. 1
4. 12

**Question Number : 63 Question Id : 61097512887 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Rank of  $O_{5 \times 5}$ (null matrix) is

**Options :**

1. 0
2. 5
3. 1
4. 25

**Question Number : 64 Question Id : 61097512888 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If 1, 2 are eigen values of matrix M, then the eigen values of  $M^2$  are

**Options :**

1. 1, 2

2. 1, 4

3. 2, 4

4. 4, 8

**Question Number : 65 Question Id : 61097512889 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If the eigen values of a matrix M are distinct, then its eigen vectors are

**Options :**

1. independent

2. dependent

3. orthogonal

4. parallel

**Question Number : 66 Question Id : 61097512890 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $M$  is a singular matrix, then  $M$  is certainly

**Options :**

1. not invertible
2. symmetric
3. orthogonal
4. invertible

**Question Number : 67 Question Id : 61097512891 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $M$  is a square matrix, then  $M$  satisfies

**Options :**

1. its characteristic equation
2. homogenous equation
3. orthogonal property
4. parallel property

**Question Number : 68 Question Id : 61097512892 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $Mx=0$ , then the system is always

**Options :**

1. consistent
2. in-consistent
3. ill-conditioned
4. conditioned

**Question Number : 69 Question Id : 61097512893 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Eigen values of a NULL matrix are

**Options :**

1. 0's
2. -1's
3. 1's
4. do not exist

**Question Number : 70 Question Id : 61097512894 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Eigen values of a Unit matrix are

**Options :**

1. 0's

2. 1's

3. -1's

4. do not exist

**Question Number : 71 Question Id : 61097512895 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $p$  is an eigen value of a non-singular matrix  $A$  then an eigen value of  $\text{adj}A$  is

**Options :**

1. 1

2.  $p$

3.  $\frac{1}{p}$

4.

$$\frac{|A|}{P}$$

**Question Number : 72 Question Id : 61097512896 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If 1 is an eigen value of a non-singular matrix A then one eigen value of  $A^{-1}$  is

**Options :**

1.  $i$

2.  $-1$

3.  $-i$

4.  $1$

**Question Number : 73 Question Id : 61097512897 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The sum of eigen values of A is always equal to

**Options :**

1.  $0$

2. order of A

3. trace of A

4.  $\det A$

**Question Number : 74 Question Id : 61097512898 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The product of eigen values of A is always equal to

**Options :**

1. 0

2. order of A

3. trace of A

4.  $\det A$

**Question Number : 75 Question Id : 61097512899 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If one eigen value of A is zero, then the A is

**Options :**

1. non-singular

2. symmetric

3. singular

4. orthogonal

**Question Number : 76 Question Id : 61097512900 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If two eigen values of  $A_{3 \times 3}$  are -1 and 2 and  $\det A = 4$  then third eigen value is

**Options :**

1. 1

2. 2

3. -1

4. -2

**Question Number : 77 Question Id : 61097512901 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If the eigen values of A are 1, -2 and 3 then eigen values of  $3I - 2A + A^2$  are:

**Options :**

1. 6,3,11

2. 3,11,18

3. 2,3,6



4. 2,11,6

**Question Number : 78 Question Id : 61097512902 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Eigen vectors of Unit matrix are

**Options :**

1. Any vector
2. Zero vector
3. Any non-zero vector
4. do not exist

**Question Number : 79 Question Id : 61097512903 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The degree of the differential equation  $(y'' + y'^2)^{3/2} = a y''$  is

**Options :**

1. 2
2. 3
3. 1

4. 6

**Question Number : 80 Question Id : 61097512904 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The differential equation  $(y')^2 + 5y^{1/3} = x$  is

**Options :**

1. linear of order 1 and degree 2
2. nonlinear of order 1 and degree 6
3. nonlinear of order 1 and degree 2
4. linear of order 1 of degree 6

**Question Number : 81 Question Id : 61097512905 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The general solution of  $y' = e^{x+y}$  is

**Options :**

1.  $e^x + e^y = c$
2.  $e^x - e^y = c$

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

4.  $e^x - e^{-y} = c$

**Question Number : 82 Question Id : 61097512906 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The differential equation  $(x + x^8 + ay^2)dx + (y^8 - y + bxy) dy = 0$  is exact if

**Options :**

1.  $b = 2a$

2.  $a = b$

3.  $a \neq 2b$

4.  $a=1, b=3$

**Question Number : 83 Question Id : 61097512907 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The general solution of  $(4D^2 + 4D + 1) y = 0$  is

**Options :**

1.  $Ae^{-x/2} + B e^{x/2}$

2.  $(A+ Bx)e^{x/2}$

3.  $(A+ Bx)e^{-x/2}$

4.  $\sinh x/2$

**Question Number : 84 Question Id : 61097512908 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular integral of  $y'' + y = e^{-x}$  is

**Options :**

1.  $e^{-x/3}$

2.  $xe^{-x/3}$

3.  $-xe^{-x/3}$

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

**Question Number : 85 Question Id : 61097512909 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The differential equation having a basis for its solution as  $\sinh 6x$  and  $\cosh 6x$  is

**Options :**

1.  $y'' + 36y=0$

2.  $y'' - 36y=0$

3.  $y'' + 6y = 0$

4.  $y'' - 6y = 0$

**Question Number : 86 Question Id : 61097512910 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

integrating factor of  $xy' + y = x^3y^6$  is

**Options :**

1.  $x^{-5}$

2.  $x^5$

3.  $y^{-5}$

4.  $y^5$

**Question Number : 87 Question Id : 61097512911 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The differential equation obtained by eliminating  $c_1$  and  $c_2$  from  $y = c_1\sin x + c_2\cos x$  is

**Options :**

1.  $y'' + y = 0$

2.

$$y'' - y = 0$$

3.  $y'' = 0$

4.  $y = 0$

**Question Number : 88 Question Id : 61097512912 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The differential equation  $y' + P(x)y = Q(x)$  has an integrating factor

**Options :**

1.  $\exp(\int P dx)$

2.  $\exp(-\int P dx)$

3.  $\int P dx$

4.  $\exp(\int Q dx)$

**Question Number : 89 Question Id : 61097512913 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular integral of  $y'' + a^2 y = \sin ax$  is

**Options :**

1.  $-x \cos ax / (2a)$

2.  $x \cos ax/(2a)$

3.  $ax (\cos ax)/2$

4.  $-ax (\cos ax)/2$

**Question Number : 90 Question Id : 61097512914 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The transformation used to convert equation  $x^2y'' + xy' + y = 0$  into an equation with constant coefficients is

**Options :**

1.  $x = e^{-t}$

2.  $x = e^t$

3.  $x = \log t$

4.  $x = 1/t$

**Question Number : 91 Question Id : 61097512915 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Differential equation corresponding to  $y = cx - c^2$  is:

**Options :**

1.  $(y')^2 + x y' + y = 0$

2.  $y'' = 0$

3.  $y' = c$

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

**Question Number : 92 Question Id : 61097512916 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Differential equation corresponding to  $y = \sqrt{5x + c}$  is:

**Options :**

1.  $y^2 = 5x + c$

2.  $y' = \frac{2.5}{\sqrt{5x + c}}$

3.  $yy' = 5$

4.  $yy' = 2.5$

**Question Number : 93 Question Id : 61097512917 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**



**Orientation : Vertical**

The differential equation:  $(y^2 e^{xy^2} + 6x)dx + (2xy e^{xy^2} - 4y)dy = 0$  is:

**Options :**

1. linear, homogeneous and exact
2. non-linear, homogeneous and exact
3. non-linear, non-homogeneous and not exact
4. non-linear, non-homogeneous and exact

**Question Number : 94 Question Id : 61097512918 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Integrating factor of differential equation:  $ydx - xdy + \log x dx = 0$  is:

**Options :**

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

**Question Number : 95 Question Id : 61097512919 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Integrating factor of differential equation:  $x^2 y' = 3x^2 - 2xy + 1$  is:

**Options :**

1.  $x$

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

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

4.  $x^2$

**Question Number : 96 Question Id : 61097512920 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Particular Integral of  $(D-1)^4 y = e^x$  is:

**Options :**

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

2.  $\frac{x^4}{12} e^x$

3.  $\frac{x^4}{24} e^x$

4.  $\frac{x^4}{24}$

**Question Number : 97 Question Id : 61097512921 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Options :**

1.  $\frac{\sin 2x}{4}$

2.  $\frac{\cos 2x}{4}$

3.  $\frac{x \sin 2x}{4}$

4.  $\frac{x \cos 2x}{4}$

**Question Number : 98 Question Id : 61097512922 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Complementary function of differential equation:  $x^2 y'' - 3x y' = x + 11$  is:

**Options :**

1.  $c_1 + c_2 e^{4x}$

2.  $c_1 x + c_2 e^{4x}$

3.  $c_1 + c_2 x^4$

4.  $c_1 x - c_2 e^{4x}$

**Question Number : 99 Question Id : 61097512923 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Particular integral of differential equation:  $(D^3 - D)y = e^x + e^{-x}$  is:

**Options :**

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

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

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

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

**Question Number : 100 Question Id : 61097512924 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular solution of  $y'' - 2y' + 2y = e^x \cos x$  is \_\_\_\_.

Options :

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

2.  $\frac{xe^x}{2} \cos x$

3.  $\frac{xe^x}{2} \sin x$

4.  $-\frac{xe^x}{2} \sin x$

## Analytical Ability

Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	50
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Question Number : 101 Question Id : 61097512925 Question Type : MCQ Display Question  
 Number : Yes Is Question Mandatory : No Single Line Question Option : No Option  
 Orientation : Vertical

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

Using the data answer the question

What is present age of Ramu?

- I. Ramu's present age is a multiple of 5.
- II. Ramu's age after 15 years will be 5times his age 5 years back.

**Options :**

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

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

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

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

**Question Number : 102 Question Id : 61097512926 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Using the data answer the question

What is Rekha's present age?

- I. Rekha's present age is 5 times her son's present age.
- II. Rekha's age two years back is three times more than her daughter's age.

**Options :**

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

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

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

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

**Question Number : 103 Question Id : 61097512927 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

How many marks are obtained by Ravi?

- I. Ravi joined as 21<sup>st</sup> candidate into the class and the average marks of the class gone from 65 marks to 70 marks.
- II. Ravi got 85% marks.

**Options :**

1. Statement I is alone is sufficient to answer the question.
2. Statement II is alone is sufficient to answer the question.

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

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

**Question Number : 104 Question Id : 61097512928 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**



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

Using the data answer the question

How much amount Abraham get on maturity of the fixed deposit?

- I. Abraham invested Rs. 10,000 for 5 years.
- II. The compound interest rate is 8% p.a.

**Options :**

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

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

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

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

**Question Number : 105 Question Id : 61097512929 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

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

Using the data answer the question

A,B and C started a joint venture and got Rs. 20,000/- gain. How much C will get?

- I. A invested twice more than B.
- II. C invested Rs. 15,000/-.

**Options :**

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

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

3.



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

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

**Question Number : 106 Question Id : 61097512930 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Using the data answer the question

How many meters the inspector has to inspect to reject 2 meters cloth?

- I. Inspector rejects 0.08 % of the meters cloth as defective.
- II. Inspector works 8 hrs per day on working days.

**Options :**

- 1. Statement I is alone is sufficient to answer the question.
- 2. Statement II is alone is sufficient to answer the question.

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

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

**Question Number : 107 Question Id : 61097512931 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Using the data answer the question**

The Present population of a town is?

- I. The population of the town 2 years ago was 70 thousands.
- II. Due to migration population of the town decreases 5% p.a.

**Options :**

- 1. Statement I is alone is sufficient to answer the question.
- 2. Statement II is alone is sufficient to answer the question.
- 3. Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.
- 4. Both the statements I and II together are not sufficient to answer the question and additional data is required.

**Question Number : 108 Question Id : 61097512932 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Using the data answer the question**

What is the speed of the train?

- I. The train crosses a tree in 10 seconds.
- II. The train crosses a platform length of 300 meters in 30 seconds.

**Options :**

- 1. Statement I is alone is sufficient to answer the question.
- 2. Statement II is alone is sufficient to answer the question.
- 3.

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

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

**Question Number : 109 Question Id : 61097512933 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

What is the Raja's speed in still water?

- I. Raja is 6 feet tall .
- II. He can swim upstream at 8 kmph and down stream 12 kmph.

**Options :**

- 1. Statement I is alone is sufficient to answer the question.
- 2. Statement II is alone is sufficient to answer the question.

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

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

**Question Number : 110 Question Id : 61097512934 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Using the data answer the question**

What is the cost of the mixture of rice?

- I. First quality Rs. 20/- per kg. And second quality 15 per k.g.
- II. Demand for first quality rice is 500 kg/day and second quality rice is 400./day.

**Options :**

- 1. Statement I is alone is sufficient to answer the question.
- 2. Statement II is alone is sufficient to answer the question.
- 3. Both the statements I and II are sufficient to answer the question but neither statement alone is not sufficient.
- 4. Both the statements I and II together are not sufficient to answer the question and additional data is required.

**Question Number : 111 Question Id : 61097512935 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the next number in the series 2, 6,18,54,162,-----.

**Options :**

- 1. 846
- 2. 864
- 3. 486
- 4. 648.

**Question Number : 112 Question Id : 61097512936 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Find the missing number  $1/5, 1/25, 1/125, \text{-----}, 1/3125$ .

**Options :**

1.  $1/625$
2.  $1/526$
3.  $1/256$
4.  $1/652$ .

**Question Number : 113 Question Id : 61097512937 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Find the missing letters AZ,BY,CX,----,EV.

**Options :**

1. WD
2. DD
3. WW
4. DW.

**Question Number : 114 Question Id : 61097512938 Question Type : MCQ Display Question**



**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the missing number 123,234,345,-----,567.

**Options :**

1. 654
2. 456
3. 564
4. 465.

**Question Number : 115 Question Id : 61097512939 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the odd man out. 1, 4, 9,12,16,25,36.

**Options :**

1. 12
2. 9
3. 16
4. 36

**Question Number : 116 Question Id : 61097512940 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the odd man out: 1,2,3,4,5,7,11,13,17.

**Options :**

1. 3
2. 4
3. 5
4. 13

**Question Number : 117 Question Id : 61097512941 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the odd man out:8,27,64,100,125,216,343.

**Options :**

1. 216
2. 125
3. 100
4. 343

**Question Number : 118 Question Id : 61097512942 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Find the odd man out: 10,25,45,54,60,75,80,100.

**Options :**

1. 45
2. 54
3. 60
4. 75

**Question Number : 119 Question Id : 61097512943 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Find the odd man out: 11,22,33,44,55,66,99,121,279,594,660.

**Options :**

1. 121
2. 594
3. 279
4. 99.

**Question Number : 120 Question Id : 61097512944 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the next number in the series 3, 8,15,24,35,48,-----.



**Options :**

1. 54
2. 57
3. 60
4. 63.

**Question Id : 61097512945 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (121 to 127)**

Read the following table carefully and answer .

Following table gives number of candidates Appeared (A) and Selected (S) in a competitive examination from 5 states in 5 years.

Year	A.P.		M.P.		U.P.		Haryana.		Bihar.	
	A (‘000)	S	A (‘000)	S	A (‘000)	S	A (‘000)	S	A (‘000)	S
2011	8	95	7.8	85	7.5	80	8.5	85	6.5	75
2012	5	50	7.5	75	5.5	60	6.5	75	7.5	75
2013	8	80	8.5	70	5.8	70	6.8	65	8.5	80
2014	10	100	9	85	10	90	9	85	9.5	90
2015	12	110	10	90	12	112	10	95	10	95

**Sub questions**

**Question Number : 121 Question Id : 61097512946 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which of the two states total number of candidates appeared are same?

**Options :**

1. A.P and Haryana

2. M.P and U.P.
3. Haryana and Bihar
4. U.P. and Haryana.

**Question Number : 122 Question Id : 61097512947 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which state Competition is showing increasing trend through out the period?

**Options :**

1. A.P.
2. M.P.
3. Bihar.
4. U.P.

**Question Number : 123 Question Id : 61097512948 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which year competition is high in all the states?

**Options :**

1. 2015
2. 2014

3. 2013

4. 2011.

**Question Number : 124 Question Id : 61097512949 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Based on the given information in which state un-employment is High?

**Options :**

1. A.P.

2. M.P.

3. Bihar.

4. U.P.

**Question Number : 125 Question Id : 61097512950 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Total number of candidates selected are equal in which states?

**Options :**

1. M.P and Haryana

2. M.P and U.P.

3. Haryana and Bihar

4. U.P. and Haryana

**Question Number : 126 Question Id : 61097512951 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which year and in which state total number of selected candidates are high?

**Options :**

1. 2015;A.P.
2. 2011; M.P.
3. 2015; U.P.
4. 2015;Bihar.

**Question Number : 127 Question Id : 61097512952 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Throughout the period in which year and in which state competition is low?

**Options :**

1. 2011; Bihar
2. 2012,U.P.
3. 2012 M.P.
4. 2012, A.P.

**Question Id : 61097512953 Question Type : COMPREHENSION Sub Question Shuffling Allowed**

**: Yes Group Comprehension Questions : No**

**Question Numbers : (128 to 130)**

In a code language MONKEY is coded as 12 14 13 10 4 24 and DOLL is coded as 3 14 11 11.

Using this code answer the question:

**Sub questions**

**Question Number : 128 Question Id : 61097512954 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

What is the code for the word JOKER?

**Options :**

1. 4 10 9 17 14
2. 10 14 9 17 4
3. 9 14 10 4 17
4. 10 5 11 6 18

**Question Number : 129 Question Id : 61097512955 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

What is the code for the word ECET?

**Options :**

1. 5 3 5 20

2. 4 2 4 19

3. 2 4 2 19

4. 4 2 4 20

**Question Number : 130 Question Id : 61097512956 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the decoded word for 1 20 19 19 4 17?

**Options :**

1. BUTTER

2. BUTLER

3. BUNDLE

4. BUMPER

**Question Number : 131 Question Id : 61097512957 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a code language MONKEY is coded as NNOJFX , DONKEY is coded as ENOJFX and

COW is coded as DNX then in the same code HORSE is coded as -----.

**Options :**

1. IMSRE

2. IOSRE

3. INSRF

4. ISREF.

**Question Number : 132 Question Id : 61097512958 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a decode 7942 is coded as TRWY and 5896 is coded as VSRU then in the same way 13568 is coded as -----.

**Options :**

1. ZVURX

2. ZURXV

3. ZRVXU

4. ZXVUS

**Question Number : 133 Question Id : 61097512959 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a decode END is coded as START, BAD is Coded as GOOD then in the same code BLACK is coded as -----.

**Options :**

1. WHITE

2. RED

3. BLUE

4. GREEN

**Question Number : 134 Question Id : 61097512960 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a code Sky is coded as Blue, Tree is coded as Green and Night is coded as Black then in the same code Raising Sun is coded as -----.

**Options :**

1. White

2. Red

3. Blue

4. Green

**Question Number : 135 Question Id : 61097512961 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a code if MLNO is coded as LKMN then SOIL is coded as -----.

**Options :**

1. RMGJ

2. RNGJ



3. RNHK

4. RMHK.

**Question Number : 136 Question Id : 61097512962 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which one of the following is not a leap year?

**Options :**

1. 2020

2. 2000

3. 2004

4. 2010.

**Question Number : 137 Question Id : 61097512963 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A Leap year consists of ----- full weeks.

**Options :**

1. 51

2. 52

3. 53

4. 54.

**Question Number : 138 Question Id : 61097512964 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No 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. Five.

**Question Number : 139 Question Id : 61097512965 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the day of the week on 15<sup>th</sup> August 1947?

**Options :**

1. Monday
2. Thursday
3. Tuesday

4. Friday.

**Question Number : 140 Question Id : 61097512966 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the day of the week on 15<sup>th</sup> August 2020?

**Options :**

1. Monday
2. Saturday
3. Tuesday
4. Friday.

**Question Number : 141 Question Id : 61097512967 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many times in a day angle between two hands of a clock will become 0 degrees ?

**Options :**

1. 24 times
2. 23 times
3. 22 times

4. 44 times.

**Question Number : 142 Question Id : 61097512968 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many times in a day angle between two hands of a clock will become 180 degrees?

**Options :**

1. 24 times

2. 23 times

3. 44 times.

4. 22 times

**Question Number : 143 Question Id : 61097512969 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Find at what time between 8pm and 9 pm will hands of the clock be in the same straight line but not together?

**Options :**

1. 8hrs.10(10/11)min pm

2. 8hrs 10 min pm

3. 8hrs 11 min pm

4. 8hrs 09(1/12) min pm.

**Question Number : 144 Question Id : 61097512970 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A watch is 10 min. too fast. When it shows 10.25, then right time is ----.

**Options :**

1. 10.35
2. 10.30
3. 10.20
4. 10.15.

**Question Number : 145 Question Id : 61097512971 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many times in 12 hours both hands in a clock are in right angles?

**Options :**

1. 24 times
2. 23 times
3. 22 times
4. 44 times.

**Question Number : 146 Question Id : 61097512972 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $0!$  is -----.

**Options :**

1. Zero
2. Infinity
3. one
4. un-defined.

**Question Number : 147 Question Id : 61097512973 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many ways 3 Women and 5 men are arranged to a Photograph in a Straight line so that all women can sit together?

**Options :**

1. 3420 ways
2. 3402 ways
3. 4320 ways
4. 4302 ways.

**Question Id : 61097512974 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (148 to 150)**

Five people A, B, C,D and E are sitting in a circle facing the centre.A and C are side by side. D is to the left of A and B is to the left of D. Answer the following question based on this pattern:

**Sub questions**

**Question Number : 148 Question Id : 61097512975 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the position of E?

**Options :**

1. To the left of B
2. To the left of C
3. To the left of A
4. To the left of D

**Question Number : 149 Question Id : 61097512976 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Who is in between B and A?

**Options :**

1. C
2. E

3. D
4. None

**Question Number : 150 Question Id : 61097512977 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Starting from A counting A as 1, the position of E is

**Options :**

1. 3<sup>rd</sup> to the right of A
2. 3<sup>rd</sup> to the left of A
3. 2<sup>nd</sup> to the left of A
4. 2<sup>nd</sup> to the right of A

## Communicative English

<b>Section Number :</b>	3
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	46
<b>Number of Questions to be attempted :</b>	46
<b>Section Marks :</b>	50
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes



Mark As Answered Required? :

Yes

**Question Number : 151 Question Id : 61097512978 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Corruption is \_\_\_\_\_ universal problem.

**Options :**

1. A
2. An
3. the
4. No article needed

**Question Number : 152 Question Id : 61097512979 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

\_\_\_\_\_ Mahabharata is a popular epic.

**Options :**

1. The
2. An
3. A

4. No article is necessary.

**Question Number : 153 Question Id : 61097512980 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

That place is \_\_\_\_\_ your reach.

**Options :**

1. On
2. of
3. beyond
4. upon

**Question Number : 154 Question Id : 61097512981 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Bananas are sold \_\_\_\_\_ the dozen.

**Options :**

1. by

2. on

3. for

4. No preposition is necessary.

**Question Number : 155 Question Id : 61097512982 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Look ! the old man \_\_\_\_\_ the road.

**Options :**

1. is crossing

2. was crossing

3. has been crossing

4. had been crossing

**Question Number : 156 Question Id : 61097512983 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

They \_\_\_\_\_ cricket since 3'0 clock.

**Options :**

1. play
2. are playing
3. have played
4. have been playing.

**Question Number : 157 Question Id : 61097512984 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No 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.

Many innocent students \_\_\_\_\_ by fake advertisements.

**Options :**

1. Cheated
2. are cheated
3. are cheating
4. cheat.

**Question Number : 158 Question Id : 61097512985 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

The Ramakrishna Mission \_\_\_\_\_ by Swamy Vivekananda.

**Options :**

1. Is found
2. was founded
3. was being found
4. was being founded

**Question Number : 159 Question Id : 61097512986 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Students are instructed to \_\_\_\_\_ their real goals.

**Options :**

1. purse
2. pursue
3. perusal
4. profuse

**Question Number : 160 Question Id : 61097512987 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Choose the correct question tag for the following :

Close the door immediately, \_\_\_\_\_ ?

**Options :**

1. Can you
2. can't you
3. will you
4. do you

**Question Number : 161 Question Id : 61097512988 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Identify the synonym for the word, CALAMITY

**Options :**

1. disaster
2. calmness
3. intelligent
4. Liberal

**Question Number : 162 Question Id : 61097512989 Question Type : MCQ Display Question  
Number : Yes Is Question Mandatory : No Single Line Question Option : No Option  
Orientation : Vertical**

Identify the synonym for the word, PROFANE

**Options :**

1. Fresh
2. irreligious
3. Religious
4. Serious

**Question Number : 163 Question Id : 61097512990 Question Type : MCQ Display Question  
Number : Yes Is Question Mandatory : No Single Line Question Option : No Option  
Orientation : Vertical**

Identify the antonym for the word, LIBERAL

**Options :**

1. honourable
2. fiend
3. biased
4. restless

**Question Number : 164 Question Id : 61097512991 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Identify the antonym for the word, PROFUSE

**Options :**

1. Scanty
2. abundant
3. abuse
4. Careless

**Question Number : 165 Question Id : 61097512992 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

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

An animal which eats both meat and vegetables.

**Options :**

1. herbivorous
2. carnivorous
3. polygamous
4. omnivorous



**Question Number : 166 Question Id : 61097512993 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

A person who collects coins

**Options :**

1. Numismatics
2. Numerologist
3. Numismatist
4. Nephrologists

**Question Number : 167 Question Id : 61097512994 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No 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

The food which I took in the hotel was highly \_\_\_\_ (tasteful)

**Options :**

1. Non-
2. dis-
3. un-
4. mis-

**Question Number : 168 Question Id : 61097512995 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No 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

They have completed their project (success)\_\_\_\_\_.

**Options :**

1. -fully
2. -ful
3. -eed
4. -ive

**Question Number : 169 Question Id : 61097512996 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Fill in the blank with the right word from the words given below.

The wood cutter \_\_\_\_\_ the tree with his axe, yesterday.

**Options :**

1. felled
2. fall
3. fell
4. feel

**Question Number : 170 Question Id : 61097512997 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Fill in the blank with the right word from the words given below.

The teacher should \_\_\_\_\_ the students in a strong way.

**Options :**

1. expire
2. inspire
3. despair
4. perspire

**Question Number : 171 Question Id : 61097512998 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify which part of the sentence is wrong:**

The workers / don't / have to come early, / don't they?.

1            2            3            4

**Options :**

1. 1
2. 2
3. 3



3. 3

4. 4

**Question Number : 174 Question Id : 61097513001 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify which part of the sentence is wrong:**

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

1                      2                                      3                      4

**Options :**

1. 1

2. 2

3. 3

4. 4

**Question Number : 175 Question Id : 61097513002 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify which part of the sentence is wrong:**

The volley ball team / has entered into / the court / with great enthusiasm.

1                      2                                      3                      4

**Options :**

1. 1

2. 2

3. 3

4. 4

**Question Number : 176 Question Id : 61097513003 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Choose the correct alternative to replace the *storm in a tea cup* part which may improve the sentence:

The issue is just a *storm in a tea cup*. Don't worry about it.

**Options :**

1. Storm in a cup of tea

2. a storm in a cup

3. a whirl in a cup

4. no improvement necessary

**Question Number : 177 Question Id : 61097513004 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Most of the politicians suffer from *a tooth in the mouth* disease.

**Options :**

1. a finger in the mouth
2. foot in the mouth
3. a hand in the mouth
4. no improvement necessary

**Question Number : 178 Question Id : 61097513005 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No 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 I know the answer* I would have helped you.

**Options :**

1. Had I known
2. Had I knew
3. Had I had known
4. No improvement necessary

**Question Number : 179 Question Id : 61097513006 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

No sooner did the bell ring then the students rushed out.

**Options :**

1. when the students.
2. than the students
3. had the students
4. No improvement necessary

**Question Number : 180 Question Id : 61097513007 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

She has not helped me in the project because she has no axe to grind.

**Options :**

1. No axe on grind
2. no axes to grind
3. no axe to bind



4. No improvement necessary.

**Question Number : 181 Question Id : 61097513008 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

The moment he got his promotion, he was on cloud nine

**Options :**

1. Very happy state
2. very enthusiastic
3. very depressed
4. very much frightened

**Question Number : 182 Question Id : 61097513009 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

The students while immersing themselves in cell-phones failed to read the writing on the wall

**Options :**

1. to read fluently
2. to read with concentration

3. to notice the facts
4. to remember the facts.

**Question Number : 183 Question Id : 61097513010 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

Our car \_\_\_\_\_ while we were going to Bangalore.

**Options :**

1. broke down
2. brake down
3. break out
4. break up

**Question Number : 184 Question Id : 61097513011 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

On his invitation, only a few people \_\_\_\_\_ .

**Options :**

1. turned away

2. turned for
3. turned up
4. turned on

**Question Number : 185 Question Id : 61097513012 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

The Oxford Press has \_\_\_\_\_ this book after the demise of the writer.

**Options :**

1. brought into
2. brought down
3. brought up
4. brought out.

**Question Id : 61097513013 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (186 to 190)**

**To answer the questions read the passage carefully and choose the appropriate option.**

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

### **Sub questions**

**Question Number : 186 Question Id : 61097513014 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**What is the thrust area throughout the world?**

**Options :**

1. prosperity
2. acquiring knowledge
3. knowledge
4. culture

**Question Number : 187 Question Id : 61097513015 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**The travelers came to Nalanda and other universities, because they \_\_\_\_\_**

**Options :**

1. were attracted by their fame
2. wanted to acquire prosperity
3. wanted culture
4. wanted to have reputation.

**Question Number : 188 Question Id : 61097513016 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**The word,“ Prime ” means:**

**Options :**

1. chief
2. sole
3. supreme
4. centre

**Question Number : 189 Question Id : 61097513017 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**According to the writer about what the awareness is inadequate?**

**Options :**

1. certain centres of power
2. certain neighboring countries
3. certain distinctive competencies
4. certain areas of knowledge

**Question Number : 190 Question Id : 61097513018 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

“ Knowledge has always been the prime mover of prosperity and power. ” **Find out the adverb in this sentence:**

**Options :**

1. and
2. the
3. has
4. always

**Question Number : 191 Question Id : 61097513019 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Choose the correct option which gives meaningful sentence.

The Principal / to enter the particulars / instructed the Record Assistant / in the register.

A

B

C

D

**Options :**

1. ABCD

2. ADCB

3. ACBD

4. BDAC

**Question Number : 192 Question Id : 61097513020 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Choose the correct option which gives meaningful sentence.

Went home peacefully/ the mechanic / his business/ after completing

A

B

C

D

**Options :**

1. BADC

2. BCAD

3. DBCA

4. CBAD



**Question Number : 193 Question Id : 61097513021 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Choose the correct option which gives meaningful sentence.

Before you start / answering questions / carefully / read the instructions

A

B

C

D

**Options :**

1. ADBC

2. ABDC

3. BACD

4. BCDA

**Question Number : 194 Question Id : 61097513022 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Choose the correct option which gives meaningful sentence.

Many of our jobs / may take away / in near future / Artificial intelligence

A

B

C

D

**Options :**

1. ABCD

2. BCAD



3. DBAC

4. CBAD

**Question Number : 195 Question Id : 61097513023 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Choose the correct option which gives meaningful sentence.

Chinese economy/ by the sudden appearance / is deeply affected / of Covid-19.

A

B

C

D

**Options :**

1. BADC

2. BCAD

3. ABCD

4. ACBD

**Question Number : 196 Question Id : 61097513024 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify the mood of the following sentences:**

“May God bless you” the speaker is \_\_\_\_\_.

**Options :**

1. Requesting
2. wishing
3. commanding
4. suggesting

**Question Number : 197 Question Id : 61097513025 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify the mood of the following sentences:**

“Don’t make a noise”, the teacher said. The teacher is \_\_\_\_\_.

**Options :**

1. Requesting
2. wishing
3. suggesting
4. ordering

**Question Number : 198 Question Id : 61097513026 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify the mood of the following sentences:**

“Congratulations, you stood first in the University”. The speaker is \_\_\_\_\_ .

**Options :**

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

**Question Number : 199 Question Id : 61097513027 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify the mood of the following sentences:**

“How dare you are to enter the confidential room.!!”

**Options :**

1. threatening
2. exclaiming
3. commanding
4. suggesting

**Question Number : 200 Question Id : 61097513028 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

**Identify the mood of the following sentences:**

“Without my knowledge it happened, I am sorry.”

**Options :**

1. Commenting
2. appreciating
3. commanding
4. apologizing